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Understanding Physical Activity Participation and Promotion after Breast Cancer: An Exploration of Palestinian Women's and Health Care Professionals' Perspectives

By

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Abstract

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Background

Physical activity is recognised as an effective strategy to mitigate the side effects of cancer treatments. Despite this, a large number of women after breast cancer remain physically inactive. Cultural sensitivities may impact on and shape women's' physical activity participation. There is an important role for health care professionals who face challenges in promoting physical activity to their cancer patients.

Study Design

This research was conducted in two phases. Firstly, a systematic review to identify factors affecting physical activity participation and promotion, from both women after breast cancer and oncology health care professionals' perspectives, worldwide. Following this, a qualitative study explored Palestinian women's perspectives of what affects their physical activity participation after breast cancer and health care professionals' perspectives of what affects their promotion of physical activity to cancer patients in the occupied Palestinian territories.

Findings:

Phase one identified themes of daily living with breast cancer, altruism, changing identities, and promoting physical activity. While phase two highlights what can be described as Palestinian women's captivity to the consequences of breast cancer. Palestinian female Identity and a culture of shame and pettiness, as well as an ongoing political situation, which together imposes restrictions on their PA participation. Other barriers were encountered by health care professionals regarding physical activity promotion, all of which may be related to work pressure, lack of knowledge and health care system referral scheme to physical activity.

Conclusion:

This research provides new knowledge and understandings about physical activity participation in women after breast cancer emphasising the importance of culture. These findings help to raise the awareness of all women's experience and in particular, give Palestinian women a 'voice'. It highlights the need to develop and implement culturally tailored physical activity recommendations that may increase participation among women after breast cancer.

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Glossary and Abbreviations

ACS	**American Cancer Society**
ACSM	**American College of Sports Medicine**
BC	**Breast cancer**
HCP	**Health Care Professionals**
ME	**Middle East**
MENA	**Middle East and North Africa**
NCCN	**National Comprehensive Cancer Network**
oPt	**Occupied Palestinian Territories**
PA	**Physical Activity**
PIS	**Participant Information Sheet**
PT	**Physiotherapist**
Researcher	**PhD student**
UEA	**University of East Anglia**
UK	**United Kingdom**
US	**United States**
WHO	**World Health Organisation**
WABC	**Women after breast cancer**

Chapter 1: General Introduction

Breast Cancer in Women, Physical Activity & Palestinian Culture

Abstract:

This introduction chapter will describe the breast cancer diagnosis, treatment, and surveillance options in section one. Then at section two will introduce the exercise/physical activity (PA) and cancer guidelines and factors affecting cancer patients' participation. Section three will introduce the role of oncology health care professionals (HCPs) in promoting physical activity in section three. At section four of the chapter, I will introduce the research setting and describe the cancer healthcare system in occupied Palestinian territories and its challenges. Also, I will describe breast cancer from Arabic and Islamic view and the cultural commonalities with Palestinian women. Finally, I will explore the physical activity among Arab/Muslim women position and role of women highlighting factors which may affect PA participation among Arab/Muslim women, especially in the Middle East.

1.1 Background

Breast cancer is the most commonly diagnosed cancer in women, both in the developing and developed world (World Cancer Research Fund/American Institute for Cancer Research., 2018). There were an estimated two million new cases worldwide in 2018 (World Cancer Research Fund/American Institute for Cancer Research., 2018). Survival rates differ across the world but are generally improving (Cancer - ACRM, 2019). Rates range from 80% and above in North America, Sweden and Japan, to around 60% in middle-income countries and below 40% in low-income countries (Cancer - ACRM, 2019). The average 5-year survival rate for women with invasive breast cancer is 90%, and the average 10-year survival rate is 83% (Cancer - ACRM, 2019). As breast cancer becomes a chronic condition, health care professionals (HCPs) must recognise and manage the long-term sequelae of the therapeutic modalities used to treat it (Bodai, 2015). Breast cancer treatment is changing, with the widespread use of several lines of treatment and the switching to endocrine agents over long periods (Cruickshank & Barber, 2019). Moreover, cancer treatments, such as surgery, chemotherapy, hormone therapy and/or radiation, can result in long-term detrimental side effects including morbidity, a decline in functional status, and/or subsequent mental health sequelae (Cleeland et al., 2013). Thus, setting up appropriate support, follow-up after treatment and promotion of a healthy lifestyle from HCPs is a crucial aspect of the comprehensive care for women after breast cancer treatment (Chopra & Chopra, 2014). However, breast cancer guidelines across the world differ concerning follow-up practice (Cancer - ACRM, 2019) and there is a lack of consensus globally as to how, when, and by whom, follow-up care is provided (Cruickshank & Barber, 2019).

Physical activity (PA) is recognised as an effective and feasible intervention strategy that can help mitigate the side effects of breast cancer treatments (Santa Mina et al., 2018). Moreover, PA is well documented to be safe both during and after treatment (Pennington & McTiernan, 2018).

Despite the known benefits of PA, overall, PA levels have been consistently low for women after cancer treatment for the last ten years (Mason et al., 2013), with a large number of women remaining physically inactive after treatment (Lucas et al., 2017). Many factors affect PA uptake by women after their breast cancer treatment ends, which need to be addressed more carefully. This research focuses on Palestinian women living in the occupied Palestinian territories (oPt). Palestinian society has strong conservative values and traditional lifestyles (Almuhtaseb et al., 2020). It is traditionally a collectivist society that gives priority to the needs of the family compared to individual needs, in which women play a central role preserving cultural norms and values through child care (Surbone, 2008). This tendency is strengthened by the long Israeli–Palestinian conflict which promotes an appreciation of identities that are distinctive of a cultural tradition (Almuhtaseb et al., 2020).

Although health care professionals generally accept exercise and PA as an effective therapeutic and supportive care strategy, engaging HCPs to discuss exercise with their patients has been challenging (Santa Mina et al., 2018). Therefore, this PhD is a study identifying factors both affecting PA participation among women after breast cancer treatment, and factors affecting the promotion of PA by health care professionals (HCPs) to their cancer patients by exploring Palestinian women and HCPs' perspectives.

In the next sections, I will explain how my interest in this particular subject developed and introduce definitions and conceptualisations for this research.

1.1.1 Researcher background and interest

I came to this research topic as a result of being a Palestinian woman with experience of working as a physiotherapist with women who had breast cancer in the oPt My interest in cancer arose my father died from lung cancer and I become more interested in how the ongoing complications of inactivity affect a cancer patient’s life. Thus, PA and cancer is an enduring and passionate interest of mine wanting to understand in greater depth PA and its effects for cancer patients.

My interest in breast cancer was because most of my patients were women after breast cancer, being a female physiotherapist working in the (oPt). These women are apparently cancer-free and experiencing different issues from when they were first diagnosed or during their breast cancer treatment. This subject was something that I felt deserved investigation, and so, I began to search for a PhD that would allow me to research PA in women after breast cancer specifically in the oPt.

I sought to embrace all previous research on the factors affecting PA participation among women after breast cancer and to focus on the perspectives of both women after breast cancer and HCPs. I used different research methods as I initially conducted a systematic review study and critically appraised the published literature on what might hinder or facilitate PA uptake and participation among women after breast cancer and PA promotion by HCPs working with cancer patients, particularly to women with breast cancer. Secondly, I wanted to explore these factors in a context to satisfy my Palestinian experience and heritage. Thus, I conducted an exploratory qualitative study in the oPt using semi-structured interviews with women after breast cancer and HCPs. Finally, I considered how to bridge the gap between these studies and groups.

I will now introduce the topics of breast cancer, treatment modalities and side effects, and then describe the context of PA among breast cancer patients and survivors, PA guidelines, the benefits of PA during and after cancer treatment and the level of PA, especially for women after breast cancer. Also, I will introduce HCPs who work with cancer patients and what might affect their role in promoting PA to their cancer patients. Then, I will describe the health status and incidence of cancer in the oPt and the cultural and political influences on physical activities for Palestinian women.

1.2.1 Definitions and conceptualisations

This section will introduce the concepts, with more in-depth descriptions, relationships analysis of those concepts, and consideration of the factors affecting PA uptake among women after breast cancer and HCPs' promotion, especially for Palestinian women who live in and are treated by HCPs who work in the Palestinian territories.

Women after breast cancer (WABC): In order to understand women's experience after treatment, there is a need to first appreciate what happens psychologically and socially as a result of being a patient in an oncology system (Powers et al., 2016). Conventional treatment stops when surgery, chemotherapy, radiotherapy conclude but some women might still be taking adjunct hormone therapies. The focus of this study is women, after they have finished their active cancer treatment, which is important because public discourse suggests that after treatment a cancer patient is well again, when that may not entirely be the case (McCann et al., 2010; Powers et al., 2016). In addition, studies have shown that PA can help to alleviate some of the adverse effects of adjuvant therapy (Schmitz et al., 2019; Levett-Jones & Jones, 2018) and there is strong evidence that PA reduces the risk of breast cancer recurrence and breast cancer-related death (de Boer et al., 2017).

Health care professionals (HCPs): These are key people working with cancer patients and survivors, including oncologists, surgeons, nurses, physiotherapists, occupational therapists etc.

Physical activity (PA): Physical activity is defined as any bodily movement produced by skeletal muscles that results in energy expenditure (Caspersen et al., 1985). Physical activity in daily life can be categorized into occupational, sports, conditioning, household, or other activities (Caspersen et al., 1985).

The term “physical activity” should not be mistaken for “exercise” as this is a subcategory of PA that is planned, structured, repetitive and purposeful; in that the improvement or maintenance of one or more components of physical fitness is the objective.

Culture: Culture is a complex concept embedded in various aspects of life. The defining features of a culture that involves the characteristic features of everyday existence (such as diversions or a way of life) shared by people in a place or time that determine what is typical or atypical and acceptable or unacceptable (Merriam et al., 2001).

1.3.1 Breast cancer

Breast cancer develops from the cells in the ducts, lobules and connective tissue of the breast (Greenhalgh & O'Riordan, 2018) it is normally slow growing (although there are exceptions), and it can take several years for one cancerous cell to become a mass that can be seen on a mammogram or an individual can feel (Greenhalgh & O'Riordan, 2018).

Breast cancer can be classified into stages. The staging system most often used for breast cancer is the American Joint Committee on Cancer (AJCC) TNM system, which is based on 7 key pieces of information: anatomic, which is based on extent of cancer as defined by tumour size (T), lymph node status (N), and distant metastasis (M); and prognostic, which includes anatomic TNM plus tumour grade and the status of the biomarkers’ human epidermal growth factor receptor 2 (HER2), oestrogen receptor (ER) and progesterone receptor (PR)(Sparano, & Lee, 2019).

The stage of cancer describes how much cancer is in the body determining how serious the cancer is and how best to treat it. Doctors also use cancer stages when talking about survival statistics (Sparano, & Lee, 2019). The earliest stage breast cancers are stage 0 (carcinoma in situ). It then ranges from stage I (1) through to IV (4). As a rule, the lower the number, the less the cancer has spread. A higher number, such as stage IV, means cancer has spread more. And within a stage, an earlier letter means a lower stage.

Each stage is dependent on tumour size, the number of affected lymph nodes and whether the cancer has spread (or metastasised) to other parts of the body (Sparano, & Lee, 2019).

Survival rates differ across the world but are improving (Roser & Ritchie, 2017) in part due to improved screening and access to medical care in many nations; earlier diagnosis; better surgery; and advanced tailored adjuvant treatment regimens (Miller et al., 2019). The 5-year relative survival rate approaches 100% for the 44% of patients with breast cancer who are diagnosed at stage I but declines to 26% for those diagnosed with stage IV breast cancer (5% of cases) (Miller et al., 2019).

1.4.1 Common side effects after breast cancer treatments

Breast cancer treatment is planned on an individual basis because every patient is different.
It is imperative to discuss the various approaches to the treatment of breast cancer, then the common side effects of cancer treatments, and then how and if PA could be beneficial for women after breast cancer. The types and extent of treatment that each patient receives vary and depend on factors such as breast cancer stage and type, including hormone receptor status; genetic factors (such as the presence of known mutations in inherited breast cancer genes); and the patient's age, menopausal status, general health, and individual preferences (Runowicz et al., 2016). The most common treatment among women with early-stage (stage I or II) breast cancer is breast-conserving surgery with adjuvant radiation therapy (49%), although 34% of patients undergo mastectomy (Miller et al., 2019). Treatment with radiotherapy is usually administered five days a week for five to six weeks (Runowicz et al., 2016). Women diagnosed with metastatic disease (stage IV) most often receive radiation and/or chemotherapy alone (56%), with one-quarter receiving no treatment (although some of these patients receive hormonal therapy) (Miller et al., 2019). Thus, breast cancer subtype guides the standard systemic therapy administered, which consists of endocrine therapy for all HR+ tumours (with some patients requiring chemotherapy as well), trastuzumab-based ERBB2-directed antibody therapy plus

chemotherapy for all ERBB2+ tumours (with endocrine therapy given in addition, if concurrent HR positivity), and chemotherapy alone for triple-negative breast cancer (Waks & Winer, 2019).

Many cancer survivors experience long-term and latent effects of cancer treatment. Long-term effects are side effects that arise during treatment and may persist over time, whereas latent effects may not appear until many years after treatment completion (Gegechkori et al., 2017). Women's experience of breast cancer is multifactorial, affecting almost all aspects of their lives during and after treatment. Although each woman's experience with breast cancer is unique, many will experience physical, psychological and social challenges. Risks for developing long-term side effects after breast cancer treatment may depend on age at the time of diagnosis, co-morbidities, and type, dose and duration of treatment (Gegechkori et al., 2017).

Physical related side effects treatment

The most common physical related side effects follow below.

Fatigue

Up to 94% of breast cancer patients experience fatigue at some point following diagnosis (Berger et al., 2012). This is defined as a subjective, unpleasant symptom, which incorporates feelings ranging from tiredness to total body exhaustion, interfering with the individual's ability to function to their usual level (Whitehead, 2009). It is increasingly accepted as a significant long-term side-effect (Mackereth et al., 2015) which may remain for years after treatment, with 26% and 16% of women continuing to experience fatigue six months and six years after completing treatment, respectively (Schmitz et al., 2012). Mechanisms for persistent fatigue among cancer survivors are not fully understood. Several pathways, including chronic inflammation, autonomic imbalance, hypothalamic-pituitary-adrenal-axis dysfunction and mitochondrial damage, may disrupt normal neuronal function and result in fatigue (Berger et al., 2012).

Weight gain

Weight gain during and after breast cancer treatment is a common side effect of treatment (chemotherapy and hormone therapy), as it can bring on menopause and weight gain is well known after menopause (Greenhalgh & O'Riordan, 2018). Up to 84% of women gain weight after a breast cancer diagnosis, with average gains between 2.5 to 5.2 kilograms during the treatment period (Ghose et al., 2015).

Reduced body fitness

Aerobic fitness is an important indicator of physical fitness, function, and all-cause mortality (Riebe et al., 2018). Research has shown that approximately one-third of women (32%) with breast cancer have an aerobic fitness level less than the threshold for functional independent living during and up to approximately three years following completion of treatment (Jones et al., 2012).

Pain

Pain is common in cancer survivors, especially in the first few years after treatment. Approximately 5% to 10% of survivors have chronic severe pain that interferes with functioning. The prevalence is much higher in women with breast cancer (Brown et al., 2014). Pain can arise due to both the underlying disease and the various treatments the patient has been subject to. For example, recent studies suggest that approximately one-third of women develop persistent pain after breast cancer surgery or radiation therapy (Wang et al., 2016), with younger women and those who undergo axillary lymph node dissection having the highest risk (Wang et al., 2016). Chemotherapy can cause painful chemotherapy-induced peripheral neuropathy (CIPN) and there is an increased prevalence of visceral post-surgical pain and aromatase inhibitor-induced arthralgia (Brown et al., 2014).

Musculoskeletal issues

Musculoskeletal issues, including pain, stiffness, poor range of motion, reduced muscular strength, the development of lymphoedema or axillary web syndrome (Stubblefield & Keole, 2013) and other issues are other common side effects of breast cancer treatment (Bodai, 2015).

Findings indicate that up to 60% of women experience at least one upper body symptom (weakness, stiffness, numbness, tingling, pain, poor range of motion, swelling) between six months and three years after surgery (Hayes et al., 2012).

Approximately one in five (22%) women experience upper body symptoms six months after surgery, with 15% to 25% continuing to experience impaired upper body function six years' post-surgery (Schmitz et al., 2012).

Osteoporosis

Almost 80% of women with breast cancer experience some degree of bone loss as a consequence of chemotherapy and endocrine treatment, which can lead to a significantly increased fracture risk. The loss of bone mineral density is twice as high, compared to healthy post-menopausal women (Kalder & Hadji, 2014).

Lymphoedema

Lymphoedema occurs in approximately 20% of women following surgery or radiation (DiSipio et al., 2013).

Premature menopause

Most women experience menopausal symptoms, especially if they are pre-menopausal and thrown into instant or early menopause due to chemotherapy or hormonal therapy (Greenhalgh & O'Riordan, 2018). Menopausal symptoms such as vasomotor hot flushes are observed among 50–70% of Tamoxifen users (Shandley et al., 2016).

Psychological related side effect

The most common psychological related side effects follow below.

Depression

Recent studies show that depression affects up to 2%, and anxiety affects 10% of patients with cancer (Pitman et al., 2018). Specific to breast cancer, research shows that the experience of diagnosis and treatment of breast cancer may result in considerable distress, as this disease challenges a woman’s identity, self-esteem, body image and relationships (Campbell-Enns & Woodgate, 2016). Fear of cancer recurrence affects over half of breast cancer survivors and may increase the risk of developing mental health problems (Ellegaard et al., 2017).

Moreover, analyses reveal that cancer-related fatigue, PA level, systemic side effects and body image were significant predictors of depressed mood among breast cancer survivors (Galiano-Castillo et al., 2014).

Body image concerns

Breast cancer treatment can make women look and feel very different, due to scars, breasts of different shapes or numb to the touch, or weight gain (Greenhalgh & O'Riordan, 2018). Treatment may challenge a women’s self-image, changes in identity and femininity can arise as the breast is strongly associated with attractiveness and sexuality, especially if mastectomy is involved (Howard et al., 2007). Findings in a systematic review study of 36 major cross-sectional studies suggested that body image is a complex post-treatment concern for breast cancer survivors, particularly for younger women (Paterson et al., 2015).

Sexual issues

A range of changes to a woman’s sexuality can follow breast cancer, including disturbances to sexual functioning, disruptions to sexual arousal, lubrication, orgasm, sexual desire and sexual pleasure, resulting from chemotherapy, chemically induced menopause, Tamoxifen and breast cancer surgery (Emilee et al., 2010). Studies have shown that women’s experience of changes in sexuality includes, fear of loss of fertility, negative body image, feelings of sexual unattractiveness, loss of femininity, depression and anxiety, as well as alterations to a sense of sexual self (Fobair & Spiegel, 2009; Emilee et al., 2010; Greenhalgh & O'Riordan, 2018).

Other related side effects

As breast cancer treatment evolves with the widespread use of biological agents, patients receiving several lines of treatment and the use of endocrine agents over long periods, there are new risks, unknown short- and long-term side effects and some complicated decisions to be made by patients, their families and HCPs working in oncology (Cruickshank & Barber, 2019). These complications may restrict physical functioning and participation in activities of daily living and life roles of many patients, consequently limiting their quality of life (Stuiver et al., 2015).

In the next section, the potential benefits of PA following breast cancer diagnosis will be presented and the PA guidelines that HCPs can use to promote PA to their cancer patients.

1.2 Overview of exercise/physical activity and cancer guidelines

The follow-up care of people diagnosed with breast cancer varies across the world (Cruickshank & Barber, 2019) but PA has been recognised as an effective and feasible intervention strategy that can help mitigate some of the above-mentioned side effects of cancer treatments (Santa Mina et al., 2018). During the past three decades, studies exploring the benefits and effects for PA related to cancer patients have steadily increased. This is a testament to the growing interest of HCPs in the potential for PA to improve the overall care and health of cancer patients. The safety and benefits of PA are well documented for all cancer survivors (Santa Mina et al., 2018).

Specifically, it has been shown to be safe, feasible, have a positive effect and be an effective form of adjuvant therapy following breast cancer treatment (Olsson Möller et al., 2019).

1.2.1 Physical activity

PA is any bodily movement produced by skeletal muscles requiring energy expenditure, it includes exercise and activities done as part of playing, working, active transportation, household chores and recreational activities (Caspersen et al., 1985).

How much physical activity do we need to be healthy?

An accurate short answer is “more” or “some is good, more is better” (Powell et al., 2011). The 2018 Physical Activity Guidelines for Americans translate these terms into practical guidelines:

avoid being sedentary; some activity is better than none; adults should move more and sit less throughout the day. Adults should do at least 150 minutes (2 hours and 30 minutes) to 300 minutes (5 hours) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) to 150 minutes (2 hours and 30 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. Preferably, aerobic activity should be spread throughout the week. Additional benefits occur as the volume of activity increases; a range of 500–1000 MET-min/week provides substantial health benefits (2018 Physical Activity Guidelines Advisory Committee Scientific Report, 2018).

Metabolic Equivalent (MET) represents a standard amount of oxygen consumed by the body under resting conditions, and is defined as 3.5 mL O_2/kg × min or ~1 kcal/kg × h. It is used to express the energy cost of physical activity in multiples of MET (Melzer et al., 2016).

Intensity of PA

Intensity refers to the rate at which the activity is being performed or the magnitude of the effort required to perform an activity or exercise (Powell et al., 2011). The intensity of PA varies along a continuum from rest to maximal exertion (Courneya, 2014). Arbitrary cut-off points in terms of energy expenditure are used to divide activities into various intensity categories, including sedentary, light, moderate and vigorous. Other important attributes of PA include type, frequency, duration, programme length, progression, programme variability and context (physical and social environment) (Courneya, 2014).

The examples of moderate to vigorous-intensity physical activities given below are provided as a guide and vary between individuals (Physical activity, 2019).

Table 1.1: Examples of moderate to vigorous-intensity physical activities

Moderate-Intensity Physical Activity (requires a moderate amount of effort and noticeably accelerates the heart rate) Approximately 3-6 METs	**Vigorous-Intensity Physical Activity (requires a large amount of effort and causes rapid breathing and a substantial increase in heart rate) Approximately >METs**
Brisk walking	Running
Dancing	Walking /climbing briskly up a hill
Gardening	Fast cycling
Housework and domestic chores	Aerobics
Active involvement in games and sports with children/ walking domestic animals	Competitive sports and games (fast swimming, football, volleyball, hockey, basketball)
Carrying/moving moderate loads (<20kg)	Carrying/moving heavy loads (>20kg)
General building tasks (e.g. roofing, painting, etc.)	Heavy shovelling or digging ditches

Whilst for most people walking expends enough energy to be considered 'moderate intensity' activity, for those individuals who are particularly unfit, walking at a pace of 3mph can achieve activity that is actually of vigorous intensity thus conferring associated health gains (Kelly et al., 2011).

1.2.2 Guidelines for physical activity and cancer

The benefits of PA following a cancer diagnosis are shown in a growing evidence base supporting integrating exercise and PA into breast cancer care. Since the early 1990s, evidence has suggested that regular, sustained participation in PA protects against some cancers (World Cancer Research Fund/American Institute for Cancer Research., 2018).

Many organisations around the world have issued evidence-based exercise guidance for patients with cancer and cancer survivors (Patel et al., 2019; Cormie et al., 2018; Courneya, 2017; Buffart et al., 2014; Kushi et al., 2012; Schmitz et al., 2010; Doyle et al., 2006; Brown et al., 2003).

In 2003, the American Cancer Society (ACS) published the first report to provide HCPs and cancer survivors with guidance for PA (Brown et al., 2003). The report suggested that cancer survivors follow the guidelines for cancer prevention (e.g., at least 30 minutes of moderate to vigorous PA at least 5 days per week above usual activities; 45–60 minutes of intentional PA is preferred) as soon as it is safe to do so, even while undergoing adjuvant treatment such as chemotherapy or radiation (Brown et al., 2003). This was updated in 2006 to highlight the importance of daily and regular PA and encourage moving from a sedentary to an active lifestyle (Doyle et al., 2006).

In 2009, the American College of Sports Medicine (ACSM) convened a roundtable of clinical and research experts in the field of cancer and exercise to develop exercise testing and prescription specifically for cancer survivors (Schmitz et al., 2010). The panel concluded that cancer survivors should adopt aerobic, resistance training and flexibility activities consistent with the age-appropriate guidelines for adults from the U.S. Department of Health and Human Services (Schmitz et al., 2010). In 2012, this was updated suggesting survivors should follow the survivor-specific guidelines written by the ACSM expert panel (Kushi et al., 2012).

The British Association of Sport and Exercise Sciences highlights all cancer survivors should be encouraged, as a minimum, to avoid being sedentary (Campbell et al., 2012). Unless advised otherwise, cancer survivors should follow the health-related PA guidelines provided for the general UK population which includes reducing sedentary behaviour (Campbell et al., 2012).

In 2018, the Clinical Oncology Society of Australia position statement on exercise in cancer care (2018) encouraged HCPs professionals worldwide to spread the message to the general population and cancer survivors and promote PA as much as their age, ability, and cancer status will allow (Cormie et al., 2018).

Recently (2019), the American College of Sports Medicine updated its exercise guidance for cancer prevention as well as for the prevention and treatment of a variety of cancer health-related outcomes (e.g. fatigue, anxiety, depression, function and quality of life). The current PA guidelines of 150 to 300 $\text{min}\cdot\text{wk}^{-1}$ of moderate or an equivalent amount of vigorous-intensity aerobic activity (75 to 150 $\text{min}\cdot\text{wk}^{-1}$) are recommended (Patel et al., 2019).

The exercise guidance further advises cancer survivors to avoid inactivity and return to normal daily activities as soon as possible following diagnosis (Courneya, 2017).

Accordingly, HCPs should advise every cancer survivor to “avoid inactivity” (Campbell et al., 2019), and that they should start low and progress to at least 150 minutes of moderate-intensity aerobic exercise, with two to three moderate-intensity resistance exercise sessions each week (Patel et al., 2019 ; Cormie et al., 2018; Courneya, 2017; Buffart et al., 2014) or 75 minutes of vigorous aerobic exercise per week with inclusion of strength training exercises at least two days per week (Day et al., 2016 ; Schmitz et al., 2010).

In the next section I will present considerations for PA in women with breast cancer.

1.2.3 Safety considerations, contraindications and precautions regarding exercise /PA during or after cancer treatment

Table 1.2 shows general safety considerations for exercise during or after treatment, from a concise evidence review from Macmillan.org.UK (Stefani et al., 2017).

Table: 1.2 General safety considerations regarding exercise during or after treatment

Potential adverse event	Safety principles/precautions
Exacerbation of symptoms (e.g. pain, fatigue, nausea, dyspnoea)	Monitor symptoms and modify activity type based on site of treatment (e.g. avoid exercise bike after prostate/rectal surgery) Avoid high-intensity activities during symptomatic episodes Modify exercise type based on site of treatment (e.g. avoid exercise bike after prostate/rectal surgery).

Anaemia	Delay moderate to vigorous intensity activities until resolved
Immunosuppression	If the patient has low white blood cell counts, avoid high intensity/volume of exercise (keep to light-moderate intensity) Minimise use of public exercise venues if immunosuppressed.
Infection	Avoid activities needing considerable balance/coordination (e.g. treadmill, bicycle) if the patient has dizziness, frailty, peripheral sensory neuropathy. Minimise exercises if using catheters, or during wound recovery.
Falls	If the patient has dizziness, frailty, peripheral sensory neuropathy, incorporate balance and co-ordination exercises (e.g. tai chi) and avoid activities needing considerable balance/ coordination (e.g. treadmill). Incorporate muscle strength, balance and co-ordination exercises
Bone fracture	Avoid high impact or contact activities if the patient has bone metastases or is at osteoporosis risk
Hernia	Anyone with a stoma should start with low-resistance exercise and progress slowly to avoid herniation
Lymphoedema	To prevent lymphoedema, progress resistance exercises in small and gradual increments To avoid exacerbation of lymphoedema, avoid strenuous repetitive exercise with affected limb, and wear a compression garment

1.2.4 Physical activity consideration with women after breast cancer

Although exercise and PA training and maximal and sub-maximal exercise testing in women with breast cancer are relatively safe (Cheema et al., 2014; Schmitz et al., 2010; Doyle et al., 2006), a longitudinal study in breast cancer survivors seven years after axillary lymph node dissection shows that 35–58% of women reported persistent shoulder and arm pain (Kootstra et al., 2013). Thus, it is important to minimise the risk of musculoskeletal injuries, which may result from surgical intervention, radiation or hormonal therapies (Hughes & Mojica, 2011).

Since women with breast cancer commonly receive cardiotoxic chemotherapeutic agents, awareness of cardiac compromise is warranted (Maltser et al., 2017) thus a tailored exercise programme developed and initially supervised by HCPs is recommended (Galantino & Stout, 2013).

When to begin?

Evidence-based guidelines recommend the implementation of PA programmes or other initiatives pre, during and post cancer treatment, including breast cancer (Day et al., 2016; Stout et al., 2016). PA has potential benefits at all stages of the cancer care pathway (Figure 1.1) (Adraskela et al., 2017).

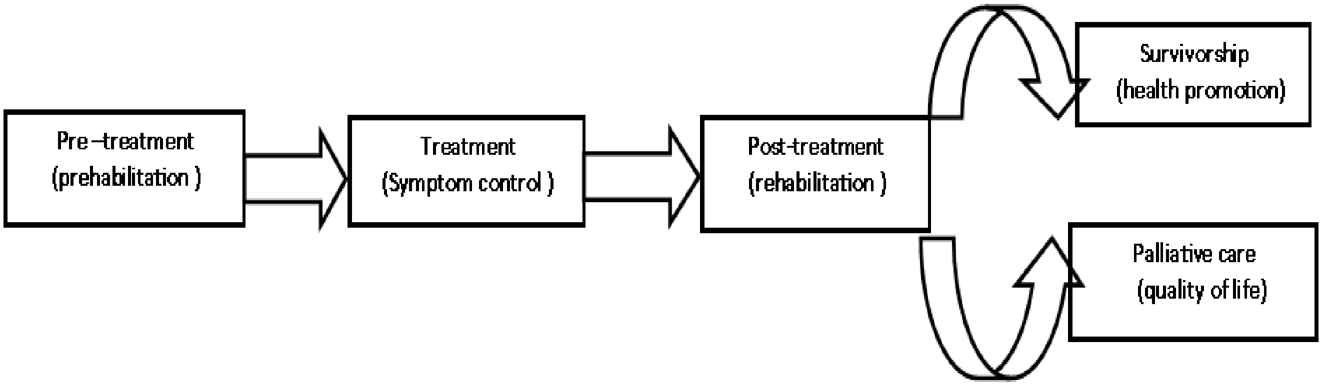


Figure 1.1: Key stages of the cancer care pathway where physical activity has potential benefits

1.2.5 Key findings of physical activity benefits on health outcomes for breast cancer

As this research is on the period after breast cancer treatment, I will present a summary of the beneficial role of PA and exercise to attenuate some of the side effects of breast cancer treatment both during active and upon completion of treatment.

Improvement of general health

Becoming more physically active is one of the best ways to improve health and physical function after a breast cancer diagnosis (Hamer & Warner, 2017; Battaglini, 2014; Ibrahim &Al-Homaidh, 2010).

Improved quality of life

Quality of life (QOL) has become an important outcome measure in the treatment of cancer patients. QOL is a subjective phenomenon with no generally agreed definition. HRQoL is "a multidimensional construct encompassing perceptions of both positive and negative aspects of dimensions such as physical, emotional, social and cognitive functions.

It also includes the negative aspects of somatic discomfort and other symptoms produced by a disease or its treatment" (Osoba, 1994). For example, ability to perform daily activities, patient satisfaction and levels of functionality are all essential to determining QoL in women after breast cancer.

Several studies have shown that PA contributes to improving quality of life in women following breast cancer (Rogers et al., 2017; Furmaniak et al., 2016; Battaglini, 2014; McNeely et al., 2006). Moreover, the results of the 2016 updated Cochrane review, which included 32 studies with 2,626 randomised female patients, indicated that PA interventions might have small-to-moderate effects on some aspects of health-related quality of life for women who have undergone adjuvant therapy for breast cancer. However, these results should be interpreted with caution due to the heterogeneity of interventions and outcome measures and the very low-to-moderate quality of evidence (Furmaniak et al., 2016). PA can contribute to reduce symptoms of anxiety (Rogers et al., 2017; Speck et al., 2009) and reduced symptoms of depression (Rogers et al., 2017; Kumar et al., 2016; Battaglini, 2014) and some recent studies show PA can have positive effects on improved sleep quality (Rogers et al., 2017).

Reduction of morality, survival and recurrence

A review in 2017 concluded that there is strong evidence that PA reduces the risk of breast cancer recurrence and breast cancer-related death (de Boer et al., 2017). Also, a meta-analysis performed in 2015 analysing 22 eligible studies, found that if the PA guidelines from the study were met (i.e., ≥ 8 MET), there was a 33% reduced risk of breast cancer-related mortality and a 46% reduction in all-cause mortality (Lahart et al., 2015). Furthermore, Chen et al. followed 4,826 women with stages 1 to 3 breast cancer identified 6 months after diagnosis and found a 40% reduction in breast cancer-specific mortality (Chen et al., 2011). Bertram et al. observed similar results in 2010, when they studied 2,361 post-treatment survivors of breast cancer enrolled in the Women's Healthy Eating and Living study and found a 35% lower mortality risk when PA guidelines were followed (Bertram et al., 2010). Other studies have indicated that regular PA can decrease the chances of breast cancer recurrence (Hamer & Warner, 2017; Ibrahim & Al-Homaidh, 2010).

Reduced fatigue symptoms

Research has shown that PA can help lessen fatigue and improve physical fitness (Furmaniak et al., 2016; Battaglini, 2014; McNeely et al., 2006).

Cardiovascular health

Several studies found that PA can improve heart health (Battaglini, 2014; McNeely et al., 2006). Moreover, in terms of longer-term benefits, findings from a longitudinal prospective study of 2,973 women with breast cancer (mean age: 57 years) showed a 23% reduced risk of cardiovascular events ($p<0.01$) among breast cancer survivors who adhered to the National Exercise Guidelines for individuals with cancer, compared with those who did not follow the guidelines (Jones et al., 2016).

A summary of the ACSM updated evidence to support the efficiency of specific doses of exercise training to address cancer-related health outcomes for all cancer patients and survivors (Schmitz et al., 2019) is provided in Table 1.4.

Table 1.4: Level of evidence for the benefits of exercise on cancer-related health outcomes according to the American College of Sports Medicine (ACSM) Roundtable (2019)

Strong evidence	Moderate evidence	Insufficient evidence
Reduced anxiety	Sleep	Cardiotoxicity
Fewer depressive symptoms	Bone health (for osteoporosis prevention, not bone metastases)	Chemotherapy-induced peripheral neuropathy
Less fatigue		Cognitive function
Better quality of life		Falls
improved perceived physical function		Nausea
No risk of exacerbating upper extremity lymphoedema		Pain
		Sexual function
		Treatment tolerance

Despite this compelling evidence for PA with cancer patients, there is consensus that PA levels are low after cancer treatment. In the next section, I will describe the levels of PA among women after breast cancer treatment ends, but first, I will explain the main methods of measuring PA.

1.2.6 Measuring Physical Activity

Physical activity is a complex and multidimensional construct, thus difficult to measure (Broderick et al., 2014). However, it can be determined by different indicators separately (e.g. duration, frequency and intensity), and in aggregate, exercise dose can be described as the product of these three parameters (Wasfy & Baggish, 2016). Duration reflects the amount of time accrued in a single exercise session and, for aerobic/endurance exercise, is most often characterised using minutes or hours. Frequency captures the number of exercise sessions over more extended periods (i.e. days, weeks, or months). In sum, these two parameters reflect the total amount of time spent in exercise over a given period (Wasfy &Baggish, 2016).

Choosing a measure of physical activity

Research is often hindered by the challenge of employing a valid, reliable measure of PA that also adequately satisfies the research question or design and the main factors of any study population (i.e., age, gender, body weight, co-morbid conditions) should be considered (Sylvia et al., 2014). Thus, there are some considerations for measuring physical activity, especially with cancer patients:

1) Quality of PA measured (e.g., activity type, intensity, frequency, duration)
2) Objectivity of the data, subject burden (e.g., time and/or effort required to complete)
3) Cost/burden to administer
4) Specific limitations.

1.2.7 Reduced physical activity participation among women following a breast cancer diagnosis

Studies comparing PA levels of women with and without breast cancer showed mixed results. For example, Shi et al. (2017) study showed a higher PA level among breast cancer survivors than among females who had not had cancer (Shi et al., 2017). Whereas Philips et al. (2015) reported that breast cancer survivors were more sedentary and participated in less low-intensity activity than controls (Phillips et al., 2015). Also, guideline adherence, i.e. performing at least 150 minutes per week of moderate-to-vigorous PA, varied between studies from 15% to nearly 68% in women with breast cancer who were 2–10 years' post-diagnosis (Blanchard et al., 2008; Boyle et al., 2015; Kwon et al., 2011). Another study found a decrease in adherence from 29% within 20 weeks after primary treatment to 22% one year later (Sabiston et al., 2014). Recent data results from 1,160 breast, colorectal and prostate cancer survivors participating in the American Cancer Society's National Cancer Survivor Transition Study has shown that overall, 8.1% were inactive, 34.1% were insufficiently active, 24.3% were within 1 to less than 2 times the guidelines, and 33.4% exceeded guidelines by 2 or more times. Inactive people had significantly higher odds of being women (Troeschel et al., 2018).

PA levels decline amongst women after breast cancer treatment ends, previous systematic reviews have shown diverse variation in the factors affecting PA participation in cancer survivors, including breast cancer survivors, (Lavallée et al., 2019; Clifford et al., 2017; Browall et al., 2016). For example, treatment-related side effects (Browall et al., 2016), lack of time and caring responsibilities (Lavallée et al., 2019) and lack of sufficient information were some of the most frequently reported barriers to PA (Lavallée et al., 2019; Clifford et al., 2017; Browall et al., 2016). The most common facilitators for PA were gaining a feeling of control over health (Browall et al., 2016), having a supportive environment (Lavallée et al., 2019 and Browall et al., 2016) and exercising under the supervision of HCPs and with peers (Lavallée et al., 2019; Browall et al., 2016).

A systematic and well-organised research question may help in designing a novel research study (Grewal et al., 2016). **Thus, question one of my study was: "What are the factors that hinder or facilitate PA participation, among women after breast cancer treatment from both their perspective and HCPs' perspectives that affect HCPs abilities to promote PA to their cancer patients?" This will be answered by conducting a systematic review, presented in Chapter 3.**

1.3 Oncology Health Care Professional (HCP)

Various governmental strategies or guidelines have been developed in different countries to inform cancer survivorship practice, to meet breast cancer patients' needs and enhance their survival and well-being.

In the US, different organisations, such as the National Comprehensive Cancer Network (NCCN), the American Cancer Society (ACS), and the American Society of Clinical Oncology (ASCO), have released publications, guidelines and events related to cancer survivorship care. The Institute of Medicine (IOM) report, *From Cancer Patient to Cancer Survivor: Lost in Transition,* recommends some main elements of survivorship care, which are prevention, surveillance, health promotion, managing long term effects, and well-planned, coordinated care to help cancer patients progress from the acute treatment phase to life after cancer (Hewitt & Ganz, 2006).

The paradigm shifts in post-cancer care treatment, from disease-focused to wellness-comprehensive care, affords a unique opportunity for HCPs to promote healthy lifestyle behaviours for cancer survivors (Garcia & Thomson, 2014).

Accumulating evidence demonstrates that PA guidelines are reflecting the importance of HCPs such as nurses, physiotherapists and occupational therapists to cancer survivors, and suggests that HCPs are well placed to promote PA to their cancer patients during and after cancer treatment ends (Nccn.org, 2019; ACRM, 2019; Macmillan.org.uk, 2019). Still, the correct clinical approach for the cancer patient or survivor should be embedded through clinical patient evaluation, which ultimately will be used to determine the optimal time to begin a patient-specific PA exercise/rehabilitation programme (Stefani et al., 2017).

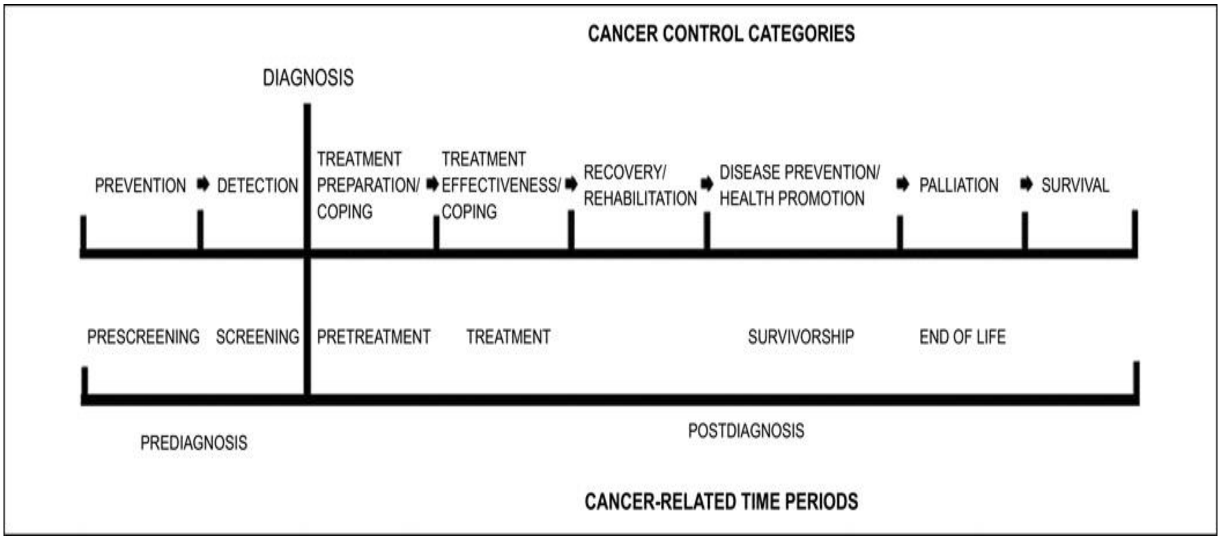


Figure 1.2: Physical activity and cancer control framework (Courneya & Friedenreich, 2007)

In the UK, the Department of Health established the National Cancer Survivorship Initiative (NCSI), which set out a partnership with Macmillan Cancer Support and NHS England to develop the “Living with and Beyond Cancer programme (LWBC) “to address patients’ needs with and beyond cancer (Richards et al., 2011).

The following are their top priorities; developing a recovery package that includes access to holistic needs assessment; treatment summaries; cancer care reviews; and patient education and support events. They also focus on understanding and commissioning of improved management of the consequences of treatment, in developing stratified pathways of care to support patients in self-management. Promotion of health and wellbeing, including PA, is also included (Nccn.org, 2019). Thus, promoting PA for women after breast cancer should be one of HCPs priorities during follow up consultation.

Role of oncology HCPs in promoting physical activity

The follow-up care of people diagnosed with breast cancer varies across the world (Santa Mina et al., 2018).

The literature proposes that HCPs can increase PA levels of patients with cancer substantially, especially women with breast cancer (Fisher et al., 2015; Jones et al., 2004). Still, there is limited evidence of their PA promotion to their cancer patients (Santa Mina et al., 2018).

A multidisciplinary approach is required for cancer patients, considering not only pathological conditions but also physical, psychological and social aspects, aiming to maintain and improving quality of life, especially for women after breast cancer treatment.

There is a need for organisational, environmental and individual approaches promoting PA (Lowe et al., 2016). Thus, enabling a broader, more evolved approach to the promotion of PA which looks beyond individual responsibility and sets appropriate follow-ups after treatment and promotion of a healthy lifestyle by HCPs is a crucial aspect of the comprehensive care for women after breast cancer (Chopra & Chopra, 2014). Healthcare and HCPs are part of this system, and within healthcare, HCPs are well-positioned to provide PA advice and thus help cancer survivors improve their lifestyle (Smith et al., 2017). However, few women after breast cancer report receiving lifestyle and PA advice from their HCPs (Queen et al., 2016). Little is known about the extent to which such HCPs integrate PA promotion into their practice, factors that influence promotion, or how this area of practice can be improved in line with the aspirations of current healthcare and public health guidance for PA and cancer.

Although HCPs appear to be interested in recommending PA to their cancer patients (Santa Mina et al., 2018), studies suggest limited promotion of PA by HCPs (Santa Mina et al., 2018). A recent international survey showed that only 20% of oncologists and other HCPs provide written information and 23% make referrals for PA (Hardcastle et al., 2018). A study of oncology nurses indicated that they promote PA to patients with cancer more often than physicians (Karvinen et al., 2012). A cross-sectional survey study of Australasian oncology nurses showed that they believed they were the significant providers of PA advice to their patients (Keogh et al., 2017). While an online survey study conducted by the Chartered Physiotherapists in Oncology and Palliative Care in Ireland showed that three quarters of physiotherapist's recommended/prescribed exercise with 81% or more of cancer patients in the past 6 months, with the exercises prescribed mostly in line with current guidelines (O'Hanlon & Kennedy, 2014).

Despite the critical role of HCPs in managing the broad spectrum of disease- and -related needs of cancer survivors, as well as a general acceptance that PA is an effective therapeutic and supportive care strategy, engaging HCPs to discuss PA with their cancer patients, has been challenging (Santa Mina et al., 2018). Commonly cited barriers to HCPs referring cancer patients to exercise and PA programmes include lack of awareness of the potential value of exercise in cancer populations, lack of knowledge regarding availability of such programmes, inadequate education and skills to make referrals and a belief that such referrals are not within the scope of practice for HCPs working in oncology (Hardcastle et al., 2018; Williams et al., 2015; Jones et al., 2005).

Accordingly, these factors encouraged me to explore how the interrelationships between cancer statuses, the health care system and the culture in one particular area of the world affect PA participation in women after breast cancer treatment ends, my home country, the occupied Palestinian territory. As the complex nature of culture is an essential aspect of this thesis, the next section will define culture and the cultural practices of Arab / Muslims.

1.4 Research Setting; the occupied Palestinian territory(oPt)

In this thesis, I use the term the occupied Palestinian territory oPt as it is the term used by the United Nations (UN) for those parts of Palestine occupied by Israel after the Arab–Israeli war of 1967 (History of Palestine, 2020) see Figure 1.3.

The occupied Palestinian territory has a long and tumultuous history as a crossroads for religion, culture, commerce, and politics. Other terms used for approximately the same geographic area include Canaan, Zion, the Land of Israel, Southern Syria and the Holy Land (History of Palestine, 2020). The area was part of the Ottoman Empire (1516-1916), then under the United Kingdom Mandate (1917-1947). In 1948, the UN proposed terminating the Mandate and partitioned Palestine into two independent states, one Palestinian Arab and the other Israeli Jewish, with Jerusalem internationalised (Resolution 181 (II) of 1947) (History of Palestine, 2020) and the State of Israel came into being in all of historic Palestine, except the West Bank and Gaza Strip which came under Israeli occupation in 1967.

Map Sources: Europa Technologies, OCHA, UNCS.
The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities or concerning the delimitation of its frontiers or boundaries. Map created Jun 2010 – www.reliefweb.int

Figure 1.3: Location of the occupied Palestinian territory

The term “Palestinians” refers to the people who live in the occupied Palestinian territory which consists of the West Bank, including East Jerusalem, and the Gaza Strip. Palestinians identify themselves as Arabs because of the common language and culture shared with other Arab nationalities, but maintain their distinctive identity as Palestinians (Khalidi, 1991). More than one-third of Palestinians live in refugee camps: 41.9% distributed between the West Bank and Gaza strip, and 16.7% living in rural areas (2.7% in Gaza Strip compared to 25.6% in the West Bank (PCBS | Statistics, 2019). Palestine refugees are defined as “persons whose normal place of residence was Palestine during the period 1 June 1946 to 15 May 1948, and who lost both home and means of livelihood as a result of the 1948 conflict and their subsequent families” (Palestine refugees | UNRWA, 2020).

The Palestinian identity is influenced by religion: 91% of Palestinians are Sunni Muslim, with Christians a significant minority at 6%, Druze 2% and Samaritans (Jewish) 1%.

A distinct group of Muslims are Bedouins (1-2%) who traditionally live in the desert but have become settled in urban communities. Bedouins remain very conservative with lower levels of education than other Palestinians (PCBS | Statistics, 2019).

According to the 2017-18 World Bank classification, the (oPt) are a lower-middle-income country (LMIC) with insufficient natural resources and high unemployment (World Bank group, 2018). In the UN Human Development Index, the (oPt) were 119 out of 189 countries and territories in 2018 (UNDP, 2019). The estimated population of the oPt in 2019 was 4.98 million, with 2.99 million in the West Bank and 1.99 million in the Gaza Strip (PCBS | Statistics, 2019), men account for 50.8% of the population (PCBS | Statistics, 2019).

More than 2.2 million registered refugees reside in the occupied Palestinian territories, with more than 3.2 million outside. There are 1.4 million refugees living in the Gaza Strip, comprising almost 70% of Gaza’s population. One-quarter of the refugees live in 19 camps in the West Bank, and over half a million refugees in the Gaza Strip live in eight camps located there (Palestine refugees | UNRWA, 2020).

The overall Palestinian population is predominantly young, nearly 40% of Palestinians are aged 0–14 years, while only 5% are over 65. The median age is 20 years, and average life expectancy for total population 75.4 years (male 73.4 and female 77.6) (2018 est.). An average family unit of 6 (5 in West Bank and 7 in Gaza) (PCBS | Statistics, 2019). In 2016, life expectancy at birth in Israel (including the Israeli settler population in the West Bank) was 82.5 years (Israel Central Bureau of Statistics, 2016) almost seven years more than for Palestinians living in the same territory.

The Palestinian community is highly literate (in 2015 male literacy was 97.4% and female 91.7%) and high enrolment rates in schools, which is mandatory to year 10 (PCBS | Education, 2016).

1.4.1 Breast cancer and women in Middle East Culture

I start by presenting attitudes to breast cancer in the Middle East and how religion, culture and the interrelationships between them influence PA among women including how the geopolitical situation impacts on the lives of Palestinian women.

As I will refer to the terms "Arab " and "Middle East" repeatedly in this study, I would like to provide definitions for my usage. The Middle East comprises the lands around the southern and eastern shores of the Mediterranean Sea (Middle East | Countries & Facts, 2020). Most Middle Eastern countries (14 out of 18) are part of the Arab world, while non-Arab Middle Eastern countries such as Turkey, Cyprus, Israel and Iran, are subject to similar important migration dynamics. The five top languages spoken are Arabic, Persian, Turkish, Kurdish and Hebrew with an additional 20 minority languages. The term “Arab” refers to “a member of the people who are originally from the Arabian Peninsula and who now live mostly in the Middle East and northern Africa” (Arab world, 2020). Arab can also be defined as a member of any Arabic-speaking people (World Arabic Language Day 2016, 2016). This is a diverse world with people from different religious and cultural backgrounds in 22 countries spread from the Atlantic Ocean to the Persian-Arabian Gulf and an estimated population of 422 million (Arab world, 2020).

Arab states or territories in the Middle East include Syria, Lebanon, the occupied Palestinian territories, Jordan and Iraq which is often named the Levant. The states of the Arabian Peninsula are Saudi Arabia, Kuwait, Yemen, Oman, Bahrain, Qatar and the United Arab Emirates, as well as Egypt and Sudan and other countries in north Africa (Middle East | Countries & Facts, 2020).

Publications about "breast cancer" retrieved using the ISI Web of Science database shows that the Middle East produces only 0.8% of the global research output in “breast cancer” (Sweileh et al., 2015). Research from Arab countries is less than that from Israel and Turkey but higher than that from Iran due to the sensitivity to cancer as a topic in Arab society (Sweileh et al., 2015). The scarcity of rigorously conducted empirical research in the Arab world and consequent paucity of reliable and valid information on its social and cultural fabric have let traditions of misconceptions guide the discourse for Arab peoples (Amer & Awad, 2016).

A recent review (2020) of survival rates of patients with breast cancer in countries in the Eastern Mediterranean Region (EMR) indicates the survival rate for women of all ages with breast cancer was better in the most recent decade. The 5-year survival rate in women in the EMR increased from 63% in 1990–1999 to 72% in 2010–2018 (Maajani et al., 2020). This progress may be due to screening programmes and cancer prevention and control strategies in the countries of the region. However, survival of women with breast cancer in the Arab populations was lower than in the non-Arab populations (Maajani et al., 2020). There is, however, much variation across the EMR, with worse outcomes seen in lower to middle-income countries. For example, five-year breast cancer survival in Jordan, with an annual health expenditure of $224 per capita, is 43.1% in contrast to 78.4% in Saudi Arabia which expends $1147 or 85.3% in Qatar (Allemani et al., 2015).

Studies exploring the impact of breast cancer on Middle Eastern women’s health-related quality of life (HRQOL) include two recent reviews (2016, 2019) of HRQOL of women with breast cancer in the Arab region which identified two common measurement scales, the European Organization for Research and Treatment in Cancer Quality of Life Questionnaire (EORTC QLQ-C30) and the EORTC breast cancer specific quality of life questionnaire (EORTC QLQ-BR23).

These are helpful to understand, measure and compare reported experiences and HRQOL of women with breast cancer (Haddou Rahou et al., 2016; Hashemi et al., 2019).

Haddou Rahou et al. (2016) found much heterogeneity in the limited data originating from Arab countries, with a mean global HRQOL score ranging from 45.3 in Kuwait to 74.6 in Bahrain, where 100 represents best well-being. The narrative analysis concluded Arab women have poor emotional well-being but higher levels of social well-being, which they suggest is due to the strong family links and support available. Hashemi et al. (2019) more recently explored experiences in the Eastern Mediterranean region and found a similar broad range of global HRQOL scores, ranging from 31.1 in Saudi Arabia to 75.6 in Qatar. However, their meta-analysis has limited utility for the Arab context because 19 out of the identified 36 articles originated from Iran or Pakistan, neither being Arab countries (Hashemi et al., 2019).

A 2019 review provides a rich description of the reported quality of life and experience of women with breast cancer in Arab countries. It included 19 studies, representing 401 women from 11 Arab countries, including Palestine. They conclude that the experience of Arab women with breast cancer is strongly influenced by their family, social, religious and health care contexts, and that many of these experiences are negative and distressing (Fearon et al., 2019). This review explored how womens experience changes over time, for example, in the past many Arab women viewed breast cancer as a death sentence (Doumit et al., 2010) compared to a newer concept of breast cancer as a curable illness or chronic condition (Hammoudeh et al., 2016). However, misconceptions in Arab societies affect early detection of breast cancer, screening and examination including; women’s perception of breast cancer as an incurable disease associated with suffering and death, and their accepting breast cancer as a test from God and or perception of cancer as punishment and death (Taha et al., 2012; Goldblatt et al., 2012). Women in the Middle East prioritise the needs of children and family above their own health and encouragement from the husband and other family members may motivate them to seek early detection (Goldblatt et al., 2012; Taha et al., 2013). Investigations focusing on why Palestinian women do not seek breast cancer screening found that personal, cultural and environmental barriers prevented them from utilising screening services (Azaiza et al., 2010; AlWaheidi, 2019).

Fear, embarrassment and fatalism about breast cancer are major cultural barriers in the West Bank and Gaza, which influence women's decision to seek diagnosis. For example, in a survey the majority of women interviewed said that they had noticed a change in their breast structure, but only 46% of them visited a doctor within a month of these experiences (Shaheen et al., 2011). Another study by Azaiza and Cohen in 2010 recognised that religiosity and cultural beliefs predicted attendance for mammography and clinical breast examinations by Arab women in Israel and the Palestinian Authority. Christian Arab women had higher adherence to screening guidelines than either Muslim or Druze women (Azaiza et al., 2010; Saca-Hazboun & Glennon, 2011). One hundred women from Gaza were interviewed after diagnosis of breast cancer and only 25% reported self-examination, 87% had never had a mammogram or been offered a breast examination. However, 80% agreed to seek a breast check-up when needed (Shaheen, 2017).

Middle Eastern and specifically Arabic culture and traditions are more permissive of men being outside of the home for longer periods of time than women, who are expected to perform household tasks including childcare, cooking and housekeeping (Kahan, 2011). Male relatives in many Arab and Islamic countries see themselves as the protectors of female relatives (Hammoud et al., 2005). This patriarchal gender system is in evidence in rural areas across a wide swath of Asia and North Africa and stretches from North Africa across the Muslim Middle East (including non-Arab Turkey and Iran) to South and East Asia (Pakistan, Afghanistan, northern India, and rural China) (Moghadam, 2004). This system, regardless of religion, is characterised by kin-based patriarchal extended families, male domination, early marriage, son preference, restrictive codes of behaviour for women, and an association between family honour and female virtue (Moghadam, 2004). A woman's risk of breast cancer nearly doubles if she has a first-degree relative (mother, sister, and daughter) who has been diagnosed with breast cancer (Aloraifi et al., 2015). Thus, if several family members have early-onset breast cancer there a likelihood of inherited predisposition to the disease (Aloraifi et al., 2015) which causes dishonour and social stigmatisation in some Arabic societies including Palestine (Taha et al., 2012; 2013).

The Middle East and North Africa (MENA) breast cancer regional guidelines committee reviewed the 2009 clinical practice guidelines in oncology from the National Comprehensive Cancer

Network (NCCN) for breast cancer and suggested modifications suitable for the Arab region (Abulkhair et al., 2010). They recommend a history and physical examination should be performed every 3 months for 2 years' post-treatment, every 4 to 6 months for 3 years, and then annually. However, there are no Palestinian health care guidelines for care during cancer survivorship.

The next section will consider how Islam is a major influence on health for Muslim populations.

1.4.2 Islam, health and women

Islam is one of the three monotheistic religions of the world and the largest religion in the Middle East, while Judaism and Christianity are also represented (Amer & Awad, 2016).

The role religion plays in daily life is complex. Support from religion has a huge impact on the patient's way of coping with disease (Donnelly et al., 2013). Religious beliefs, especially Islam, influence decision-making, family dynamics, health practices and the use of health care, especially in Arabic society influencing how people perceive sickness (Saleh Al Mutair et al., 2014).

According to the Pew Research projections, by 2050 there will be nearly 2.8 billion Muslims, or 30% of the world population (Projected Changes in the Global Muslim Population, 2015). They are concentrated in approximately 45 Muslim-majority countries in a broad belt from Senegal to the Philippines. The largest number is on the South Asian subcontinent, and the most populous single Muslim-majority nation is Indonesia. Most Muslims are Sunni Muslims with 15% Shia Muslims. Iran and Iraq have a majority of Shia Muslims who pray three times a day whilst Sunni Muslims pray five times a day. Muslims around the world vary from the very liberal to the fundamentalist.

Islam is represented in green (Figure 1-5).

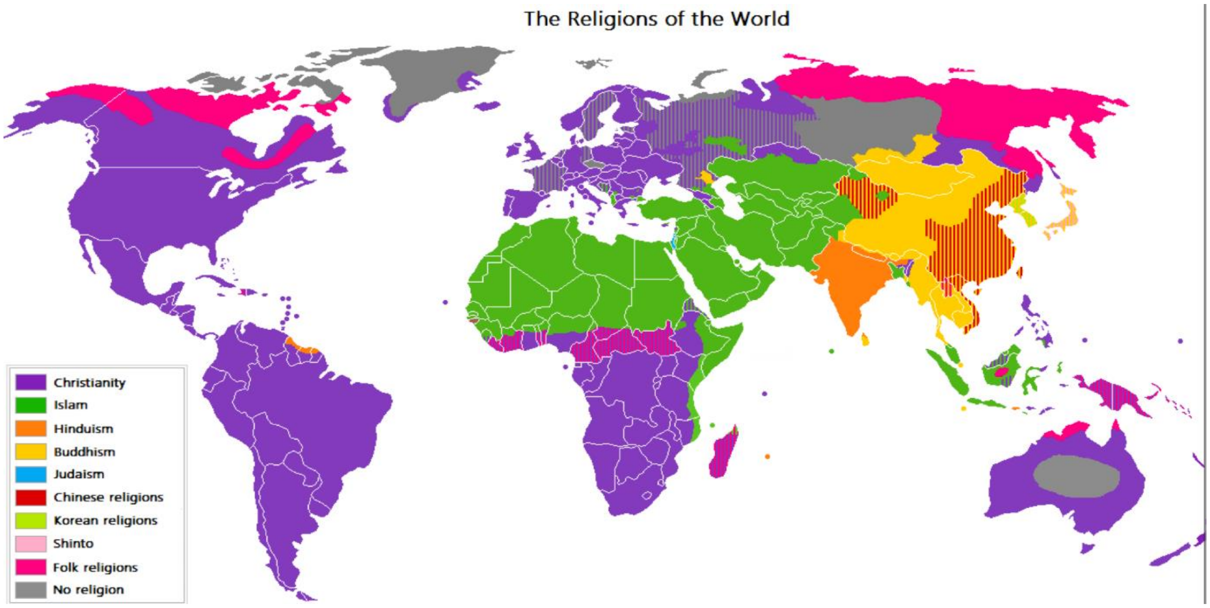


Figure 1.5: The religions of the World

Muslims worship one God (Allah) and follow the Quran and the Sunnah of the prophet Muhammed – peace upon him – have told them. Islam influences Arabic culture (Ar-Rahman Al-Bazzaz ,1954) and is one of the most influential factors in Muslim societies (Orakzai, 2014). Arab culture can be mixed with Islamic culture however, Islamic culture is more localized regarding the rules that Muslims must follow. Not all Arabs are considered Muslims, and not all Muslims are Arabs (Salzman, 2007). (Salzman, 2007). Islam promotes health, Prophet Mohammed stated that, “Taking proper care of one’s health is the right of the body” (Sunnah.com, n.d; Volume 7, Book 71, Number 58, n.d.). However, Muslims believe that a person is rewarded for his/her tolerance of pain and diseases. The Prophet Mohammed said: “Whenever a Muslim is afflicted with a hardship, sickness, sadness, worry, harm, or depression, even a thorn’s prick, God (Allah) expiates his sins because of it” (Sunnah.com, n.d; Volume 7, Book 70, Number 544, n.d.).

Many Muslims believe that one cannot be depressed if following the Islamic tenets thus, illness is viewed as an opportunity to enhance an individual’s spiritual connection and, consequently a Muslim will respond to illness with stoicism, become more engaged in prayer and reading the Qur’an, in remembrance of God, and asking for forgiveness (Wehbe-Alamah, 2008).

Muslims believe that God (Allah in Arabic) is the ultimate healer of physical and psychological illness and that the illness and cure are at God's will, thus illness cannot be avoided or stopped. This helps patients cope with illness and die in peace, looking forward to the reward in the hereafter (Seir & Kharroubi, 2017). It may help patients to find "inner strengths" and "think positive", thus empowering them to deal with suffering resulting from terminal illness (Bushnaq, 2008). Cancer is viewed as a test from God of strength of faith and a reminder of the bounties of God, such as the bounty of health, whilst not conflicting with the necessity of relieving suffering (Bushnaq, 2008). Studies show that even individuals who define themselves as non-religious or moderately religious uphold religious rituals and adhere to traditional beliefs, including those regarding the causes of illness or the role of fate in one's life (Azaiza & Cohen, 2007). For example, in a qualitative study of 51 Arab women at Israel most believed cancer to be a test of patience from God, and some believed cancer to be a punishment from God for improper behaviour (Azaiza & Cohen, 2007). These health beliefs reflect the majority of Muslim women, attached to their religion, which declares modesty a core value of Islam. This means Muslim woman should cover their entire body, including their hair (wear the headscarf), and not expose their body to the view of men, other than very close relatives, except their face and hands. Muslim women's clothes should neither be transparent nor shape-revealing (Omran and Al-Hassan, 2006; Marrone, 2008). Ali et al. (2008), explored a relatively novel aspect of cultural diversity: feminism and religion in the lives of religiously diverse women. Muslim participants emphasized that Islam has an enormous influence on their culture and that "culture tends to skew religion's view of women and women's role" (p. 43). Islam gives women and men the same equal rights, but culture is "getting in the way of religion" (Ali et al., 2008). Arab culture seems to have an enormous influence on women's rights and power as Arab cultural practices have impeded the practices of Muslim women rights (Ali et al., 2008). Arab culture encompasses a broad spectrum of culture and there are many countries sharing that culture however each is distinct culture, therefore, when referring to Arab culture, one needs to specify that particular culture. For example, according to Rubenberg, C. (2001), in Palestinian culture it has been argued that the restrictions imposed by the patriarchal family have become a tool that controls Palestinian women lifestyle, especially outdoor activities, including attitudes to PA.

1.4.3 Health care professionals, cancer and the Middle East

The diversity of religion in the world's population brings challenges for health care systems and providers to deliver culturally sensitive care. Without understanding of, and respect for these cultural norms, HCP providers might unintentionally alienate Muslim patients (Hammoud et al., 2005; Odeh Yosef, 2008). Therefore, care of Muslim patients, especially women, must include an understanding of the impact of Islamic faith on the provision of healthcare and HCPs should follow guidelines whenever possible including avoiding eye and physical contact between them and a patient of opposite gender (Hammoud et al., 2005).

Gender / cultural and religious needs.

The gender of the HCP impacts on care in issues such as veiling and gender-segregation, legitimated by the Qur'an and other sacred writings (Moghadam, 2004). Thus, the custom is to have separate wards for males and females when it would be considered totally unacceptable to have patients of different genders in the same room (al-Shahri, 2002). Islam does allow for cross-gender provider-patient situations under life-threatening conditions or when alternatives are not available. However, care must be taken to minimise the exposure and invasion of the patient's body. When it is not possible for examination or treatment by a female HCPs strictly observant Muslim women may refuse treatment, regardless of urgency (Hammoud et al., 2005). Muslims prefer care from same gender (Halligan, 2006) and a male clinician should never attempt to interview or examine a female patient without one of her adult relatives or a female nurse being present (Halligan, 2006).

Health and illness behaviours

Culture influences individuals seeking cancer diagnosis and treatment or not. Middle Easterners generally respect Western medicine but culturally have a rich tradition in using herbal remedies and diverse spiritual techniques for treating disorders (Yesilada, 2011). In cancer care, Middle Eastern oncology HCPs support the integration of complementary and traditional medicine (CTM) within cancer care, while recognising the need for education and training (Ben-Arye et al., 2016).

An online survey of 339 oncology HCPs (80.3% response rate) showed 178 from 15 Middle Eastern countries, were in favour of the integration of CTM within supportive cancer care, though ideas on how this should be implemented varied.

Little is known about the barriers and facilitators influencing PA programme implementation in the Palestinian territories and more exploration is needed. However, there is a need to identify barriers and facilitators for HCPs implementing PA programmes for cancer patients. Thus, it is appropriate to pose the question: “What hinders or facilitates the promotion of PA among HCPs working in the Palestinian territories?”

1.4.4 Physical activity among Arab/Muslim women

One can argue that the legal judgment of Islam on sports practices depends on several variables, such as the type of sporting activity, its purpose, its individual and societal benefits, the socio-cultural context in which the sport takes place (Amara, 2012).

As a general rule, most scholars agree that Islam permits Muslims of both genders to practice sports and games as long as such sports are balanced and beneficial for the person’s physical fitness and respectful of the principles of Islamic Shari’a (or the “Islamic path”). Some of the general principles include, for instance, modesty in clothing, separation between sexes, favouring unity and cooperation (Amara, 2012). Thus, Muslim women need to observe modesty in their dress and ensure their bodies are not inappropriately exposed while exercising (Kahan, 2011) and adhere to gender segregation during exercise. Therefore, combining religious requirements and exercise, especially in outdoor activities, has been reported as making it difficult for women to be physically active in strict Islamic cultures (Caperchione et al., 2009). Although spaces such as women-only gyms are available in Muslim, Arabic countries, they are mostly in cities and not accessible or affordable to everyone, making it harder for women to undertake regular physical activities.

There is a scarcity of research about Arabic / Muslim women and physical activity. A study by Kahan (2015) showed that the prevalence of physical inactivity in Muslim countries is higher than in non-Muslim countries based on data from 38 Muslim countries using the Global Physical Activity Questionnaire (GPAQ) and International Physical Activity Questionnaire (IPAQ). The world-wide prevalence of physical inactivity is 28.8% and 35.5% in males and females. Prevalence among non-Arabs and Arabs was 28.6% and 43.7%, respectively with females were more likely to be physically inactive than males, and this was more pronounced in Arabs (difference = 11.6%) compared to non-Arabs (difference = 5.3%) (Kahan, 2015).

An overview of the literature related to the barriers and facilitators to PA for Arabic adults shows barriers occur at the individual level (e.g., lack of time, health status), social/cultural/policy level (e.g., traditional roles for women, lack of social support, use of housemaids), and the environmental level (e.g., hot weather, lack of exercise facilities) (Benjamin and Donnelly, 2013). While, some of the facilitators related to Islamic religion, others related to a desire to have slimmer bodies, and having good social support systems (Benjamin and Donnelly, 2013). Other factors, different in region to region in Arabic countries, involved changes in traditional lifestyles and occupations to more sedentary ones and lack of active transport to exercise venues (Benjamin and Donnelly, 2013).

In a qualitative study conducted in Malaysia in 2010 15 young Arabic/ Muslim women from five different Arab countries were interviewed to examine the perspective of Arabic/ Muslim women towards involvement in sports and physical activity. They showed the processes of cultural maintenance strongly influenced the women, regarding sport as not respectable femininity in Arabic culture (AbdulRazak et al., 2010). These findings are reflected in the rates of physical inactivity in different Muslim countries. For example, in the United Arab Emirates (UAE), Tunisia, Pakistan, physical inactivity was found in 39.5%, 11.5% and 13.5% of men respectively, compared to 12.8% for Palestinian men. Amongst women physical inactivity rates were 59%, 18.9% and 27.6% respectively, compared to 26.0% of Palestinian women (Abdul-Rahim et al., 2003). A later study in the oPt showed insufficient PA in 33.8 % of men compared to 59.2% of women (Abdul-Rahim et al., 2014).

There is limited information available regarding PA participation in women after breast cancer in the ME and no previous research regarding PA participation in these women in Arabs or the

Middle Eastern Region. Thus, this study explores factors affecting Palestinian women's PA participation after breast cancer.

In the next section, I will explain the health systems where Palestinian women live, the current status of cancer and their access to health care.

1.4.5 Health systems in the occupied Palestinian territory(oPt)

Since the 1993 Peace Agreement between the Palestine Liberation Organisation (PLO) and the Government of Israel, the Palestinian National Authority (PNA) is officially responsible in some areas of the West Bank and Gaza Strip and others are still under Israeli control (1995 Oslo Interim Agreement - Israeli-Palestinian - ProCon.org, 2008).

The distribution of these areas (A, B and C) affects access to Palestinian health care centres and has been a major concern since the 1994 Oslo agreement. The second Intifada in September 2000 and Palestinian elections resulting in Hamas governing Gaza, has created two administratively separated geographic zones, the Gaza Strip (GS) and the West Bank (WB), which has increased this complexity. Subsequently, the Palestinian National Authority has had unprecedented financial shortfalls following the Hamas victory in the January 2006 Palestinian legislative elections and Israel has refused to return Palestinian tax revenues, which account for around 50% of the PNA budget (Bates et al., 2017).

The health care system in the occupied Palestinian territory is composed of five major health care providers:

1. **The Ministry of Health (MoH)** is the main health care provider, covers 64% of all Palestinian health care facilities and the majority of hospital beds, providing primary, secondary, and tertiary care and purchasing secondary and tertiary health care services from other providers, domestic and abroad.

2. **The United Nations Relief and Works Agency (UNRWA)** provides primary health care and some secondary services to refugee populations and purchases secondary and tertiary care services when needed.

3. **Non-Governmental Organisations (NGOs)** that includes missionary hospitals, facilities supported by international organisations and community health centres.

4. **The private sector** also provides the three levels of care through a wide range of practices although reliable data on services delivered and other vital statistics is lacking.

5. **Contracted out services** include hospitals located in the West Bank and East Jerusalem or outside the Palestinian territories in Jordan, Egypt and Israel. In 2011, roughly 115 000 Palestinians were treated in Israeli hospitals (Feldman, 2013).

1.4.6 Cancer care in the occupied Palestinian territory(oPt)

According to the Palestinian Ministry of Health in 2016, cancer in the West Bank and Gaza is the second most common cause of mortality at 14%, exceeded only by heart disease at 30%. Breast cancer was the third largest cause of cancer mortality (12%), lung cancer (20%) and colon cancer (13%). Breast cancer is increasingly recognised as a public health concern (Minister of Health of the Palestinian National Authority. Registry Pc, 2016). Among Palestinian women breast cancer makes up 30.6% of women's cancer with an incidence of 78.9 per 100,000 women in 2014 and 83.9 per 100,000 in 2016 (Minister of Health of the Palestinian National Authority. Registry Pc, 2016). It was the third most common cause of cancer death in 2016 (Halahleh & Gale, 2018). Estimates vary, but 5-year survival after breast cancer is considerably worse than countries with better health care systems, especially in the Gaza Strip (AlWaheidi, 2019).

Cancer incidence rates reflect not only the cancer risk in a population, but also the prevalence of cancer screening and detection practices (Torre et al., 2017). Approximately half of the diagnoses are at stage three or four indicating that better awareness and earlier diagnosis is necessary (Khleif & Imam, 2013; Al-Ramahi et al., 2019).

The Cancer Registry, established in the Palestinian territories in 1998, is on two sites one in the West Bank and one in the Gaza Strip. These are separated by a 80 kilometres and due to the political context and restrictions on movement make it difficult to have an overall reporting system (Abu-Rmeileh et al., 2016).

Palestinians face a cancer crisis due to poor medical facilities, shortage of medicines and primitive approaches very different from those currently elsewhere including advanced multimodality diagnostics and therapeutics (Kharroubi and Abu Seir, 2016). Lack of access to prevention and cancer control strategies cause high cancer mortality rates in the region (Halahleh and Gale, 2018). This is compounded by the small number of oncologists working in the government sector and their high caseload (70-80 cases per day) which limits the progress of cancer care (Halahleh and Gale, 2018).

Radiation therapy is only available at Augusta Victoria Hospital (AVH), a non-profit, non-governmental organisation (NGO) in East Jerusalem city. There are only two linear accelerators devices there, and keeping these devices functioning optimally has proved challenging. Upgrading radiation oncology facilities is complex, in part because of financial constraints and concerns over possible theft by terrorists of radioactive materials, such as sources of cesium-137 or cobalt-60 (Portaluri et al., 2017).

Access to health services in the West Bank is restricted by the Israeli separation wall and checkpoints. Palestinian patients, health workers and ambulances are hindered from accessing referral hospitals in East Jerusalem, since entrance to the city is only possible for holders of Israeli-issued permits. Obtaining a permit is complicated and can result in delays or denial of care. Gaza patients in need of specialised health care may also be denied care due to the closure of the Rafah border crossing with Egypt or the complicated process of passing through the border) (Public health in Palestine, 2019).

Lastly, universities are not well integrated into the health care system in Palestine, and there are few efforts to address the insufficiency of human resources in the oncology field (Kharroubi & Abu Seir, 2016). This results in a shortage of specialist physicians and a lack of experience of other health care providers (nurses, physiotherapy and others) in all fields related to cancer care (Kharroubi & Abu Seir, 2016).

1.4.7 Post-treatment care for breast cancer in the occupied Palestinian territory(oPt)

Post-treatment care, including physiotherapy and psychological support, is not covered by governmental health insurance and not provided systematically for breast cancer patients. Survivors of breast cancer, especially those undergoing surgical treatment, suffer physical and psychological problems from complications associated with the removal of one or more breast, including oedema caused by the removal of the lymphatic nodes and drainage system, loss of hair due to chemotherapy and being isolated from their spouse or other family members (Public health in Palestine, 2019).

Fifteen institutions (seven governmental, seven NGOs and one private) report providing physiotherapy services for cancer patients offering a limited number of sessions or limited to during one month (see Table 1.5).

Table 1.5: Availability of physiotherapy treatment across sectors in Occupied Palestinian territory

Sector	West Bank	Gaza
Governmental	**2**	**5**
NGO	**2**	**5**
UNRWA	**1**	**3**
Private	**Unknown**	**Unknown**

In governmental hospitals, the MoH pays for physiotherapy for some cases, but the annual number of cancer cases receiving such services is only four cases per year. Most patients are served by NGOs (from 14 to 50 women annually) and the private sector (300 women annually), where women and their families themselves cover the cost of such services.

1.4.8 The geopolitical situation in the occupied Palestinian territory (oPt) - A brief history

This section highlights issues facing women within Palestinian society in the context of the geopolitical situation. The Israeli occupation impedes people's movement and limits the opportunities and capacity to transform the legal and social structures within the society (See Appendix 1-A for more detail).

Freedom of movement and access within the West Bank is severely limited due to Israel's strict permit regime. There are 96 permanent checkpoints in the West Bank, 57 located deep inside the occupied Palestinian territories, while 39 serve as a last inspection point on the border with Israel. An additional number of concrete blocks, flying checkpoints and road closures obstruct free movement within and outside the territories on a daily basis (UNRWA, 2020).

West Bank residents need to apply in advance for a permit to travel into Israel (including east Jerusalem) for medical treatment. To obtain a permit, patients need to provide a referral from the Ministry of Health evidencing their illness, an appointment confirmation from the hospital and evidence that this specific hospital is the only facility where the required treatment is available. Family members may not be allowed to accompany patients or visit hospitals due to a lack of permit or may be delayed at checkpoints for a variety of reasons (Public health in Palestine, 2019). All health services in Gaza have been affected by various Israeli incursions but it is possible for some patients with cancer to access the hospital services at Augusta Victoria Hospital in East Jerusalem. Community medical clinics are available in some parts of the oPt and some mobile clinics reach remote villages in the West Bank mostly provided by local and foreign Non-Governmental Organisations [NGOs] (Tucktuck et al., 2017).

These issues impact on women diagnosed with cancer and place restrictions on health care.

In August 2013, it was reported that, in the first half of 2013, 30% of all medical permit requests were either denied or received no response from the Israeli authorities. For breast cancer patients, this can mean being unable to attend the full cycle of appointments for radiotherapy and aftercare and undermine the effectiveness of the treatment. Some 11,000 scheduled medical appointments were missed as a result. It was reported that 54 Palestinians, 46 with cancer, died during the year following the denial or delay of their permits (The Israeli Information Center for Human Rights in the Occupied Territories, 2013).

For Palestinian women, the First and Second Intifadas became a two-track insurgency: standing up against the Israeli occupation, while also seeking to liberate women from the barriers imposed by their own society (Speri, 2018).

Palestinian women already suffer gender inequality due to the persistency of patriarchal rule in the majority of society. They are described as silently enduring domestic violence, abuse and oppression and have no legal tools to escape their condition of persistent, underlying discrimination. A study by UN-Women shows that owing to movement and access restrictions in Area C, checkpoints and the wall, women in isolated areas do not have access to social and health services, which limits opportunities for women to report to health posts for medical check-ups and documentation of injuries related to gender-based violence. Area C represents 60% of the West Bank and is controlled by Israel in all civil matters and security. Within Area C, Palestinians have limited access to water, electricity, education and other state services (UNRWA, 2020).

Thus, investigating this complicated and conflicting cultural, religious, environmental, social, political and economic factors influencing Palestinians' women PA participation after breast cancer may provide useful insights into improving their healthcare and outcomes. This I investigated by conducting an exploratory qualitative study exploring barriers and facilitators to PA participation in Palestinian women after breast cancer treatment and factors affecting PA promotion by HCPs to these cancer patients.

Next section will be a summary of this chapter and then the significance of the study and finally the thesis flow.

1.5 Summary of the chapter

This chapter has described breast cancer diagnosis, treatment, and surveillance options. It described PA guidelines and factors affecting cancer patients’ participation. It has also described the cancer healthcare system in oPt and its challenges. With a lack of specific literature on the Palestinian perspective, this presents a global view from Arabic and Islamic countries with cultural commonalities with Palestinian women. Thus, it presents Middle Eastern cultural perspectives of breast cancer, how HCPs interact with Arab/Muslim women and a critical analysis breast cancer meaning and experiences. Finally, it has explored the position and role of women in the Middle East highlighting factors which may affect PA participation.

1.6 Significance of the Study

The need to understand the barriers and facilitators influencing the decisions or choices by women with breast cancer about PA participation has been articulated in previous research. However, **research that addresses specific factors that influence PA participation among Arab/ Muslim women after breast cancer has not been explored.**

In this thesis I explore these factors focusing on the views Palestinian women and HCPs who work with them in the (oPt). This is a novel exploratory study identifying factors influencing PA participation and comparing and contrasting them which may facilitate interventions to appropriately tailor PA programmes.

1.7 Thesis flow

This thesis is organised as following:

- Chapter 1 provides the background for the research, puts it into context, identifies gaps in the existing evidence and literature and states the plan of the thesis.
- Chapter 2 presents an overview of the research methods and the theoretical framework adopted.
- Chapter 3 presents and discusses the results of (Phase One) of this research; the systematic review study. The last section of the chapter deals with the implication for the research.
- Chapter 4 presents and discusses the methodology of (Phase Two) of this research, describing the data collected according to the categories derived,
- Chapter 5 presents the findings of the (also deals with (Phase Two), the exploratory study.
- Chapter 6 presents the discussion of the research.
- Chapter 7 concludes the research, highlighting the strengths and limitations of the studies and suggesting further research. It also presents implications of the study for HCPs to promote PA participation among Arab/Muslim women. Finally, it includes trustworthiness and a reflection on the overall involvement of the researcher.

Chapter 2: Methods

2.1 Introduction

This chapter introduces the aims of this research and explains and justifies the methods used. It begins by describing the research philosophy and approach. It has also described and justified the design adopted and the proposed research methods. Then acknowledges the ethical issues encountered and the challenges posed by the methods. This chapter does not explain how each study was conducted -these will be described in their respective chapters (chapters 3 and 4).

2.2 Research aims and objectives

Research often begins with an interest in a subject or area and the development of one or more research question that initiates and drives inquiry of the chosen area. I wanted to explore the factors affecting physical activity (PA) participation among women after breast cancer treatment worldwide and in my own culture. I perceived that exploring these from several perspectives would provide valuable information about the current situation for women after breast cancer. I also wanted to explore with health care professionals (HCPs) their ideas about promoting PA to their cancer patients and provide insights into the differences between the two perspectives.

Specific objectives

- To explore the factors influencing PA participation among women after breast cancer and what affects HCPs' promotion of PA to their cancer patients from a worldwide perspective.
- To explore Palestinian women's views on the barriers and facilitators to being physically active and experiences of PA participation after breast cancer.
- To explore the views of Palestinian HCPs who work with cancer patients regarding barriers and facilitators to promoting PA and what might influence women after breast cancer to participate in physical activity.

Research questions

Defining the research questions is a particularly significant step as it narrows the research aims and objectives to specific areas that will be addressed (Doody &Bailey, 2016; Creswell, 2013). A well-formulated research question needs extreme specificity and precision, which guides the implementation of the project, including identifying the variables and population of interest (Aslam &Emmanuel, 2010).

The research questions in this PhD were:

1) What factors affect PA participation in women after breast cancer worldwide?
2) What factors influence HCPs' promotion of PA to their cancer patients worldwide?
3) What are the barriers and facilitators for Palestinian women after breast cancer to PA?
4) What affects HCPs working in oncology in the Palestinian territories promoting PA to their cancer patients, in particular, women after breast cancer?

2.3 Research philosophy and approach

In health and social sciences, there are many choices, different research approaches, study designs and many ways to conduct research (Green & Thorogood, 2018). Therefore, I had to make decisions in choosing an appropriate research approach to answer the research questions. While it is essential when researching to be aware of the philosophical commitments, we make through our choice of research strategy, it also has a significant impact not only on what we do but what we understand we are investigating (Johnson & Christensen, 2017). Thus, it is clear that researchers should look at three types of research assumptions to distinguish research philosophies: ontology, epistemology and axiology (Creswell, 2013). However, when research is multi-purpose, it does not sit comfortably within specific epistemology or ontology and the researcher may be confronted with a question or a topic that belongs within a paradigm but does not correspond neatly with approaches that are well documented and delineated (Bradshaw et al., 2017).

Here, pragmatism offers an alternative that embraces both the positivist/post-positivist and constructivist paradigms along with research questions that determine the extent to which methods are used (Teddlie and Tashakkori, 2009). A pragmatist avoids argument about concepts of truth and reality; rather, they focus on the issues of interest and value and use different ways to bring out positive consequences (Chetty, 2016).

The pragmatic approach is multi-purpose in nature and therefore allows questions to be addressed which do not sit comfortably within a wholly quantitative or qualitative approach. Hence, the pragmatic approach is better for answering the “what”, “why” and “how” research questions (Creswell, 2013). I adopted a pragmatic approach to this research, as the theoretical argument and philosophy are exploring perceptions and experiences, and it allows areas to be studied that are of interest, embracing methods that are appropriate and positively using findings in harmony with a recognised value system (Teddlie & Tashakkori, 2009; Creswell, 2013). Hence, a mixture of ontology, epistemology and axiology is acceptable to approach and understand social phenomena by pragmatism (Wahyuni, 2012). Consistent with pragmatism, the emphasis is placed on obtaining an in-depth understanding of the factors influencing attitudes of women after breast cancer towards physical activity. This philosophy was appropriate as it afforded me, as a researcher, the freedom to choose the most relevant research method/s to answer the research questions, which are situated between medical and social domains (Kaushik & Walsh, 2019).

The philosophical approach to a study determines the logical reasoning of the researcher. Deductive and inductive reasoning are the two major kinds of reasoning in research (Johnson & Christensen, 2017). I chose an inductive reasoning approach as it enabled me to discover issues or effects which I may not have been aware of before. Inductive research uses qualitative methods which allow concepts or themes to be derived from the data (Morse, 2016).

Qualitative research plays a central role in understanding phenomena, rather than measuring phenomena (Green & Thorogood, 2018). When a problem is broad and not specifically defined, researchers use exploratory research as a beginning step. Exploratory research is characterized by its flexibility. Exploratory studies are a valuable means of understanding what is happening, to seek new insights, to ask questions and to assess phenomenon in a new light (Yin, 2009). Exploratory qualitative research has the goal of formulating problems more precisely, clarifying concepts, gathering explanations, gaining insight, eliminating impractical ideas and forming hypotheses. It explores and explains the perceptions of a small number of participants, rather than attempting to produce generalisable and universally applicable conclusions (Malterud et al., 2016; Cornish & Gillespie, 2009). Also, qualitative research may explain human behaviour within the framework of the social structures in which that behaviour takes place (Flick et al., 2004). I wanted to explore and highlight discrepancies and similarities in the perspectives of women after breast cancer to understand the factors affecting their PA uptake and participation and its promotion by HCPs and chose to take a qualitative approach.

2.4 Research strategy & design

Research strategy enables the researcher to answer the research questions or the elementary questions which shape the flow and structure of the study. Thus, once the researcher has selected the research approach, the next step is to decide on a specific design that best addresses the research problem (Moule et al., 2017).

Research designs are procedures for collecting, analysing, interpreting and reporting data in research studies. It is essential as it guides the method decisions that researchers must make during their studies in order to address research questions (Wahyuni, 2012).

An exploratory design is particularly suitable for exploring a phenomenon, in which there isn't a guiding framework or theory and measures or instruments are not available. Thus, I adopted an exploratory research design with two phases. My research strategy and design are based on understanding that because of the paucity of research on this particular topic, exploratory research needs to use different methods and a combination of primary and secondary data. Hence, phase one of this research is a systematic review analysing secondary data the outcomes of which influenced what to do in the second phase an exploratory qualitative study.

The purpose of these two-phases was to explore, understand and generate a holistic view about the factors affecting PA uptake and participation among women after breast cancer and to understand PA promotion by HCPs to their cancer patients worldwide then to use these findings from the literature to investigate a particular group, under-represented in the literature, women living in Middle Eastern countries. Thus, I took an example of one country and groups of women and HCPs living in the oPt and collected primary data in phase two of this research.

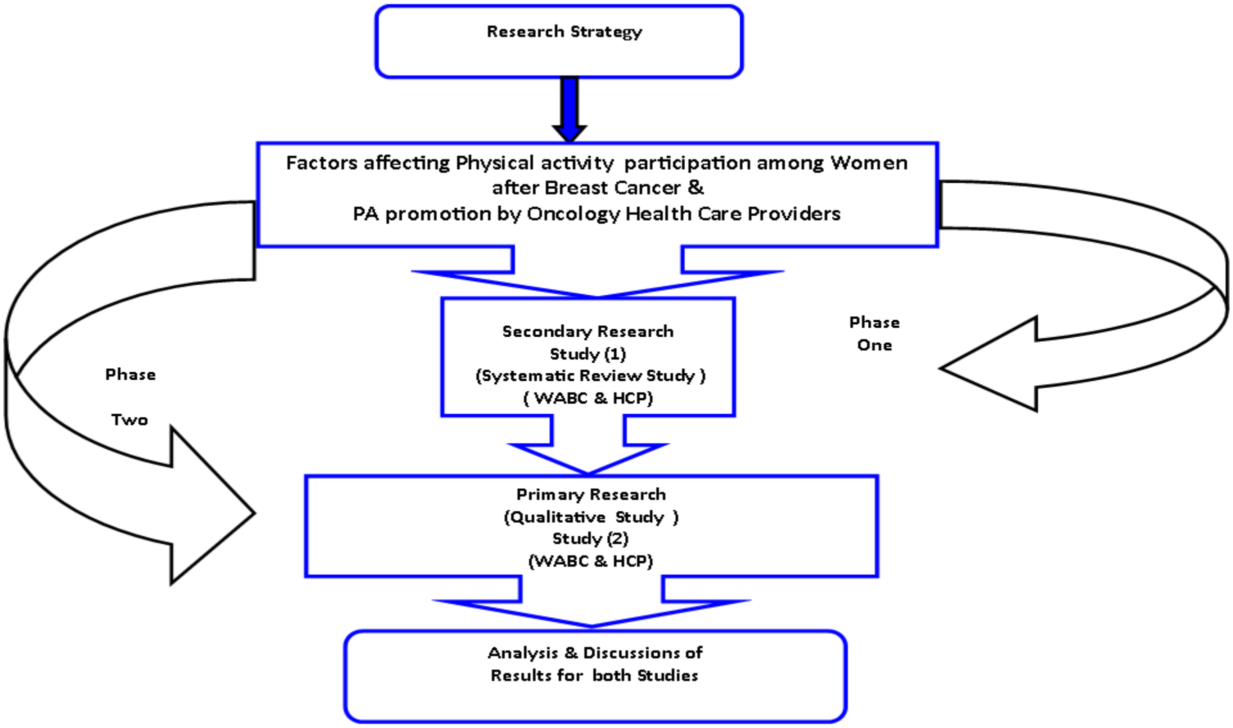


Figure 2.5: Research strategy

The reason for undertaking this design was to complement one set of results with another, to expand a set of results, or to discover something that would have been missed if only one approach had been used (Cameron, 2009).

As an important point, the concept of triangulation fits with pragmatism as it asserts that multi-methods can be combined in the same design. Triangulation is an epistemological claim concerning what more can be known about a phenomenon when the findings from data generated by two or more methods are brought together (Moran-Ellis et al., 2006).

Triangulation generally involves the concurrent, but separate, collection and analysis of data so that the researcher may best understand the research problem (Creswell & Plano Clark, 2011). Triangulation can improve the validity and accuracy of the findings and confirm results, or can add to the scope of the findings (Moule et al., 2017).

I chose to use triangulation because of the paucity of research on this topic and in particular in the oPt. I collected data in two phases, each phase from several perspectives and several sources then attempted to merge the two data sets, by bringing the separate results together in the interpretation integrating the two data types during the analysis (Creswell & Plano Clark, 2011). The process of collecting data for this research was first from the systematic review in phase one then, collecting data from the exploratory qualitative study in phase two using semi-structured interviews bringing these data together for interpretation of the findings in this two-phase study. I also collected data from more than one group, women after breast cancer and HCPs, including oncologists, surgeons, nurses and physiotherapists, who work in oncology departments in the oPt. Field notes collected following the interviews also contributed to the triangulation of the data and data interpretation.

2.4. 1 Rationale for systematic review study: phase one

Systematic reviews (SRs) are a type of secondary research, which refer to the analysis of data that have already been collected through primary research (Ganeshkumar & Gopalakrishnan, 2013). Aveyard and Sharp defined SRs as “original empirical research”, as they “review, evaluate and synthesise all the available primary data, which can be either quantitative or qualitative” (Aveyard & Sharp, 2011).

Given that most clinicians and public health professionals do not have the time to track down all the original articles, critically read them, and obtain the evidence they need for their questions, systematic reviews and clinical practice guidelines may be their best source of evidence (Ganeshkumar & Gopalakrishnan, 2013).

Further, systematic reviews are important for other reasons. New research should be designed or commissioned only if it does not unnecessarily duplicate existing research (Chalmers et al., 2014). Therefore, a systematic review should typically be undertaken before embarking on new primary research.

Thus, the rationale behind conducting a systematic review study in phase one of this research was that it can be beneficial by summarising large bodies of evidence on the factors affecting PA uptake among women after breast cancer and help to explore the differences and similarities among studies from diverse countries, ethnicities and cultures.

Moreover, by integrating HCPs' views and experiences on promoting PA to their cancer patients, within different health care systems and referral schemes regarding PA, this could guide HCPs in the future on how to promote PA among women after breast cancer.

The review question of the systematic review study was chosen to illuminate and address the gaps in knowledge and to underpin phase two of my research.

2.4.2. Rationale for qualitative exploratory study: phase two

Determining the research purpose using Greene et al.'s (1989) framework helps determine the appropriate research design and methods. Often qualitative research rejects simplistic realist epistemology and instead adopts interpretive, constructionist or critical methodological approaches (Green and Thorogood, 2018). Thus, the rationale for conducting an exploratory qualitative study in phase two of this research was to explore factors affecting PA participation and promotion among Palestinian women after breast cancer and HCPs to their Palestinian cancer patients respectively. The particular context of the oPt influences these investigations due to the different socioeconomic, geopolitical and cultural circumstances which often result in very different treatment and PA participation experiences, made exploratory qualitative research essential. Accordingly, I conducted face to face semi-structured interviews as the data collection method for the qualitative study.

2.5 Data analysis

Successful analysis and presentation of qualitative data require a systematic and ordered approach so that complex data, emerging from a variety of sources, can be collated and presented in a manageable form (Hewitt-Taylor, 2001). Data analysis was conducted by me, the principal researcher, and followed the process described below.

Firstly, the data from the systematic review study was analysed using thematic analysis (Braun & Clarke, 2006). A "Theme" is the main product of data analysis that yields practical results in a qualitative study (Green et al., 2007). It is considered a thread of underlying meaning implicitly discovered at the interpretive level and elements of subjective understandings of participants (Ryan & Bernard, 2003; Buetow, 2010). Also, the theme is used as an attribute, descriptor, element and concept (Green et al., 2007). Moreover, when exploring the themes which have been identified, certain aspects are seen as more valuable in connection with the research question and this leads to a patterned response within the data that has been collected. The choice of techniques to identify themes in qualitative data depends on the kind and amount of text, the experience of the researcher, and the goals of the research (Ryan & Bernard, 2003).

A thematic analysis encompasses the description of how well the theme fits into the entire data concerning the research question (Cho & Trent, 2006). Drawing maps and charts for the description of the theme helps understand the nature of the study phenomenon, create typologies and find associations between items as requirements to reach their analytical interpretation (Barnett-Page & Thomas, 2009). Furthermore, Braun and Clarke (2006) argue that thematic analysis is a useful method for examining the perspectives of different research participants, highlighting similarities and differences, and generating unanticipated insights.

This research encompasses different perspectives of women after breast cancer and HCPs' in one study. The focus of the data analysis has been to discover comprehensible patterns about the theoretical framework. Hence, the decision was that the findings of the thematic analysis of the systematic review study in phase one would be analysed and interpreted preceding the analysis of the qualitative studies in phase two.

In the development of the systematic review themes, I used the 6-step thematic analysis described by Braun and Clarke (Braun & Clarke, 2006). The thematic analysis focused on conflicting findings and constructs theories (Barnett-Page & Thomas, 2009). Also, it is distinctive in that it treats conflicting findings as “higher-order data” (Greenhalgh et al., 2005).

Further, Braun and Clarke (2006) suggested that the final analysis should create an overall story about what the different themes reveal about the topic. The process of using a thematic coding that involves a balance of deductive coding (derived from the systematic review study) and inductive coding (themes emerging from participant’s discussions) through to the identification of themes through “careful reading and re-reading of the data”. Thus, the themes identified from the systematic review study at phase one will become the data code categories for the qualitative data, and allow for a level of alignment and analysis between the results of phase one and the exploratory qualitative data (phase two).

The exploratory qualitative study thematic analysis utilised the dualistic technique of inductive and deductive thematic analysis informed by the work of Fereday and Muir-Cochrane which included the process of deductive thematic analysis and allowed for themes to emerge directly from the data using inductive coding (Fereday & Muir-Cochrane, 2006). A Combined inductive/deductive approach fits well with a mixed method and a pragmatic epistemology underpinning, whereby the methods are chosen by the researcher to be best able to answer the research questions (Roberts, Dowell and Nie, 2019). Through this it was possible to identify how themes were generated from the raw data to uncover meanings concerning factors affecting PA participation among Palestinian women after breast cancer and PA promotion by Palestinian HCPs. I found that the process could be used to identify consistencies and differences and to continually refine concepts and theoretically relevant categories (Fram, 2013). Therefore, for the analysis of phase two of this research, I conducted a constant comparative analysis, using a process of thematic coding involving a balance of deductive analysis derived from the systematic review study and inductive analysis of themes emerging from participants’ discussions (Fereday & Muir-Cochrane, 2006). This approach complemented the research questions by allowing unexpected themes with the potential to provide further analysis of the data to develop during the analysis process and to ensure that the clustered themes were representative of the initial data analysis and assigned codes. Thus, using adaptive constant comparative analysis as a strategy in this second phase of research enabled a more "systematic and thorough way" to analyse the data.

In summary, from this process of analysis, the credibility of the codes and categories in phase one of SR study was found to be linked to the level of familiarity of the data in the second phase at the exploratory study. Familiarity in this exploratory study demonstrated an understanding of the situational context within which the data from the participants originated.

Finally, respecting the integrity of the methods in practical terms is recommended as a means of continuously linking the research question back to the philosophical foundation of the research (Kielhofner, 2006).

2.6 Time horizons

This defines the time frame for the research and collection of data at a specific point of time. For phase two of this research, this involved exploring the fieldwork setting, ethics approval, recruiting participants and data collection from August 2017 until May 2018, data analysis continues till September 2019.

2.7 Data trustworthiness

Trustworthiness criteria are pragmatic choices for researchers concerned about the acceptability and usefulness of their research (Nowell et al., 2017). Several definitions and criteria of trustworthiness exist, but the best-known criteria defined by Lincoln and Guba (1985) are credibility, transferability, dependability and confirmability.

Credibility corresponds roughly with the positivist concept of internal validity. Transferability is a form of external validity. Dependability relates more to reliability, and confirmability is largely an issue of presentation (Shenton, 2004). In addition, rich descriptions, with the use of quotes of participants, are considered to contribute to trustworthiness in qualitative research (van Nes et al., 2010). Thus, the starting point for research must be articulation of the research world view, so I started by reading reports of research studies that have utilised qualitative methods to provide insights and ideas for my personal use (Austin & Sutton, 2014). Then, I conducted a systematic review search and study in phase one, where I explored all the related literature regarding factors affecting PA participation among women after breast cancer. Then I attended several related study days, workshops and conferences inside and outside the university. To achieve and ensure rigour and trustworthiness in this qualitative research, I have ensured that I followed strategies throughout data collection, as follows:

Table 2.6: Strategies to ensure trustworthiness in qualitative research. Based on Lincoln and Guba (Lincoln & Guba, 1985)

Strategies to ensure trustworthiness in qualitative research. Based on Lincoln and Guba and (Lincoln and Guba, 1985)		
Criterion	**Strategy**	**Action plan**
Credibility Addresses the “fit” between respondents’ views and the researcher’s representation of them(Tobin & Begley, 2004)	**Prolonged engagement**	To obtain credibility of the data, I arranged exploratory fieldwork visits for almost six weeks to develop an early familiarity with the research setting. During this period, I arranged several meetings with gatekeepers at all oncology institutions in the West Bank before the first data collection interview took place (see details in next section, regarding preparation for the research).
	Persistent observation	Identifying characteristics and elements most relevant to the problem or issue under study was another strategy that I took into consideration while I was preparing to collect data. Thus, I arranged several visits to Palestinian refugee camps, new villages and cities that I had never been to before. I was keen to recruit women living at different sites in the occupied Palestinian territories, with a diverse age group and social status.
	Triangulation	I achieved triangulation as I collected data from more than one group: first, women after breast cancer; second, HCPs including oncologists, surgeons, nurses and

		physiotherapists who work at oncology departments in the Palestinian territories. Also, I used a validated tool (IPAQ), as I was interested in finding out about the kinds of physical activities that women after breast cancer do as part of their everyday lives.
	Member check	Although I could not obtain feedback on the data from members of the groups I interviewed, I had feedback from my local supervisor. First, I translated all the interviews from Arabic to English. Then, I sent transcripts of the interviews in both languages to her to check the translations. Furthermore, I sent her the participants' quotes in both languages and discussed the analytical categories and interpretations for some of the data. I think that this strengthened the credibility of the data collected. Also, I kept all records of member checking and discussions, as it would be useful to make the development of the interpretations transparent.
Transferability It to the generalisability of inquiry. In qualitative research, this concerns only to case-to-case transfer (Tobin & Begley, 2004)	**Thick description**	I wrote and described the context of participants where possible, such as how many children and people they had to take care of, as well as where they lived, etc. Context, not just behaviour and experiences, becomes meaningful to an outsider. Also, I have used quotes by participants where possible.
Dependability and confirmability Confirmability is concerned with establishing that the researcher's interpretations and findings are clearly derived from the data (Tobin & Begley, 2004)	**Audit trail**	I recorded the research path that I took throughout the study to ensure the transparency of the research process. I wrote notes on decisions made during the research process, such as the number of participants screened, recruited and sample saturation. Also, I wrote notes during the discussion with my supervisory research team meetings to discuss the interpretations of the data and how to manage it.
Reflexivity	**Diary**	I wrote reflexive notes about each course I attended, places that I visited as well as my experience, to

Reflexivity is a self-critical account of the research process, including the researcher's internal and external dialogue (Tobin & Begley, 2004)		acknowledge the importance of being self-aware and reflexive. This was helpful in the process of collecting, analysing and interpreting the data. Also, in the presentation of the findings for this research. (See more details in the section on preparation for the research and the overall reflexivity).

2.8 Transparency and coherence

Transparency relates to how clearly the stages of research are described. The methodology and methods in this study were comprehensively discussed, with the chapters providing a complete explanation of each step carried out. The detailed methods for each phase will be presented later, in chapters 3 and 4.

2.9 Sensitivity to context

Sensitivity to context was demonstrated in the early stage of the research, given that I reviewed the literature on the lived experiences of women with and after breast cancer, their needs, changing identities and the challenges they encounter regarding PA participation. The literature review helped me identify research aims, questions, methodologies and methods. Then, the systematic review study facilitated the discussion of findings, supported by the relevant literature. Sensitivity was also demonstrated by choosing an exploratory qualitative approach as the methods as it facilitated close engagement with the experience of women living in the Middle East, in particular, women living at the (oPt).

Another further reflection on sensitivity to context in this work is awareness of the socio-cultural setting of the study. This research delved into the religious, social, cultural and political views influencing women's PA participation after breast cancer and I was personally able to understand the context of participants' responses.

2.10 Preparation for the research and the overall reflexivity

From the beginning and during the preparation period, I organised to meet with my academic supervisors, attended relevant training at the University of East Anglia (UEA) and relevant study days outside the university to expand my knowledge and skills and develop the focus of the research.

Reflexivity has been defined in a variety of ways: the differences in definition largely depend on the philosophical or pragmatic approach adopted by the writer. What separates reflexivity from reflection is that reflection is a more comprehensive set of thoughts mainly concerned with process and verification, ensuring that measures are taken to represent participants in their "true" light. Reflexivity, on the other hand, is an explicit evaluation of the self (Shaw, 2010).

Reflexivity is the process of conscious self-reflection on social and cultural background, personal and professional experience, and assumptions and values that might impact the research process (Hennink et al., 2010), as well as adding to the validity of the findings. Thus, thought out my fieldwork data collection and interviewing participants as well as during data analysis and interpretation, I tried to confront and challenge any assumptions regarding what participants may or might not mean. Reflective field notes were taken immediately after each interview to reflect on the process and experience. When listening and transcribing each interview, it was important to be aware of the physical and body aspect or language and learn about silence that occurred before discussing difficult events that might cause distress and the long deep breath before talking about diagnosis experience. The use of field notes helped capture women's nonverbal and verbal reactions which assisted during the analysis stage and made me aware of the impact of the interview on both interviewer and interviewee. During the times that women tried to express their emotions, the tone of their voice was tense and eye contact was disconnected as women did not want to be seen with tears in their eyes. Further, I became aware of the sensitivity of revealing information about their sexual life and intimate relationships, because these subjects are not discussed with strangers or in public. It was necessary to remember the cultural implications of exposing sensitive topics and give participants complete freedom to discuss issues they felt were important.

Practising reflexivity was a primary methodological tool, in this research. The combination of interactive methods of being an insider and outsider all helped provoke deeper insights into the purpose of this study. The next section will frame the issues of access in the context of the role of the researcher as both an insider and an outsider.

Insider /outsider

Reflexivity suggests that the researcher has a dual role, as both an 'insider' and an 'outsider', during data collection (Roulston, 2014). I was inspired to write this section by reading the chapter "Arab Women in the Field: Studying Your Own Society" (Antoun, 1989) in which six Arab women analyse the implications of their roles and statuses as professional women, as well as their identities as Arabs for their research and the implications of these roles for access to information and collection of data and then the interpretation of their data. One of them (Lila Abu-Lughod is a Palestinian-American anthropologist), argues that 'insiders', researchers who study a group to whom they belong, have an advantage because they can use their knowledge of the group to gain more intimate insights into their opinions (Abu-Lughod, 1988). In contrast, 'outsiders' also argue that they are likely to have a greater degree of objectivity and ability to observe behaviours without distorting their meanings (Mullings, 1999). Further, more qualitative researchers are exploring moving beyond an insider-outsider and have explored how to negotiate "multi positionalities" (Merriam et al., 2001).

For me, conducting fieldwork in the oPt was a balancing act between the role of an 'insider' and an 'outsider'. By being an Arab/Muslim Palestinian female and a physiotherapist who lived and studied my Masters and PhD in the United Kingdom helped me during my research journey.
It is generally assumed that a common culture between interviewers and interviewees can provide a fertile ground for gaining access, nurturing rapport, asking meaningful questions and reaching an empathetic understanding. Thus, insider status was an advantage when as the

research process started terms of easy access to the community, knowing the nuances of the language and how to ask critical questions while remaining sensitive.

Firstly, interest was in women after breast cancer as they are vulnerable ones who need a strategy to move forward which came from personal experience with them as a physiotherapist. Besides, being the daughter of someone who died of cancer, I have personal knowledge of the consequences of cancer treatment. This helped other women to feel more comfortable with me and to talk openly about their issues, especially a sensitive subject such as breast cancer.

Secondly, my insider knowledge of the issues pertaining to Arab women's PA participation was gained from my social position as being a Palestinian Arab/Muslim female having grown up and lived with the knowledge of Palestinian culture. I have been privileged to live in different countries with different cultures, including both Middle Eastern and Western cultures, which has made me deeply aware of factors affecting PA participation for healthy adult women from different cultures and societies.

I am an Arab /Palestinian and Muslim female who was born and raised in Saudi Arabia for the first 10 years of my life, which gave me an idea how women live in Saudi Arabia, a very conservative society. Then my family moved and lived for many years at Ramallah city in the West bank then Jerusalem city while most of my family still live in Ramallah. I have also lived for one year in Nottingham, United Kingdom, while studying for my Master’s degree in 2007-2008 and visited other countries in the Middle East, such as Jordan, Egypt and Turkey, where I learned there are less conservative lifestyles for women. Further, living in Jerusalem the Old City, traditionally divided into four quarters (known since the early 19th century as the Armenian, Christian, Jewish, and Muslim Quarters) alongside women from different cultures and religions, as well living in the UK during my PhD, showed me how culture, society and religion might affect or shape women's PA participation. Thus, there was no need to bridge the cultural gaps that an ‘outsider’ researcher would have. Rather as an Arabic speaker and a female wearing a hijab, positioned me the researcher as an insider. This ensured rich insight into the data and enabled an exploration of the factors that affect women’s PA participation after breast cancer and its promotion, from the perspectives of the women and HCPs in the oPt.

These experiences gave me insights into what might affect PA participation among women, however, Arabs/Muslims around the world range from the liberal to the fundamentalist. Martin and Mason (2003) described how substantial gaps exist in the data, and conflicts appear to exist between traditional beliefs and practices of Islam. As in other religions, incongruence may exist between beliefs and daily living and the meanings of religious and non-religious activities are not separated. In the Islamic religion, the symbols for women are apparent in several ways. For example, the wearing of the hijab by Muslim women is a sign of religious affiliation. However, the specific dress code may vary with the region. In the MENA, some countries have laws requiring women to wear religious attire (a loose-fitting black cloak). In Indonesia, for example, 79 locals’ by-laws required women to wear a hijab in 2013 (Pew Research Center, 2016), while Iranian women have to cover their hair and wear loose-fitting clothing in public places (Pew Research Center, 2016).

In the oPt, there is no particular dress code for women by law, and Palestinian women consider that simply covering their hair is acceptable in public. This suggests modest dress among females differs from one country to another within the Arab/ Muslim world, which may or might not constrain PA performance among some women.

Living in the oPt since 1994 I, like any other Palestinian living in the West Bank, East Jerusalem and Gaza, have experienced movement restrictions due to the Israeli occupation, the separation barrier, military checkpoints, and volatile days in terms of confrontations, clashes and curfews, thus I know how Palestinian people live. Despite this, I still had no idea of the struggles and challenges faced by Palestinian women in adjusting and coping to have an active life or participate in physical activities after breast cancer in the Palestinian territories, as an example of an Arab/Muslim society. During the exploratory fieldwork visit I to visit places I had never been to before, which I reflected upon in my fieldwork notes and got to know how people, especially Palestinian women, live on a day-to-day basis.

On the other hand, status as a doctoral candidate appeared to provide some degree of ‘outsider’ status with some participants. As not all interviews were simple and there was some experience of being 'othered' because of being constructed as having a western researcher mind and being an Arab, Muslim female, having lived in the UK and travelling alone. From an academic status, being a PhD female student who has spent considerable time in the West, positioned the researcher as an outsider. Thinking about women's positions and women's empowerment, these distinguishing features became much more apparent when listening to Palestinian women participants and realising how Palestinian culture, as one example of Arab culture, negatively affects women's PA participation in society. However, focussing on the women's experiences enabled the creation of a space where their voices and experiences would be heard and valued.

Similarly, as an outsider, the professional role as a researcher from a university (whether as an instructor at Al-Quds University/Palestine or PhD researcher at UEA/UK) meant that I did not work at any of the Palestinian health care institutions (Governmental hospitals, NGOs, UNRWA or Health Work Committee). This helped on some occasions, as HCPs felt relaxed and spoke openly about the challenges of working with cancer patients at their institution.

Some of the participants had not experienced being interviewed before. For them, it was the first time they had spoken openly to a person outside of their circle of family and friends about their experience.

Although I knew that the interviews might raise topics that would be difficult to talk about, such as sexual and intimate relationship issues, I did not expect the women to feel free to address them as either facilitators or barriers for being active and PA participation after breast cancer. The level of pain and struggle described by the Palestinian women was unexpected and the personal and complex issues encountered overwhelming. This, I felt, justified raising awareness of these women's experiences and giving them a voice. As a researcher, I aimed to be as objective as possible while as a woman I was attentive to being sensitive and compassionate.

In a pragmatist philosophy, it is acknowledged that the researcher's values will impact on the interpretation of findings. Thus, in data analysis, from the outset, I stated I believed in the benefits of PA for cancer patients and women after breast cancer. This may mean I have interpreted the findings in a much more positive light than was intended, specifically when it comes to women's empowerment. However, it was also important to stay mindful and critically reflective towards achieving knowledge throughout the research process" (Hesse-Biber, 2012).

Courses I attended as part of my PhD and experiential learning gained by living in the UK within a Western culture, helped me see how culture affects people’s daily behaviour and specifically PA participation (See Appendix 2-B for more detail). As a result, I recognised how different cultural ideals affect health behaviours (i.e. PA and diet) and helped me identify that cultural barriers impact on a healthy lifestyle.

I also reflect that the work has been accepted and presented at national and international conferences, e.g. the University of East Anglia Postgraduate Conference (poster presentation, 2017; oral presentation 2018), and first international conference for physical therapy and oncology (poster presentation 2018) in the Netherlands. This project has been an educating, enriching and challenging journey, involving many different experiences. I visited locations never before explored in my own country which gave me a deeper understanding of my own culture and how it affects people lives, in particular, women after breast cancer. Further, this PhD study offered the opportunity to be in contact with different physiotherapists and HCPs from all over the world at conferences in different settings. All this has helped me as an Arab, Muslim female researcher to acknowledge the impact this personal and professional experience has had on me.

In conclusion, these experiences gave me the chance to re-evaluate my values and beliefs regarding PA and how culture affects our daily lives. These experiences were constructive when I went back to the (oPt). to start my fieldwork and data collection as well as during and after data analysis for phase two study as a Palestinian Arab/ Muslim woman.

2.11 Ethics and governance approvals for phase two

The phase 2 study needed ethics and governance approvals. Therefore, planning recruitment and data collection and methods for obtaining consent from participants took place in this phase. Full details of the ethics and governance approval are provided in Appendices (2.C to 2.H).

During the long journey to gaining ethics approval for this qualitative study realised that I had to apply to more than one ethics committee before I could start recruitment. I also had to translate all of the documents (research proposal, participant information sheet, and demographic survey and topic guide questions) for each subgroup from English into Arabic.

First, I applied to the FMH (Faculty of Medicine and Health Science) ethics committee at the University of East Anglia (UEA) in June 2017, and they FMH Committee requested approval from Al-Quds University in the Palestinian territories before they could formally approve the study. Thus, I needed to apply to Al-Quds University Ethics Committee and the cover letter from them was the first step for approval in the occupied Palestinian territories. I gained their approval on 11th September 2017, Ref No: 23/REC/2017 (Appendix 2-C). I then had to apply to the General Directorate of Education in Health at the Palestinian Ministry of Health, as their ethics committee approves studies that recruit participants from governmental hospitals. I received their approval on 4th October 2017, Ref No: 162/1630/2017 (Appendix 2-D). For NGO approval, I applied to the Augusta Victoria Hospital (AVH) Ethics Committee and received approval on 18th October 2017 (Appendix 2-E). Further approval was gained from Dunya Women's Cancer Centre on 20th October 2017 (Appendix 2-F) and the Al-Najah University Teaching Hospital on 21st January 2018 / private sector (Appendix 2-G). Finally, approval from UEA's Faculty of Medicine and Health Sciences (FMH) ethics committee was achieved on 1st February 2018 (Appendix 2-H).

Risk assessment was one of the issues that the ethics committees at both UEA and Al-Quds University addressed. They wanted to guarantee both my safety as a researcher as well as the safety of the participants. Therefore, they required me to have a local academic supervisor who would be informed when the researcher was going to and coming back from each interview. Dr Asma Imam from Al-Quds University agreed to undertake this role. She is a nurse by background and has a PhD in Health Management and Community Studies from De Montfort University, Leicester, UK and has an interest in women's physical and mental health.

Data management

I had to prepare and address how data would be transferred from the oPt and stored at UEA. It was decided that the best method of data transfer was to upload data directly to One Drive at UEA. This was reinforced as I travelled to and from Tel-Aviv airport in Israel, where an encrypted laptop (or alternative storage device) was likely to be confiscated (see Appendix 2-I).

For data storage, the plan was made after meeting the IT team at UEA and reading the data protection rules of data transfer (Appendix 2-j).

In addition, I undertook a Data Protection Act training module online. The recommendation was that data should be uploaded to a cloud-based location with no local storage so that all participants were guaranteed confidentiality.

All of the data will remain in secure storage (locked safe) until completion of the research when it will be retained in safe archive storage for a minimum of 10 years until destroyed following UEA guidance on records management. Once transcribed, the paper document was similarly retained in a secure location. The transcription identified all individuals by number only. All consent forms relating to the interviews were also stored in a locked safe until archived in secure records storage, as specified by UEA records management.

2.12 Translation

In qualitative research, language is central. It is the most common form of data that this type of research produces, first in an oral form, then written as transcriptions or as excerpts in reports of qualitative work (Green and Thorogood, 2018). Also, in qualitative research, the meaning is transferred from one phase to the next, until it reaches the reader and at each transfer, meaning might get lost. Such loss of meaning reduces the validity of the qualitative study (van Nes et al., 2010). Thus, I attended a workshop about "Researching across languages and cultures: introducing some theoretical lenses".

The relief on patients and families' faces was witnessed many times, on meeting a health care provider who spoke their language and came from the same culture. For example, when my father was hospitalised at Hadassah Hospital in Israel to be treated for lung cancer, the family asked for an oncologist who spoke English or Arabic to treat him, because no one in the family spoke Hebrew and it was easier to communicate in a language understood. This is supported by Saati (2013) who found that Saudi Arabian women with breast cancer expressed difficulties in communicating with HCPs due to language barriers.

Different languages use different ways to look at the world, but translation provides us with the opportunity to explore and interact with these different views of the world. Translation refers to carrying the meaning of a text from one language to another. Translation of transcripts to a language familiar to the whole research team costs time and money, and meaning can be easily distorted or lost in translation. In some languages and dialects, there are no direct translations for some words and other words, several purposes can be assigned to them (Tsai et al., 2004).

This process involves the interpretation of the meaning of the text and producing the same meaning in another language. Translation as an activity is as old as written language or text itself (The Linguistic Approach to Translation, 2009).

Qualitative research is considered valid when the distance between the meanings as experienced by the participants and the meanings as interpreted in the findings are as close as possible (Polkinghorne, 2005). Decisions made about translation can directly affect the accuracy of data collected and the validity of the research reported. However, it can be addressed by explaining how the translation was carried out, by whom, and how local meaning and cultural connotations were captured and reported in the data (Behling & Law, 2000). Nowadays, it is generally agreed that translation is inevitably influenced by the source language culture and the target language culture, and how to comply with cultural norms involved becomes one of the major problems in actual translating (Sun, 2011). Therefore, a translator must decide which of the norms take priority - whether the cultural norms of the source language community, the cultural norms of the target language community, or perhaps a combination of the two. Correspondingly, foreignising methods and domesticating methods are put forward (Sun, 2011). As the principal investigator of this research and the source of language for the second phase is Arabic (the main language for potential participants), while the end target language is English, I decided to have a combination of the two as it would be easier to discuss the research with a wider group of people. Keeping a good balance between the two extremes might be ideal for dealing with the cultural elements (Sun, 2011).

I translated these data myself, following Roulston's (2014) suggestion to translate data at the point of transcription and conduct the analysis and interpretation in the language of the representation. Reflecting on this – it was challenging, especially looking for words in English to reflect the complex meaning of the original Arabic. Every effort was made to translate the Arabic idioms into appropriate English language. To ensure credibility, data analysis and coding were conducted in Arabic before translation into English. Any inconsistencies in the translations were discussed and corrected with the local academic supervisor at Al-Quds University however back translation was not performed due to the length of each interview and the use of slang.

I will now present the process of translation and describe the various interactive operations involved. I will reflect more on this process in chapter 4. The representation of the process is set up on the basis that translation is a multidisciplinary activity. The aim is to arrive at a comprehensive understanding of the process of translation.

To begin with, Arabic is the official language used by Palestinian people in the oPt. The most apparent translation shift, or linguistic change, that results when a translation is carried out from English into Arabic or vice versa is word order.

In English, the word order follows the pattern of subject + verb + rest of the sentence, whereas in Arabic the word order follows the pattern of verb + subject + rest of the sentence. When translation from English into Arabic, or the other way around, is carried out, attention must be paid to this fact, or else there will be mistakes in translation (Jabak et al., 2016).

Translation of the research instrument

There are four suggested principles that should inform ethical practice regarding the translation of a research instrument: the duty to alleviate suffering; the commitment to show respect for people; the responsibility to be sensitive to cultural differences; and the obligation not to exploit the vulnerable (Green & Thorogood, 2018). The translation is meant to provide a parallel corpus of texts across different languages and it is possible to maintain the English sentence and its meaning in various Arabic translations. I, therefore, made a careful decision about the choice of words in Arabic which are possible equivalents to their English counterparts.

The goal of this step was to recast the meaning of the source version (English) into the target language (Arabic), rather than to literally translate the source version word by word. Back translation, one of the most common techniques used in cross-cultural research, involves looking for equivalents through a) the translation of items from the source language to the target language; b) independent translation of these back into the source language; and c) "the comparison of the two versions of items in the source language until ambiguities or discrepancies in meaning are clarified or removed" (Behling & Law, 2000).

This translation decision was taken in discussion with supervisors, in particular my local supervisor, as she had an experience of local qualitative research.

I used the unified Arabic version for all the research instruments and I back-translated into English; this was then checked by the local supervisor to maintain comparability of the research tools in both languages. I was translating the text manually, aided with online or offline dictionaries, such as Google Translate and news sites on the subject that were translated, and which showed better quality.

Step 1: Initially, I did the translation from the original English documents to Arabic for the 'who' documents (protocol, participant information sheets, consent forms, demographic questionnaire, and topic guide for each group). I used the validated translated Arabic version of the IPAQ (International Physical Activity Questionnaire).

Step 2: I re-read, reviewed the text and edited changes according to my initial judgment.

Step 3: I sent the two versions (English and Arabic) to my local supervisor, who is bilingual in Arabic and English. She reviewed all the documents and checked for equivalence of meaning. She sent her comments on the documents back to me for more work. Her feedback was mainly on how the wording of the questions and interactions might be improved for clarity.

Step 4: After I had a good agreement on both the Arabic and English versions of the research instruments from my local supervisor, I submitted the two forms to Al-Quds University ethics committee to read, criticise and give their feedback. After finalising the work, approval was given.

Step 5: I then submitted all research documents to the Palestinian Ministry of Health (MOH), Augusta Victoria Hospital (AVH) and NGOs, Dunya Women's Cancer Centre, and Al-Najah Teaching University Hospital (private sector) in Arabic and English.

Step 6: Finally, I received their approval to start the research data collection using the Arabic version of the documents.

Translation back data into English

Back translation is one of the most common techniques used in cross-cultural research. It involves looking for equivalents through a) the translation of items from the source language to the target language, b) independent translation of these back into the source language, and c)" the comparison of the two versions of items in the source language until ambiguities or discrepancies in meaning are clarified or removed' (Behling & Law, 2000).

For the semi-structured interviews, I transcribed interviews in Arabic first then translated them into English and sent both versions for review by the local supervisor. This step was essential as it helped me check for more accurate words to interpret what the participants meant, to convey the same meaning of the text from the source language to the target one.

As I know more than one language, I find it interesting that every culture has the ability to observe nature or phenomena and then come up with a unique word for it, like it has its own way of expressing thoughts and ideas. Giving words to experiences is a complicated process, as the meaning of experience is often not completely accessible for subjects and difficult to express in the language (van Nes et al., 2010) and due to the differences between two cultures, semantic equivalence is limited to some degree (Sun, 2011).

For example, in Arabic when you say “Ya haram” it means that you feel pity for that person but in a negative way, which many Palestinian women after breast cancer mentioned, and how they felt when someone said it to them.

Non-equivalence in intralingual meaning can often be found due to cultural differences. The intralingual meaning is mainly determined by the resources of language. Sound, rhythm, unique patterns of phrase order and techniques for linking clauses into sentences may all carry semantic values. If the form in which a message is expressed is an essential element of its significance, then there is a very distinct limitation in communicating this significance from one language to another (Sun, 2011).

Words have different meanings to different people, and they have cultural contexts that get lost in translation. Here, I was very careful not to lose the original essence of the participants' feelings and the meaning of their words during the translations from Arabic to English. This issue is discussed in the literature: when participants and the main researcher speak the same language, no language differences are present in data gathering, transcription and during the first analyses, because usually, the first coding phase stays close to the data (van Nes et al., 2010). As I am Palestinian and speak the same language as the participants, I have a fairly good understanding of the culture, background, history and behaviour of a word’s meaning.

At the beginning, translation worked well but took more time than I had anticipated, as I spent much time reading, analysing and writing up the data. This was extremely frustrating at some points, as I often ended up trying to pinpoint something specific that does not have an equivalent in English. On the other hand, one of the recommendations for qualitative research to avoid potential limitations in the analysis is to stay in the original language for as long and as much as possible (van Nes et al., 2010), as the analysis might even benefit from the fluid descriptions of meaning using various English formulations. On reflection, I feel that it was worth the time investment and it made the deductive analysis an easier and less daunting task, as I knew precisely all of the data.

Translation of quotes

Translation of quotes poses specific challenges, because it may be difficult to translate concepts for which specific culturally-bound words were used by the participants (van Nes et al., 2010).

Sometimes, the term which relates to what participants are trying to say just turns out to be far too vague, and the sentence loses intensity. Also, with an interpretation of meaning being central in qualitative research, language differences may affect the understanding and interpretation of meanings in different phases on the way from participant to reader. However, special attention is needed when metaphors are translated, either in quotes or in the findings (van Nes et al., 2010). So, I tried to invest time in how to translate idioms and phrases.

Finally, the second checking of themes from data is well-advised (where feasible) to enhance the face validity of the work and to demonstrate reliability (Austin & Sutton, 2014), therefore, I sent several whole interviews in both Arabic and English for peer review by my local supervisor.

To further ensure rigour, I sent all the quotes in Arabic and English to my local supervisor for peer review and we discussed some of them, so I had more validation for the translation.

2.13 Summary

This chapter postulates that pragmatism is an appropriate philosophy to underpin the research questions being addressed. It has also described and justified the sequential-dependent design adopted and the proposed research methods.

The specific methods and findings for each study will be detailed in the following three chapters.

Chapter 3: Systematic Review

Factors affecting Physical Activity among Women after Breast Cancer & Oncology Health Care Professionals: A Meta-Narrative Systematic Review

Abstract

Background: Despite growing recognition that physical activity (PA) may provide health benefits among women after breast cancer (WABC).PA levels remain low amongst this population. Furthermore, although health care professionals (HCPs) appear to be interested in recommending PA to their cancer patients, evidence has reported several barriers they face in this role. It is therefore important to understand those factors that affect PA uptake and promotion among WABC & HCPs, to enable interventions to be appropriately tailored to their needs.

Design: This systematic review adopted a meta-narrative synthesis of qualitative & quantitative studies that explored factors affecting PA among WABC from the perspective of both women and oncology health care professionals (HCP).

Data sources: AMED, MEDLINE, CINAHL, EMBASE, Scopus, SPORT Discus, and PsychINFO databases were electronically searched, grey literature and reference lists in the English language up to January 2019. PROSPERO registration: (CRD42016053051).

Eligibility criteria: Adult WABC and oncology HCPs.

Results: Twenty-five studies were identified according to our inclusion criteria. Four themes were identified and 10 sub-themes. There were: Daily living with breast cancer (Physical effects &Psychological effects), Altruism (family obligations, Care-giver roles &Domestic commitments); Changing identities (Altered body image & PA as a means of empowerment) and Promoting PA (Beliefs& motivation about PA, Fear, Social support& cultural attitudes to PA, Information sources& resources of PA and HCP role and responsibilities).

Conclusions: PA promotion among WABC will need a strategic plan to increase it by addressing all of the factors that may hinder or facilitate it among them as well as among HCPs. These factors are multidimensional and diverse according to women's' physical & psychological status, family priorities, beliefs & motivations, the culture of PA, information source and resources of PA as well as roles and responsibilities of HCPs, and lack of reimbursement for PA counselling.

3.1 Introduction

Chapter 1, illustrated that despite growing recognition that physical activity (PA) may provide health benefits among women after breast cancer (WABC), PA levels remain low among this population. Furthermore, although health care professionals (HCPs) appear to be interested in recommending PA to their cancer patients, evidence reports several barriers they face in this role. Thus, in this chapter, evidence will be highlighted regarding the factors that affect PA uptake and promotion among women after breast cancer and HCPs by conducting a systematic review study. This chapter describes the steps that followed while conducting, reporting and writing up the systematic review study.

3.2 Justification of the study

As outlined in chapter 2, I decided to carry out a systematic review to synthesise factors affecting PA participation in women after breast cancer treatment from the perspective of those women and HCPs who work with them. Although quantitative and qualitative research has been conducted in this field, which has contributed to the increased knowledge of the benefits of PA for cancer survivors', their levels of PA and factors which may influence their PA participation the synthesis of both perspectives is still lacking. An initial search revealed empirical studies encompassing quantitative (survey), RCT and qualitative (interview, focus group and ethnography) studies.

Systematic reviews are generally considered to provide very high-quality results and therefore are beneficial in guiding practice because they use justified and explicit methods in the identification and analysis of studies included (Moule et al., 2017). The purpose of a systematic review is to create a thorough summary of all the available primary research that responds to a specific research question (Clarke, 2011). Also, Polit and Beck (2014) state that a systematic review is more than a simple literature review: in itself, it is an orderly, scholarly response to a question, and it follows many of the same steps as any other study.

Systematic reviews are considered the ‘gold standard’ for synthesising the conclusions of various studies that ask the same questions, whether the evidence comes from health care, education or another field (Boland et al., 2017).

3.3 Choice of approach

Various evidence-informed initiatives have stimulated the creation of different systematic review groups, including the Joanna Briggs Institute (2014), the Cochrane Collaboration (2014), and the Campbell Collaboration (2014). These groups provide guidance, education and support for those engaging in systematically synthesising the literature. The critical element of a systematic review is the synthesis. That is the process that brings together the findings from the set of included studies to draw conclusions based on the body of evidence (Rodgers et al., 2009). Therefore, it quickly became apparent that the critical challenge in this review would be synthesising data from studies with different methodologies.

Thorne and colleagues, all leading thinkers in the area of qualitative integration, use the word meta-synthesis as an umbrella term to refer to "a family of methodological approaches to expanding knowledge-based on meticulous analysis of existing qualitative research conclusions" (Thorne et al., 2004). A meta-narrative approach, initially proposed by Greenhalgh et al. (2005) was suggested as best suited to studying topic areas that have been considered by different groups (Wong et al., 2013). Polit and Beck (2014) define meta-synthesis as the grand narrative or interpretive translation that is produced from the integration of findings from qualitative studies. A meta-narrative is one of the new approaches to a qualitative and mixed-method systematic review (Drisko, 2019) to synthesise diverse types of literature with a focus on identifying the “storylines of research” within and across disciplinary boundaries (Davey et al., 2013).

A meta-narrative review is an interpretive review methodology based on six principles: pragmatism (when working with a large and heterogeneous literature, select sources that appear most relevant to a particular problem), pluralism (acknowledge and celebrate that different researchers have examined a topic in different ways), historicity (consider which earlier studies influenced which later ones), contestation (use conflicting findings to drive the search for more precious explanations), reflexivity (critically examine assumptions, methods and emerging findings) and peer review (present emerging findings periodically to external audiences and take account of their feedback)(Barry et al., 2018). Due to the nature of the literature on this topic, I adopted a meta-narrative approach to this systematic review.

3.4 Systematic review steps

Boland et al. (2017) point out that, when carrying out a systematic review, the review steps to be followed must be clearly organised and correctly described. Therefore, according to Egger and Smith (2013), steps in conducting a systematic review are as follows:

1) Formulating a review question
2) Writing review aims and objectives
3) Defining inclusion and exclusion criteria
4) Searching for studies
5) Selecting full-text papers that meet the inclusion criteria
6) Appraising the quality of included studies using checklist
7) Extracting data from included studies
8) Presenting results and assessing the quality of evidence
9) Interpreting the results

3.4.1 Review question

The first step when conducting a systematic review is the movement from a place of uncertainty to a question that is both understandable and answerable. This strategy can be used to centre on the research question when looking through relevant articles that might answer the research question (Miller & Forrest, 2001). Hence, I thought of what insights could be drawn by integrating findings from different perspectives about the factors affecting PA participation among WABC and PA promotion by HCPs in one review. Therefore, the review questions were:

1. What factors affect PA participation by women after breast cancer worldwide?

2.What factors influence HCPs' promotion of PA to their cancer patients?

3.4.2 Review aims and objectives

Review aims

1. To explore and identify the factors affecting PA uptake and participation by women after breast cancer.
2. To explore what might influence HCP promotion of PA to their cancer patients.

   Thus, I would appraise and synthesise primary research relating to PA participation and promotion.

Review objectives

1. To critically review existing literature on factors that influence women's PA participation, including barriers and facilitators for being physically active after breast cancer treatment.
2. To critically review existing literature on factors that influence oncologists, general physicians, breast surgeons and other health care professionals, such as physiotherapists and nurse's promotion of PA to their breast cancer patients.

3.4.3 Inclusion and exclusion criteria

Inclusion and exclusion criteria can be defined in many ways. One way to establish the inclusion criteria, which is used in most systematic reviews due to its effectiveness, is to form a PICO to help screen studies in or out of the review (Boland et al., 2017).

The PICO formula can be used to create a well-worded question. This includes four primary parts: population (P), intervention (I), comparison/context (C), and outcome (O).

The forming of inclusion/ exclusion criteria and the review question commonly happen in parallel. These should be seen as compatible rather than separate tasks (Boland et al., 2017).

In this systematic review, worldwide journal articles of qualitative and quantitative and mixed research studies containing data about factors affecting PA or exercise among women after breast cancer and HCPs who work with cancer patients, irrespective of country of origin, which met the inclusion criteria were considered eligible for inclusion.
The inclusion criteria are outlined in Table 3.7.

Table 3.7: Inclusion and exclusion criteria

PICO	**Inclusion**	**Exclusion**
P /Participants	Adults aged 18 years or older	Those aged under 18 years
	1) Women after a diagnosis of breast cancer (WABC) who still may be undergoing adjuvant hormone therapy. 2) Health care professionals (HCPs) who work with breast cancer patients, including; oncologists, general physicians (GPs), breast surgeons, nurses, physical therapists (PTs), occupational therapists (OTs) and exercise physiologists.	Other types of cancer patients, including men with breast cancer.
I / Intervention	No specific intervention is applied; however, the focus of the paper or significant findings inform insight, views, experiences, attitudes, perceptions, beliefs regarding factors affecting PA among	Studies with a mixed intervention (e.g. PA with diet, nutrition and or any other health education and behaviour change interventions) where the outcomes and participants with breast cancer cannot be isolated from different cancer types.

	women after breast cancer and HCPs.	Studies on palliative care, as patients' experience, would be different from other participants.
C/ Comparator	Not applicable study designs	
O /Outcome	The main focus of the qualitative component is the perceived or actual factors affecting PA among women after breast cancer, or factors affecting HCPs promoting PA to their cancer patients. The outcome of interest for the quantitative component is to consider the objective or subjective measures of the PA, factors affecting PA participation or promotion.	
Types of studies	Primary research studies; qualitative designs such as phenomenology, grounded theory, ethnography, action research. Other research designs of a quantitative nature, such as RCT, non-randomised controlled trials, before and after studies, cohort studies, case-control studies, descriptive studies, case series/reports where the outcomes can directly be related to factors affecting PA participation by women after breast cancer; and any factors	Reviews, editorials, conference abstracts, and any grey literature (unpublished) will not be included in this review.

	affecting HCPs' promotion of PA to their cancer patients.	
Language	Studies published in English.	Papers and documents not written in English

3.4.4 Literature search strategy

A protocol was developed and registered prospectively on the international database of prospectively registered systematic reviews (PROSPERO/ (Registration number: CRD42016053051) and updated (19.12.2018, / https://www.crd.york.ac.uk/prospero/).
The thesis author Esra Hamdan (EH) developed the protocol with the guidance and assistance of the supervisory team Jane Cross (JC), Sarah Hanson (SH) and Toby Smith (TS). (A copy of the study's protocol is provided in Appendix 3-K).

Data sources

According to Boland et al. (2017), searching is an umbrella term that is used when explaining the methods to identify evidence of relevance to the review question. When deciding which databases to search, the author takes into consideration the clinical question and which databases might contain relevant studies (Melnyk & Fineout-Overholt, 2015). Thus, I started the preliminary search for the articles in December 2016. A scoping search using Medline and Embase databases on Ovid® was initially carried out to help to identify and finalise the relevant search terms. The Cumulative Index to Nursing and Allied Health Literature (CINAHL) and the Excerpta Medica Database (EMBASE) were searched initially to identify and explore keywords and MeSH (medical subject heading) terms to describe the articles. Medical Literature Analysis and Retrieval System Online (MEDLINE) and CINAHL are two of the best-known and most wide-ranging databases (Melnyk and Fineout-Overholt, 2015).

At this stage, I used a thesaurus to identify more terms to detect articles. For example, I used (“Cancer” OR “Malignant” OR “Carcinoma”), and I added “Oncology” to identify any article conducted either at oncology departments or that included HCPs, referral policy of PA from an oncology department, etc. Then, I used three main strategies across several databases and resources to minimise the possibility of missing the best evidence.

Keywords searches, subject heading searches, also known as medical subject headings (MeSH), and title searches were the main strategies.

Then, I combined all the keywords, or subject headings, with the Boolean operators AND or OR. Also, symbols such as # or $, (*****) were used to include both American and UK spellings, the symbols used depending on the database concerned. Each database uses a different symbol. Further, all keywords or MeSH headings for each concept were combined with OR, and then the results from the five concepts were combined with AND.

The following electronic databases were last searched on 26th March 2019.

- MEDLINE (Ovid)®
- EMBASE (Ovid)®
- AMED (via Ebsco)
- Web of Science
- SCOPUS
- CINAHL
- PsycInfo

A draft of the search strategy for MEDLINE and EMBASE is provided in (Appendix 3-L), and it was adapted appropriately while searching the other databases.

The following search terms and syntax were used. Below is an example of a list of keywords, and MeSH headings with their alternatives, as used in the search strategy for Medline, Embase and Amed database through Ovid:

"Breast" and "Cancer" OR “Malignant” OR “Carcinoma” and “Oncology”

PLUS

"Enable*" OR "Facilitate*" OR "Barriers" OR "Factor" OR "Preference"

PLUS

"Physical activity" OR "Exercise" OR "Rehabilitation" OR "Walking" OR “Participation” OR “Lifestyle”

Two filters limited search results, language: English and publication type: journal.

No restriction was placed on publication period or study type, as I searched for all study designs that could explore factors affecting PA among cancer patients and oncology HCPs.

Additionally, reference lists of all studies included for final analysis and those of related systematic reviews identified by this search were also inspected to identify further studies of relevance to this review.

Software to manage reference

I exported all search results of the various databases were into the reference manager Endnote 7.2.1, where duplicates were identified, recorded and removed.

3.4.5 Screening and selection

Search results were checked for eligibility against the research question; the whole process of results screening was carried out in three stages as described below:

1) Title screening: initial screening of titles against the inclusion criteria to identify potential papers for abstract retrieval.
2) Abstract screening: screening of abstracts to identify papers for full-text retrieval.
3) Full-text assessment: assessment of full papers for inclusion.

I conducted the literature search and screened titles, removing duplicates, conference abstracts and unpublished dissertations. I read abstracts for relevance according to the inclusion/exclusion criteria. At this stage, all studies that appeared to meet the inclusion criteria were retrieved as full texts by me and another PhD student (LB) to check their eligibility against the defined inclusion criteria, using self-designed forms. This step was to confirm relevance first and then to reduce inconsistencies and risk of bias by me as the principal researcher. To reduce bias as much as possible, a two-stage screening process was used to assess the relevance of studies identified in the search. Studies were eligible for inclusion if both reviewers (me and the other PhD student) agreed that they were relevant against the inclusion criteria.

Then, to ensure studies were correctly included, one of the supervisory team (SH) independently reviewed all of the intended included studies. Finally, a meeting was held with the supervisory team (JC) and (SH) and me to resolve disagreements.

A PRISMA flow chart, which is a preferred method for reporting results of systematic reviews (Moher et al.,2009) was selected to report the findings of this systematic review and to summarise the results obtained throughout the full process of study screening.

The chart shows the number of studies identified at each stage as well as several duplicates recognised and removed. Reasons for exclusion are also provided alongside the PRISMA chart, specifically for studies excluded at both the abstract and the full-text screening stages.

3.4.6 Data extraction

Data extraction is the task of identifying and inspecting relevant details from the research studies included in a systematic review (JBI Reviewer's Manual - JBI Reviewer's Manual - JBI GLOBAL WIKI, 2019). Furthermore, data extraction requires going back to the studies included and highlighting relevant details that will answer the research question (Bettany-Saltikov & McSherry, 2016). Thus, I developed the data extraction form for each study type. A template design was guided by an overview of the JBI data collection checklist.

A data extraction form should be used to help reduce the number of errors and to make sure that the same data is documented for each paper (Jahan et al., 2016) and also to minimise the risk of bias when extracting data. Then, I piloted the data extraction form using a representative sample of studies (data extraction form in Appendix 3-M).

I designed the form to collect information to be extracted based on the research question, a summary of PICOS (Patient/Population, Intervention, Comparison if any, Outcomes, Study Design Type) and other pertinent characteristics of the reviewed studies. Then, I extracted the text of interest from the reported studies and participant quotes, and I managed all data using Microsoft Excel.

The data extraction sheet covered the following:

- General characteristics of the study: author(s); publication year; study objective, design, setting, country, ethical approval and conclusions.
- Participants’ characteristics: patient sample size, age, gender, ethnicity/race, health care professional sample size and exact profession; response rate where possible and details of the intervention, if any.
- Findings, including factors affecting PA, whether it was barriers or facilitators, and preference of participants were extracted.
- Outcomes and questionnaire's reporting methods, if any used.

I independently extracted data, and then grouped and summarised it into factors that influence PA uptake among women after breast cancer and the promotion of PA by HCPs.

3.4.7 Reporting of results

The search results are detailed in the PRISMA flow diagram (Figure 3.1). The search yielded 3,509 studies; 1,405 duplicates were removed. A total of 147 of these, either systematic or integrative reviews, were excluded after I had identified the original research articles cited by these sources. The remaining 1,957 studies were screened at the title level, and 1,552 were excluded as clearly irrelevant. The remaining abstracts of 518 articles were screened.

Any that did not provide enough information regarding PA and breast cancer were retrieved for full-text evaluation. Searching reference lists of other similar systematic reviews produced a further seven articles for assessment.

In total, 148 full texts were assessed for eligibility by me (EH). From these, 67 were excluded as they were not relevant to factors affecting PA and breast cancer. Then, to ensure studies were correctly included, I asked another researcher to independently review the remaining 57 studies. A total of 32 studies were excluded due to a lack of information meeting the inclusion criteria. Finally, in total, 25 studies met the inclusion criteria and were eligible to be included in this meta-narrative synthesis review (Figure 3.6) (next page).

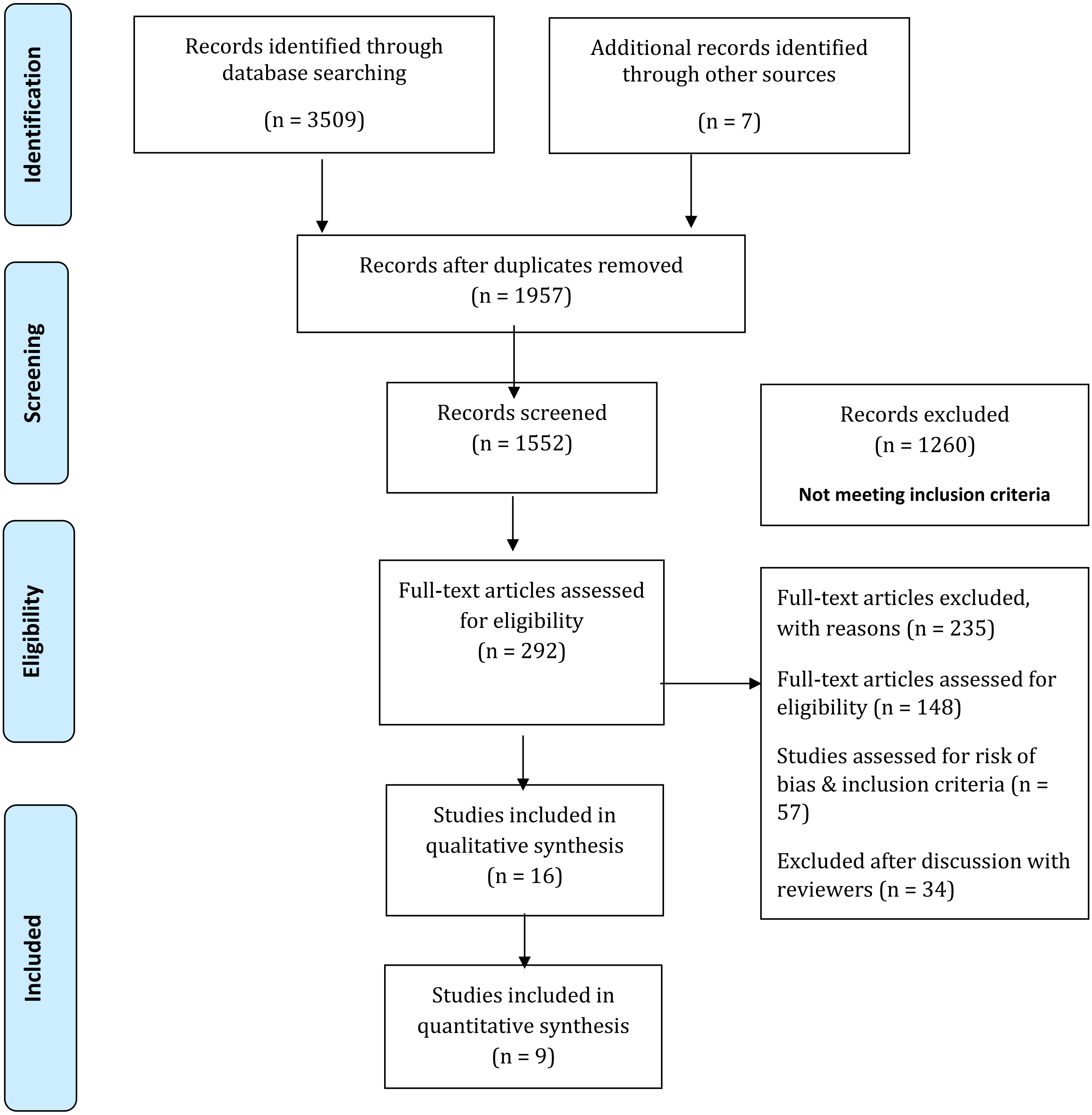


Figure 3.1 (PRISMA flow diagram)

3.4.8 Appraising the quality of included studies

The quality assessment of a study examines the degree to which the study successfully uses measures that reduce bias and error in its design and analysis (Khan et al., 2003). A critical appraisal tool is a form of a questionnaire that identifies key aspects of a research study, which should be present in a robust piece of work (Harrison et al., 2016). All systematic reviews incorporate a process of critique or appraisal of the research evidence. The purpose of this appraisal is to assess the methodological quality of a study and to determine the extent to which a study has addressed the possibility of bias in its design, conduct and analysis (Harrison et al., 2016); also, to identify the strengths and limitations of the included studies and how weaknesses in the study designs have affected the sensitivity of the results (Porritt et al., 2014). Critical appraisal is an integral part of evidence-based practice; it can be used to inform both patients and practitioner to enhance shared-decision making. It is a necessary skill for all HCPs (Porritt et al., 2014). This means that inclusion in a systematic review reveals the reviewers' confidence that both the design and process of a study are adequately robust for its results to be reliable and generalisable (Boland et al., 2017).

Several checklists and tools are available to detect bias and to assess the validity of a study. Researchers have to decide which tools to use as per the need for specific systematic review and nature of studies available (Porritt et al., 2014). In selecting tools for evaluation, the researcher considers its applicability to different approaches (Hannes et al., 2010). For example, many reviewers have used the critical appraisal skills program (CASP) tool to complete their critical appraisal exercise. However, CASP appears to be less sensitive to aspects of validity than the evaluation tool for qualitative studies (ETQS) and the Joanna Briggs Institute (JBI) tool. Although the ETQS provides detailed instructions on how to interpret criteria, the JBI tool, with its focus on congruity, still appears to be the most coherent (Hannes et al., 2010). Also, the JBI critical appraisal tool is well-accepted by users and guides the assessment of internal and external validity of studies reporting prevalence data (Munn et al., 2014).

Therefore, I decided to use the JBI critical appraisal tool for the methodological quality appraisal of the studies in this systematic review.

I used the JBI Critical Appraisal Checklist for Qualitative Studies (Appendix 3-N); the JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies (Appendix 3-O); and the JBI Critical Appraisal Checklist for Randomised Controlled Trials (Appendix 3-P).

According to JBI (2019), the decision to include a study is mainly based on the first reviewer's research experience and skill. However, decisions about a scoring system or any cut-off for exclusion should be made in advance and agreed upon by all reviewers before critical appraisal commences (JBI Reviewer's Manual - JBI Reviewer's Manual - JBI GLOBAL WIKI, 2019). This concerns quality categorisation of included studies as "good", "fair" or "poor" quality. The higher the rating of a study, the lower the risk of bias. A study scoring of five or above is considered good design quality, while those scoring below five potentially have a risk of bias. Thus, we agreed on a cut-off point of 5 to include or exclude articles to reduce inconsistencies and risk of bias. Another researcher and I independently assessed and assigned the scores for each study among the studies identified for inclusion in this review against the relevant Joanna Briggs Institute hierarchy of evidence (JBI Reviewer's Manual - JBI Reviewer's Manual - JBI GLOBAL WIKI, 2019).

The assessment tool is composed of either 10, 8 or 13 criteria that are answered by either "Yes", "No", "Unclear" or "Not Applicable" (NA). Checklist criteria were scored as being included, exclude or seek further info. Where a criterion was met, a score of one point was assigned with a possible 10 points for qualitative studies, eight for cross-sectional studies and 13 for RCT. Although each checklist is based on the corresponding study design, the goal of each one is to detect sources of bias (JBI Reviewer's Manual - JBI Reviewer's Manual - JBI GLOBAL WIKI, 2019).

An affirmative answer was allocated one point and a “No” or “Unclear” response scored a zero; “Not applicable” was not considered an element of the total score (Fawkes et al., 2015). Then, the two reviewers met to review any differences in individual critical appraisal of the studies. Discrepancies were resolved through discussion before the assignment of final critical appraisal scores.

3.4.9 Presenting results and assessing the quality of evidence

The summary of the characteristics and the critical appraisal from all 25 studies are detailed in Table 3.2). All 25 studies were assessed for risk of bias individually.
The critical appraisal revealed that the papers were generally of overall good quality. The 25 included studies were conducted in seven different countries; the most common were the USA (n = 8), Canada (n = 6) and the UK (n = 6). A total of 20 studies were on the women with breast cancer perspective and 5 from the HCP perspective. The majority of qualitative studies (n=16) used semi-structured interviews; one used phone interviews, two used focus groups, and three studies used interviews and focus groups for collecting data. The majority of quantitative studies (n = 8) were cross-sectional surveys, and one was an RCT. A variety of validated and non-validated tools were used to assess the level of PA among women after breast cancer, including three studies which had used IPAQ.

Participant characteristics

Sample sizes of women after breast cancer ranged from seven to 83 in the qualitative studies, with 341 participants in total. For the quantitative studies, they ranged from 50 to 524, with 1,965 participants. The women's ages ranged from 25 to 75, with a mean of 54 years.

In the HCP studies, there were 102 participants in 1 quantitative study and 102 across four qualitative studies.

Characteristics of the included studies

The characteristics of the included studies are summarised in Table 3.8. Although there was no date restriction on the search, most of the articles were studies in the last ten years, suggesting the increasing interest in PA and cancer that has been seen during this time. More information on included studies is in (Abstract 3-Q).

Table 3.8: Summary of quality assessment of included qualitative / RCT/ cross-sectional studies

NO	Reference	Country	Participants WABC /HCP	Study Type	Sample Number	Critical Appraisal (out of 10/13/8)
	(Corbett et al., 2018)	UK	WABC	Semi-structured interviews	11	8/10
	(Owusu et al., 2018)	USA	WABC	Interviews & follow-up focus groups	60	8/10
	(Koutoukidis et al., 2018)	UK	HCP	Semi-structured interviews	21	8/10
	(Fong et al., 2018)	Canada	HCP	Focus groups	27	8/10
	(Haussmann et al., 2018)	Germany	HCP	Semi-structured interviews	30	8/10
	(Schmidt et al., 2017)	Germany	WABC	RCT Self-reported PA before, during & three-six & 12 months post intervention	227 (114 Exercise G /113 Control G)	10/ 13
	(Smith et al., 2017)	UK	WABC	Semi-structured interviews	7	7/10
	(Smith-Turchyn et al., 2016)	Canada	HCP	Semi-structured interviews	24	8/10
	(Wurz et al., 2015)	Canada	WABC	Semi-structured interviews	7	8/10
.	(Mackenzie, 2015)	Australia	WABC	Semi-structured interviews	36	8/10
.	(Husebø et al., 2014)	Norway	WABC	Focus group interviews	27	8/10
.	(Brunet et al., 2013)	Canada	WABC	Semi-structured interviews	9	8/10
.	(Hefferon et al., 2013)	UK	WABC	Semi-structured interviews	83	8/10
.	(Loh et al., 2011)	Malaysia	WABC	Focus group	14	7/10

.	(Sander et al., 2011)	USA	WABC	Focus groups & semi-structured interviews	30	8/10
.	(Miedema & Easley, 2011)	Canada	WABC	Two telephone interviews.	35	8/10
.	(Whitehead & Lavelle, 2009)	UK	WABC	Semi-structured interview or focus group.	29	8/10
.	(Hughes et al., 2015)	USA & Puerto Rica	WABC	Cross-sectional survey	150	7/8
.	(Jones & Paxton, 2015)	USA	WABC	Cross-sectional survey	275	7/8
.	(Oyekanmi & Paxton, 2014)	USA	WABC	Cross-sectional survey/ web-based	273	7/8
.	(Spector et al., 2013)	USA	WABC	Cross-sectional survey	65	7/8
.	(Vallance et al., 2012)	Canada	WABC	Cross sectional survey/ mail	524	7/8
.	(Ottenbacher et al., 2011)	39 USA & 2 Canadian provinces	WABC	Cross-sectional survey/ telephone	259	7/8
.	(Rogers et al., 2008)	USA	WABC	Cross-sectional survey/ mail	192	5/8
.	(Daley et al., 2008)	UK	HCP	Cross-sectional survey/ postal	102	6/8

3.5 Data analysis

Analysis of results included a qualitative thematic analysis of the factors affecting PA participation among women after breast cancer and factors affecting PA promotion by HCPs described within the research. Thematic analysis has been identified as one of a range of potential methods that are often used to analyse data in primary qualitative research (Thomas & Harden, 2008). The combination of analytic methods allowed the development of a meta-narrative review of both qualitative and quantitative data (Dixon-Woods et al., 2005; Gough, 2013). The broader categories were used to explore and describe the perceived factors affecting PA participation and promotion.

Overarching analytical themes and sub-themes were identified, checking back between the themes and the original studies to ensure that the analysis remained true to the participants' quotes in qualitative studies as well as the data in quantitative studies. Analytical themes are a product of interrogating descriptive themes by placing the synthesis within an external theoretical framework (such as the review question and sub-questions) and are considered more appropriate when a specific review question is being addressed (Thomas & Harden, 2008).

As findings from all study types are addressing the same research question, one of the approaches to integrating qualitative and quantitative evidence is detailed by Sandelowski et al., who advocate three basic review designs: segregated, integrated and contingent designs (Sandelowski et al.,2000; 2011).

Integrated design can work as the methodological differences between qualitative and quantitative studies are minimised, since both are viewed as producing findings that can be readily synthesised into one another because they address the same research purpose and questions (Noyes et al., 2019).

Following the full-text review, 'initial codes' were developed. Data were coded to reduce the data into meaningful units and categories were attached to ideas. Coding by idea allows code to be assigned to a couple of words or a whole paragraph if it referred to a particular idea. The emergence of 'descriptive themes', were then reviewed based on similarities and differences.

Thus, I used a matrix spreadsheet to track results of the included studies, I analysed both narratives and participant quotes, as this is an important component of qualitative data analysis to facilitate a constant comparative analysis between the participant's view and the narrative descriptions to formalise the identification and development of the themes using the 6-step thematic analysis described by Braun and Clarke (Braun & Clarke, 2006) as follows:

1) Reading the transcripts several times
2) Generation of meaningful units
3) Searching for themes
4) Reviewing themes and deciding which to combine, refine or separate
5) Defining and naming themes
6) Writing the results.

Furthermore, I assigned a colour for each article included throughout the displaying of the data to facilitate the organisation of ideas, comparing them to one another, checking them with the data and communicate findings in a way that is easy to understand.

Finally, the development of 'analytical themes' was developed from "going beyond the content of primary studies. I continuously critically appraised the interpretation of the data through open discussions with my supervisors, where alternatives were explored.

3.6 Meta-narrative synthesis

This systematic review adopted a meta-narrative synthesis approach using Harden’s thematic synthesis to categorise the factors into themes, across and within, all included studies (Harden & Thomas, 2005). The individual findings of the qualitative studies, or themes, were extracted. Common topics, meanings and experiences were coded, sorted and grouped into similar related categories. The synthesised categories were used to describe the perceived factors thematically. I have presented the synthesis, illustrating each theme using quotes taken directly from the included studies. The next table illustrates the themes from the included studies and the number of studies for each theme.

Table 3.9: Themes developed from the meta-narrative-synthesis

Theme	**Sub-themes**	**Papers where reviewers' theme appears**	**Total**
Daily living with breast cancer treatment-related side effects	Impact of breast cancer treatment side effects; **Physical side effects**, such as pain, fatigue, etc. **Psychological side effects** such as stress, depression, etc	(Corbett et al., 2018; Owusu et al., 2018; Haussmann et al., 2018; Smith et al., 2017; Wurz et al., 2015; Hughes et al., 2015; Mackenzie, 2015; Jones & Paxton, 2015; Sander et al., 2011; Loh et al., 2011; Brunet et al., 2013; Hefferon et al., 2013; Oyekanmi & Paxton, 2014; Ottenbacher et al., 2011; Whitehead & Lavelle, 2009)	**15 studies**
Altruism	Specific issues which continue to impact women's priority, including, principally: **Family obligations**, **Female caregiver roles**, **Domestic commitments**	(Corbett et al., 2018; Owusu et al., 2018; Koutoukidis et al., 2018; Schmidt et al., 2017; Wurz et al., 2015; Hughes et al., 2015; Mackenzie, 2015; Husebø et al., 2014; Vallance et al., 2012; Ottenbacher et al., 2011Oyekanmi & Paxton, 2014; Spector et al., 2013; Brunet et al., 2013; Hefferon et al., 2013; Loh et al., 2011; Miedema & Easley, 2011; Whitehead & Lavelle, 2009)	**17 studies**
Changing identities	**Women's feeling of altered body image and using PA as a means of empowerment**	(Owusu et al., 2018; Smith-Turchyn et al., 2016; Wurz et al., 2015; Hefferon et al., 2013; Husebø et al., 2014; Brunet et al., 2013; Sander et al., 2011; Miedema & Easley, 2011; Whitehead & Lavelle, 2009)	**9 studies**
Promotion of PA	**Beliefs & motivations about PA** **Fear of PA** **Social support & cultural attitudes to PA** **Information sources & resources of PA**	(Corbett et al., 2018; Koutoukidis et al., 2018; Fong et al., 2018; Haussmann et al., 2018; Smith et al., 2017; Hughes et al., 2015; Wurz et al., 2015; Mackenzie, 2015; Oyekanmi & Paxton, 2014; Brunet et al., 2013; Loh et al., 2011; Spector et al., 2013; Sander et al., 2011; Ottenbacher et al., 2011; Miedema & Easley, 2011;Whitehead & Lavelle, 2009; Rogers et al., 2008;Daley et al., 2008)	**18 studies**
	HCPs' education, roles responsibilities and referral schemes regarding PA	(Koutoukidis et al., 2018; Fong et al., 2018; Haussmann et al., 2018; Smith-Turchyn et al., 2016; Daley et al., 2008).	

Summary of the findings

I developed four major themes during the thematic synthesis for all 25 included studies: daily living with breast cancer, altruism, changing identities, and promoting physical activity. These comprise twelve sub-themes. These findings are from two perspectives, women after breast cancer and HCPs who work with cancer patients.

Theme one: Daily living with cancer treatment side effects

Breast cancer treatment modalities can have related side effects (Bodai, 2015). Women after breast cancer reported side-effects, related to their cancer treatment, as one of the factors that had a negative impact on their PA participation. Physical side effects such as musculoskeletal pain, fatigue, lymphoedema and joint limitation were most frequently reported.

> ***''I still have a lot of pain, critical pain. After the breast reconstruction, they cut your muscles; the pain is like you cannot even open a door. So, with that half of my body, I can't do anything.''(WABC) (*****Brunet et al., 2013)**
>
> ***"It hasn't been just after the cancer; I've always had back and joint problems. I use the stair lift because my knees are so painful going up and down the stairs, I did try to use it less, but I was frightened of falling" (WABC)*** **(Corbett et al., 2018)**

It should be emphasised that fatigue differs from 'simply feeling tired' influencing mood, relationships and social interactions (Greenhalgh & O'Riordan, 2018). Women who reported higher levels of depressive symptoms, higher levels of cancer worry and fatigue were less likely to remain consistently sufficiently active (Brunet et al., 2014).

> ***"I feel tired and weak and I feel dizzy too. I can't do any activity at all" (WABC) (Loh et al., 2011)***
>
> ***" I find ever since the cancer, I don't know if it's the medication or what, but I get tired very easily. I'm out of breath and I'm tired" (WABC) (Hefferon et al., 2013)***

Anxiety, stress, depression, and other emotional concerns were often reported as psychosocial side effects experienced by women after breast cancer.

> ***"So, bit by bit, I did give practically all my exercise up, I just didn't want to. It was just, I ended up, with quite bad depression" (WABC)*** **(Hefferon et al., 2013)**
>
> ***"Nobody had discussed the emotional aspect of it at all, then as a result I thought that there was something wrong with me, that I was emotional about it all…I think your emotions do affect your physical activity as well, because you tend to go a bit depressed, don't you?" (WABC)*** **(Miedema & Easley, 2011)**

From HCPs' perspectives, many HCPs identified the complexity of cancer patients' characteristics and the numerous issues that need to be considered when discussing or promoting PA to them, including their physical and psychological status.

> ***"There are people who are currently unable to do sports and who are too exhausted for doing so as well. If you keep telling them: 'If you are active, then your cancer will be cured', I can imagine, that this might cause psychological difficulties for that person" (HCP, oncologist) (Haussmann et al., 2018)***
>
> ***"Take a young lady.... Everything's good ... she has a young family ... she's just been shocked by having this diagnosis of breast cancer; it's the first major illness of her life. She's thinking, 'I'm going to die,' and the next thing she starts to realise is the cancer's got control of her life.... She gets depressed.... So now, try to put into that whole scenario, introducing exercise" (HCP, oncologist) (Smith-Turchyn et al., 2016)***
>
> ***"I think that's a psychological barrier on how ... they ... view the exercise because even walking around the block is a form of exercise. Taking the stairs at work is a form of exercise" (HCP, oncologist) (Koutoukidis et al., 2018)***

Theme two: Altruistic factors

Altruism derives from the Latin root "alter" meaning "other". Altruist also can be defined as "someone who does something for the other and the other's sake, rather than as a means to self-promotion or internal well-being" (Post, 2002).

Altruistic factors impact on women, principally family obligations, female caregiver roles and domestic commitments. It is striking that women after breast cancer felt that their families had 'sacrificed enough' during their cancer treatments, and many had feelings of guilt at 'not having been there' for their family.

> **"If suddenly HCPs said oh, you've got to go and do three hours running a day, no … that's three hours away from my family. They had enough time away from me while I was ill" (WABC) (Corbett et al., 2018)**

This guilt extended to family finances, where women did not want to redirect financial resources away from their family to pursue rehabilitative support for themselves (Brunet et al., 2013).

> **"I had to make a choice; there wasn't enough money in the bank. I was either going to have to choose to go back for my six-week PA programme. And then my kids wouldn't get to participate in activities at the level they had before I was diagnosed with cancer… I wasn't going to have them sacrifice" (WABC) (Miedema & Easley, 2011)**
>
> **"Even when I wanted to go out, I also feel guilty" (Loh et al., 2011)**

Furthermore, the negative impact of the traditional female caregiver role was a strong feature in these women's narratives in this review.

> **"When I was diagnosed, my children were young, and I realised that in the pecking order of things, quite naturally as a mum, you come last" (WABC) (Hefferon et al., 2013)**
>
> **"As a mother, I think we tend to fit the kids and husbands in and working in before we fit ourselves in" (WABC) (Mackenzie, 2015)**

With their additional, domestic commitments frequently mentioned as a further barrier to PA participation.

> **"The trouble is you get home; you have your tea, you've got to sort the boys' dinners out, and do your ironing, by the time you've done that, you can't be bothered going to the gym" (WABC) (Hefferon et al., 2013)**
>
> **"The thing is, you get home and life gets in the way. You don't always have the time for yourself to be active'' (WABC) (Brunet et al., 2013)**

Theme three: Changing identity

This review demonstrated that more women are living with either a temporary or a permanent change in identity, especially when they have lost the breast or part of it after a lumpectomy or mastectomy (Kocan & Gursoy, 2016). This change in identity may be because the breast is considered one of the most important features influencing women's body image, and mastectomy as a surgical treatment for breast cancer may negatively affect a woman's body image and her self-image (Moreira & Canavarro, 2010).

Women's altered body image may be associated with dissatisfaction with appearance, perceived loss of femininity and self-consciousness about her image (Kocan & Gursoy, 2016). Thus, altered body image was reported as a barrier to PA participation among women after breast cancer.

> **"I stopped going to the gym after I got cancer. I didn't want to having to lean forward well, in wide neckline, things will show, and my head felt like boiling because of the wig, I'm too vain to walk around the gym without it" (WABC) (Husebø et al., 2014)**

> **"I had to have a mastectomy, so that took virtually 6 months out of my life of exercise due to my body image" (WABC) (Whitehead & Lavelle, 2009)**

In contrast, there was an alternative narrative for some women. For many of the women in the studies, participation in physical activities was an 'empowering' factor that helped them to either feel in control or normal again.

Engaging in PA empowered them and gave them a way to adapt to their new identity with a new awareness of their body. Participating in PA helped them to gain normality by being viewed as a normal person and not treated as a cancer patient.

> **"You know, just a sense of personal pride. It makes me feel a sense of accomplishment and makes me feel like I still somewhat control my body. It's like everything is still right, and I can still do what I set out to do" (WABC) (Brunet et al., 2013)**

> **"I just think I've had me breast off, I'm not an invalid, I want to carry on to be as normal as possible" (WABC) (Whitehead & Lavelle, 2009)**
>
> **"I feel almost normal again, doing PA was a great way to transition yourself from being an ill patient to a well person" (WABC) (Mackenzie, 2015)**

Theme four: Promotion of Physical Activity

The fourth theme in this review was the promotion of PA. In particular, this theme centred on two perspectives: women after breast cancer and HCPs' perspectives.

The Social Ecological Model for Active Living described by Sallis *et al.*, (2006) was found particularly well suited for studying physical activity, because PA is done in specific places and so studying characteristics of places that facilitate or hinder physical activity becomes a priority (Sallis et al., 2006). Therefore. Promoting PA theme centred on the following subthemes; beliefs about PA, fear of injury, social support of PA and information about PA and roles and responsibilities of HCPs regarding PA, referral scheme, and resources of PA.

First, findings highlighted that many women remained inadequately active, due to fear of PA, whether it was the fear of developing lymphoedema or avoiding activity with a fear of causing injury or damage.

> **"But I was afraid of doing those exercises because of the fear of lymphoedema. I think there's a piece of me that's always a bit concerned about what I can do with my right side" (WABC) (Sander et al., 2011)**
>
> **"The [HCP] said, 'Just do what you're capable of doing,' but you're frightened as I had the reconstruction" (WABC) (Brunet et al., 2013)**

HCPs also feared promoting PA to their cancer patients, especially to women after breast cancer and expressed their concerns about those women's abilities.

> **"There is some uncertainty from my side: could it not happen that she will be overestimating her ability and then does very exhausting things? Maybe then she simply does not have the strength during chemotherapy" (HCP, GP) ((Haussmann et al., 2018)**

In addition, beliefs and attitudes regarding PA and cancer might affect PA participation among women after breast cancer. The included studies indicate that perhaps unsurprisingly, women who engaged in PA before diagnosis were more motivated to undertake PA and as a result, more likely to have a higher level of PA after cancer treatment.

> **‘‘I think that the more PA I do, the more effect it will have on my hot flashes. They do say that there is a positive impact on that, one of the side effects, the menopause caused by tamoxifen and whatever else there is’’(WABC) (Brunet et al., 2013)**
>
> **“I understand that being physically fit will reduce the likelihood of a recurrence, so that’s a huge motivator” (WABC) (Sander et al., 2011)**

Also, HCPs’ attitudes regarding PA may affect their promotion of PA to their cancer patients.

> **“Well, lifestyle is very much a matter of habit, and breaking habits is always difficult for all of us” (HCP, breast cancer surgeon) (Koutoukidis et al., 2018)**

Social support to PA was identified as an essential factor affecting PA participation and that it could be either a barrier or a facilitator, depending on whether there is negative or positive social support associated with PA participation, especially among women after breast cancer.

> **“Cause my children don’t want me to go out. They are so worried that I will be infected by viruses” (WABC) (Loh et al., 2011)**
>
> **‘‘Not having someone to go with, that prevents me from doing it [physical activity] sometimes” (WABC) (Brunet et al., 2013)**
>
> **‘‘My husband encourages me when I work out. He compliments me, and it makes me feel good and keeps me going’’ (WABC) (Brunet et al., 2013)**
>
> **“My son: he encourages me to keep going‴ (WABC) (Owusu et al., 2018)**

Also, this review found that cultural differences in attitudes towards PA may influence women’s participation.

> **“I think some cultures might be more into different types of activities. I know that a lot of African American don’t swim, and that certainly is one of the better PA. So, I think**

> **that might be a little bit of a cultural thing" (WABC) (African American in a US study) ((Jones & Paxton, 2015)**
>
> **"The only barrier for me is my husband's fear. He said not to go out for a brisk walk...don't create any trouble (for myself or him), you know" (WABC) (Asian study in Malaysia) (Loh et al., 2011)**

Being part of a specific group with peers was a desire expressed by many women after breast cancer that may play a role in facilitating their PA participation.

> **"We're each other's cheering partner!" (Mackenzie, 2015)**
>
> **"Not having to wear a wig during PA and feeling comfortable having a shower afterwards, as there was no need to explain our appearance and marked bodies!" (WABC) (Wurz et al., 2015)**

Some of the women reported that supervised group exercise had a positive impact on their PA participation.

> **"This guy [personal trainer] did work with me and developed a programme of exercises which was completely magical" (WABC) (Smith et al., 2017)**
>
> **"When I went back and started doing my aerobics after treatment, the instructor that I had was very caring. I couldn't keep up through the whole class so she would come up to me and say: 'Are you doing ok?' I think that helped me. It made me feel, not that people felt sorry for me, but were concerned that I was okay" (WABC) (Mackenzie, 2015)**

Women expressed a desire for more precise guidelines from their HCPs about safe and effective PA programmes after breast cancer.

> **"After the radiation, the oncologist told me, 'Why don't you do some weight training. It would be good'. He didn't say go here, or look into this, or here is a sheet, but I don't even know what to do. I don't know what my options are" (WABC) (Brunet et al., 2013)**
>
> **"I got a lot of information from my doctors encouraging exercise, definitely. But also from the internet I sought out information on my own. But a lot of times I felt that there**

> **was a conflict. Information from the internet and from pamphlets and other resources made the risk of lymphoedema seem huge, and I felt that there was some conflict in the information I was getting” (WABC) (Sander et al., 2011)**

HCPs also perceived a lack of information and education on what exercise or PA could or should be promoted or recommended in the cancer treatment continuum.

> **“[PA counselling] is not part of our standard education. If you know anything about exercise, it is because you got the information from elsewhere. There is no formal [education] in nursing and medicine” (HCP, oncologist) (Fong et al., 2018)**
>
> **“I’ve come across research papers about things like that [smoking and diet], but I haven’t come across any guidelines” (HCP, physiotherapist, female)(Koutoukidis et al., 2018)**
>
> **‘‘There is evidence that exercise is beneficial... I can’t quote the evidence... I think strengthening as well as a little bit of aerobic’’ (HCP, nurse) (Fong et al., 2018)**

Having a provision of timely education leaflets and tailored information about PA and cancer, including where to refer those cancer patients to, were reported to facilitate HCPs’ role of promoting PA to their cancer patients, especially women after breast cancer.

> **“I think; concrete addresses would be helpful so that you say: ‘Why don’t you just join this or that group once or twice?” (HCP, GP) (Haussmann et al., 2018)**
>
> **“But I think if you’re going to deliver a message, the message should be simple. That exercise matters and why it matters. [Exercise is important for survivors]” (HCP, oncologist) (Koutoukidis et al., 2018)**
>
> **“If some patients I think will benefit from a proper programme, then we give them this Living Well leaflet, I’ll mention to the patient the importance of maintaining a healthy weight, diet and exercise” (HCP, breast cancer surgeon, male)(Koutoukidis et al., 2018)**
>
> **“Specifically, if I have a breast cancer survivor, just an explanation as to why [exercise is important for survivors]” (HCP, medical oncologist, male)(Fong et al., 2018)**

HCPs' views on what hindered or facilitated them to promote PA to their cancer patients included limited time, the pressure of work and responsibilities, as well as who should promote or recommend PA.

> **"My role is not to sit and spend 20 minutes developing an exercise prescription. I'm not an expert" (HCP, radiation oncologist) (Fong et al., 2018)**

> **"There's a time issue. So, it's the issue of prioritising what we're going to talk about in those 5 or 15 minutes" (HCP, oncologist) (Koutoukidis et al., 2018)**

Finally, the lack of available resources and referral schemes regarding PA was a barrier for HCPs to promote PA to their cancer patients, as well as to women after breast cancer.

> **"[It] depends on the patients, where they live. We get a lot of patients from outside of [city] as well, we get them they have travelled far distance and a lot of times those programmes are not available necessarily for them there" (HCP, medical oncologist, male) (Fong et al., 2018)**

> **"I think location is important and I think price is important for some people, you know you have got to look at the whole range of women involved in this" (WABC) (Sander et al., 2011)**

3.7 Discussion

This review reveals a set of important factors impeding PA participation among women after breast cancer and promotion by HCPs. It identified 25 relevant studies highlighting the complexity and diversity of factors affecting PA uptake and participation among women after breast cancer from their perspective. Also, it integrated the perspective of HCPs on factors affecting their PA promotion to their cancer patients. HCPs working in oncology have been under-represented in previous systematic review studies.

The majority of the included studies (16) were qualitative studies, and most were rated as good quality studies according to JBI quality assessment.

In this review, I did not focus on detailed quantification of participation in physical activity, rather, I was interested in what factors affecting women's PA participation. I found that the demographic information in the studies of women after breast cancer did not explain much about the factors that can affect their PA participation, especially in quantitative studies. The qualitative studies highlighted the significance of some demographics for women after breast cancer which may affect their PA participation such as their ethnicity /race background. For HCP participants, their demographic information did not add except for their job title and gender. Over two-thirds of women, after breast cancer reported taking part in only light intensity and no moderate or vigorous activity and not on a regular daily basis, thus few women were meeting PA guidelines.

As a whole, a set of consistent findings emerged, the emerging themes in this meta-narrative synthesis affirmed some themes previously well described in the literature, including daily living with treatment side effects and women's responsibilities as a barrier to PA participation (Browall et al.,2016; Lavallée et al., 2019). Yet, one of the significant findings from this review was the importance of how women's health status after cancer may influence HCPs' decisions to recommend or promote PA to all cancer patients and in particular women after breast cancer. It, therefore, highlights the importance of addressing these concerns when HCPs promote PA to their cancer patients, as indicators of having medical side effects. The poor health status of cancer patients was instead rated by HCPs as a reason not to recommend PA (Haussmann et al., 2019). HCPs should still evaluate their cancer patients' physical and psychological abilities individually and, based on it, recommend PA or not. More specifically, this review emphasised that women after breast cancer as a population need specific consideration, such as oestrogen receptor status or the high prevalence of psychosocial issues (stress, anxiety, depression). These factors could increase the complexity for HCPs when promoting PA and could themselves be a barrier to its promotion (Haussmann et al., 2019). This may further affect PA participation among women after breast cancer.

Second, this review identified that altruism continues to principally influence PA participation among women as they face challenges to prioritise their self-care, including engaging in PA within the context of their family obligations, domestic commitments and as a female caregiver. Altruism was also supported in the literature, as women's roles as mothers could affect their PA participation (Mackenzie, 2014). Still, this review highlighted that altruism might facilitate PA participation for some women and hinder it for others, as it will depend on other issues which this review identified in the following themes. Casellas-Grau et al. (2016) suggest that altruism can be a decisive psychological factor for women - results show it can be positive for some women after their diagnosis of breast cancer (Casellas-Grau et al., 2016). Therefore, altruism may be used to facilitate PA participation among women after breast cancer by encouraging them to be physically active for their families.

The third theme in this review was about changing identity after breast cancer treatment, which was found to have contradictory effects among women, either hindering or facilitating their PA participation. Altered body image, in general, showed a negative impact on PA participation. These results are in line with a previous study in which 20-40% of women treated for breast cancer became embarrassed to show their body or scars (Fang et al., 2012), and felt uncomfortable with the changes to their physical appearance (Sun et al., 2017).

Despite that, other women have expressed that PA participation contributed to a feeling that they could continue their life in a normal way, in line with other studies (Balneaves et al., 2014; Bulmer et al., 2012; Livsey & Lewis, 2017).

Moreover, some women have used PA to adapt to their new identity changes within the societal expectations of femininity and womanhood (Backman et al., 2016). Similarly, participants in Martin et al. (2015) and Balneaves et al.'s (2014) study expressed how exercise helped them to regain the feeling of 'being in control'. Also, Luoma et al. (2014) described that the women in the intervention had a 'desire to switch identity'. Therefore, this review highlighted and emphasized that being physically active and participate in physical activities might offer a strategy to improve body image for women after breast cancer and therefore to cope with the changes in identity to get back to their normal lives. Furthermore, this review identified that some HCPs take into consideration the self-image of women after cancer during their assessment

(Haussmann et al., 2019). However, their precise role in promoting PA to women after breast cancer needs further exploration regarding this issue in particular.

The findings of the fourth theme are about promoting PA. First, it elaborates on the uncertainty of doing PA, the fear of developing lymphoedema (Karadibak et al., 2008), or avoiding activity due to a fear of causing injury or damage (Lee et al., 2009). Additionally, HCPs' belief that their efforts to promote PA during consultations may not change their patients' PA behaviour could impede their willingness to promote PA (Huijg et al., 2014; Hébert et al., 2012).

This review found social support, cultural and racial differences in attitudes towards PA may influence women's PA participation. Literature supported this; for example, Hispanic women self-reported that they were less physically active than non-Hispanic white women after breast cancer (Hughes et al., 2015). African American women suggest a need for community-based participatory interventions that are culturally and spiritually supportive of their PA needs (Yan et al., 2019). Therefore, given the growing diversity of the breast cancer population, HCPs must be able to recognise cultural barriers and ensure they do not misjudge patient preferences of PA after breast cancer.

Further, it identified several desires of women after breast cancer, which may facilitate their PA participation if taken into consideration by HCPs. Women participants in this review expressed their need for an individually tailored PA programme, more specific and face to face information, alongside knowledgeable instructors and support from other peers and groups of cancer patients. Cancer survivors state that they prefer to receive exercise information from their oncologist and would be motivated to exercise if their oncologist recommended it (Jones et al., 2004; Demark-Wahnefried & Jones, 2008). Furthermore, it emphasised the importance of the HCPs' role in providing information about PA to women after breast cancer from the woman's perspective.

Whether or not a simple exercise recommendation made by an oncologist during a clinical visit is enough to change patient behaviour remains unclear (Park et al., 2015). However, a meta-analysis demonstrated that HCP interventions were effective in producing short-term behaviour changes in PA, specifically in women after a diagnosis of breast cancer. These results suggest that women produced modest but positive effects on PA levels post-treatment (Bluethmann et al., 2015). Thus, it is important to address women's desires after breast cancer because research has shown that patients' adherence to exercise is improved when the instructions, they receive are specific and understandable (Taylor et al., 2001). Moreover, the literature supports that an understanding of the reasons why cancer patients may want only limited information can help in developing recommendations; thus, the cancer information strategy should attend to variations in patients' desires for information to ensure that the strategy being developed is flexible and responsive to the individual's coping strategies and information choices (Leydon, 2000).

Additionally, this review highlighted another desire by women after breast cancer in this review which was their preference of specific group with peers that may play a role in facilitating their PA participation. These findings support those from Midtgaard et al.'s (2015) meta-synthesis, highlighting the importance of exercising with others who have had similar experiences. Furthermore, Ireland et al. (2019) noted that walking groups for women with breast cancer and the combination of walking and talking enabled conversations to roam freely between topics and individuals, which encouraged every day and cancer-related conversation. Thus, taking part in walks with peers who have cancer was described as an essential way to start the transition from being a patient to becoming a "person" again.

These interesting findings could provide a model to follow for HCPs when promoting PA to their cancer patients. As identified before, HCPs may have an essential role in referring their cancer patients to PA; hence walking or support groups, specifically a women's group, may facilitate women after breast cancer to engage in PA.

This review has highlighted additional specific factors that might affect PA promotion by HCPs, especially those working in oncology. HCPs have reported that there is a time issue of prioritising what they are going to talk about with their cancer patients, especially for oncologists. Thus, HCPs' lack of time may limit the provision of communication and shared decision making, whether it regards PA promotion or other cancer care options. Other studies supported the fact that there is a profound shortage of oncologists in several parts of the world, which is an undeniable issue impacting on their time, roles, and responsibilities at work (Mathew, 2018). Lack of time and other responsibilities may suggest that there is a chance that HCPs are missing the opportunity to promote PA benefits to their cancer patients. Smith and Hillner (2010) argue that many of the responsibilities of oncologists are reimbursed poorly or not at all (Smith & Hillner, 2010). In this review, it was identified that although HCPs of different specialities highly valued PA, there was still a lack of clarity about whether they should advise or refer patients to exercise, which was an influential factor in the promotion of PA (Kapila et al., 2018). A recent study shows that it is feasible for oncology providers to have PA communications during routine clinic visits, however, the frequency of PA communications varies among providers highlighting that most PA communications come from oncologists (50%) compared with other HCPs such as nurses, PTs or OTs interacting with cancer patients (20%) (Nyrop et al., 2016).

Finally, this review also reported that HCPs' education and referral systems for PA might affect their PA promotion to their cancer patients. Lessons can be learned from different countries regarding how to promote PA, starting with the health care system and educational curriculum, as different studies conducted among oncology HCPs in many countries, such as in South Korea (Park et al., 2015), USA (Nyrop et al., 2016), Ireland (Cantwell et al.,2017), Australia (2017) and Germany (Haussmann et al., 2018) have all provided insights into the factors that hinder HCPs from being able to promote PA among cancer patients and it can play an essential role in assisting HCPs in promoting PA to their cancer patients.

3.8 Conclusion

Findings from this review indicate complex and varied reporting factors influencing PA participation among women after breast cancer. Factors seem to differ according to women's health status after cancer treatment, their priorities within their altruism, and how breast cancer treatment has affected their self-image and changing identity. These are compounded by their beliefs, social, cultural and racial differences which also impact on their PA participation.

Furthermore, women reported their need for specific, simple and straightforward PA instructions, as well as being part of group therapy with peers. While HCPs seem willing to recommend PA to their cancer patients, there are still many factors that affect oncology HCPs promoting it. These are lack of time, shortage of staff, HCP roles, responsibilities and priorities, as well as the education curriculum and PA referral schemes.

These integrated perspectives should lead to a redesign of services and improved allocation of valuable PA resources. For a positive impact on PA participation among women, HCPs will need effective PA strategies and interventions to promote, initiate, obtain and maintain sufficient PA in their cancer patients, especially women. Findings from this review may provide new knowledge and solutions to increase PA participation in women after breast cancer. This can be achieved by addressing the factors hindering or facilitating those women's PA participation.

3.9 Strengths and weaknesses of the review

Several elements strengthen confidence in the findings of this systematic review. The results were based on searching for the best available evidence by using a comprehensive search methodology, with a combination of corresponding keywords that were used to search all related databases systematically.

This systematic review included studies with diverse participants from different health care systems. Previous reviews have included mixed cancer populations or breast cancer at various stages of treatment. In contrast, this review focused on the perspectives of women after breast cancer as well as the perspectives of oncology HCPs. This gives it strength when using it to argue for the promotion of PA among women with breast cancer. To capture all possible evidence regarding patient feedback across the years, we took a reflexive approach and believe that our findings have remained true to the original data and interpretations of the included studies. In general, the methodological quality of the 25 included studies was rated good and I used the JBI critical appraisal tools throughout the review to maintain reliability and reduce potential bias.

However, some limitations were encountered with this review, the findings from 25 studies involved different levels of rigour in design and methodology. Data were reported in a way that did not allow meta-analysis to be carried out. Thus, in an attempt to address the heterogeneous evidence and diverse contexts, a meta-narrative approach to the review was used.

There was a lack of reported reflexivity within the included studies; it was missing in 12 qualitative studies included in this review. In addition, many of the studies did not adequately report on issues related to the credibility, transferability and confirmability of the research. This may raise some concerns over the potential risk of bias in reporting or the quality of the included studies. The majority of studies did not clearly explain how the quotes used in the papers were selected from the original sample to demonstrate themes and some involved multiple cancer types. Because of this, only quotes that clearly related to breast cancer women were used in the review. Not all studies provided a definition of a breast cancer survivor, acknowledging whether this was applied during or after the completion of treatment. Thus, it was difficult to identify specific terms. Therefore, the term used here (WABC) refers to participants after completion of chemotherapy, radiotherapy or surgery and still on hormone therapy. However, all data included in this review were participants, identified in the studies, as having completed treatment or after treatment. I was concerned about women after breast cancer only, thus several studies were excluded which considered combined cancer groups and PA, introducing potential selection bias. A further limitation was some of the included studies used a non-standardised tool for evaluating different outcomes of PA. Articles were only identified as relevant by one researcher (EH), introducing possible bias in the screening and selection process. However, the supervisory group were consulted throughout this process, and clarification was sought where there were concerns about inclusion and exclusion criteria.

Finally, only journal articles published in English were included, so knowledge about other women with breast cancer from studies in different languages remains unknown. Studies were predominantly from North America and the UK thus findings may not be universally applicable highlighting a need for future research with WABC populations from different ethnic groups.

3.10 Implications for research

There is a gap in the literature concerning factors affecting PA participation among women after breast cancer from different ethnocultural groups and regarding factors affecting HCPs' promotion of PA to their cancer patients from diverse ethnocultural groups within their clinical practice. There is a need for more studies to assess PA recommendations with different groups of HCPs. Further qualitative research is needed to understand how and when to promote PA and which components of PA interventions may lead to better outcomes for women after breast cancer.

3.11 Summary

Based on this systematic review, the following these recommendations could improve the quality and understanding of factors affecting PA participation amongst WABC from both their perspective, as well as HCPs' perspective**:**

- There a need to conduct a longitudinal qualitative study to explore women's perceptions of their HCPs' consultation regarding PA and how this contributes to women's experiences of PA participation. With results available to health care professionals identifying strengths and weaknesses for PA consultations.
- There is a need to collect feedback from HCPs about their concerns regarding workload and stress providing PA consultations.

3.12 Implications for thesis

This systematic review identified gaps in the literature regarding the factors influencing PA participation among women and that participation differs both individually and collectively influenced by several complex factors including the different ethnocultural background. HCPs promotion of PA to their cancer patients is also influenced by many factors, especially when directed to women after breast cancer. Therefore, following this systematic review, the next step was to explore those factors among women who were treated and live in the oPt and HCPs working in Palestinian hospitals and within the context of the Palestinian health care system.

The themes identified in this systematic review in Phase One became the coding categories for the qualitative data collected in Phase Two (deductive thematic analysis to facilitate alignment and analysis between the results of Phase One and Phase Two. This increases the validity of the findings from Phase Two, nevertheless, extensive planning was needed for the next phase to ensure that the core method dictated the scope of the data analysis. This is discussed in Chapters 4 and 5.

Chapter 4: Exploratory Study

Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals in the Occupied Palestinian Territories: An Exploratory Study

4.1 Introduction:

In the methodology chapter (chapter 2), I described how this study adopted a pragmatic approach and a two phases design. This chapter describes the steps I followed, conducting, reporting and writing up this exploratory qualitative study as phase two of this research. The first part of this chapter elaborates on the details of the methods, aims and objectives of the study. Then, the second part discusses the data collection methods, recruitment and analysis techniques.

4.2 Justification of methodological choices

I started this research to explore why physical activity levels decline after breast cancer treatment among women and what factors (barriers or facilitators) might affect their PA participation. Specifically, I wanted to understand what factors affect Palestinian women's PA participation after cancer treatment.

Musaiger (2011) suggests that insufficient PA may be potentially related, in part, to a lack of specialised educators and PA programmes that are accepted by a particular society and thus inadequate information is provided to the community at large. Accordingly, based on personal experience of working as a physiotherapist with many Palestinian breast cancer patients and survivors who were facing difficulties regarding PA participation, and because of the paucity of research on this particular topic, I wanted to explore this from the perspectives, of Palestinian women after breast cancer and HCPs. This would enable a qualitative description that truly reflects the different realities affecting PA participation in women after breast cancer in the(oPt).

Consistent with a pragmatic epistemology, this study draws on the most relevant ontology and methods to answer the research questions (Long et al., 2018). As established in chapters 1 and 2, little is known about this subject, thus it was appropriate to investigate it qualitatively. Hence, I used an exploratory qualitative research to facilitate understanding of individuals' lives and experiences (Sandelowski, 2009; Liamputtong, 2013) in real-world activities (Rapport et al., 2018). This also facilitated uncovering unexpected or unanticipated information, not be possible using other methods (Holloway, 2007) and interpretations to explain findings (Austin and Sutton, 2014).

4.3 Aims and objectives

Aim

The study aims to provide a comprehensive view of what affects PA participation among Palestinian women after breast cancer and HCPs' perspectives of factors influencing their PA promotion for cancer patients, particularly women in the oPt.

Objectives

- To explore Palestinian women's experiences of PA participation after breast cancer, and their views on barriers and facilitators to being physically active.
- To explore the views of HCPs who work with Palestinian cancer patients about the barriers and facilitators to promoting PA and what might influence women's PA participation after breast cancer.

4.4 Methods

Following on from chapter 2, I argue that for a broader understanding of what might affect PA participation among Palestinian women after breast cancer we need to explore the perspectives of diverse groups that are related aiming to gain a greater understanding of what might affect PA participation and promotion in Palestinian society.

4.4.1 Data collection

I used one-to-one semi-structured interviews as they are suitable for exploring issues that are sensitive and personal, including people’s experiences of vulnerability and social exclusion brought on by having breast cancer in a conservative society. Furthermore, the flexibility gained from employing this type of interview was appropriate in an exploratory study seeking to reveal complexities, ambiguities and previously unconsidered issues (Knight, 2002). In an interview situation, the researcher as “interviewer” holds a conversation with a purpose, asking the “interviewee” questions with the intent of finding out specific information (Polit & Beck, 2014).

Interviews

An interview is one example of a means of gathering qualitative data which allows the interviewer to cover various issues concerning study aims and allows probing and clarification of issues that are raised by both the interviewer and the participants (Austin & Sutton, 2014). Interviews are best suited to research questions that are descriptive or exploratory, so I decided the questions should be open to allow interviewees to describe, without constraint, their experiences (Gubrium, 2012).

Semi-structured interviews provide a more flexible version of the structured interview, “allowing depth to be achieved by providing the opportunity on the part of the interviewer to probe and expand the interviewee's responses” (Alshenqeeti, 2014). Hence, the questions are relatively set, but the interviewer is free to follow the respondent’s train of thought and to explore tangential areas that may arise (Bell & Waters, 2014). These interviews are advantageous for gathering data on individuals’ perspectives and experiences, particularly when sensitive topics are being investigated, such as breast cancer, as well as what might affect a woman’s PA participation (Gubrium, 2012). Accordingly, since “semi-structured interviews are more than just an interesting conversation’’ and the process requires careful preplanning (Bolderston, 2012).

I started to develop the interview questions that needed to be clear, fairly short, and conversational in tone (Bolderston, 2012).

I considered the specifics of the Palestinian woman's place, an issue addressed by Patton (2002), Maxwell (2013) and others, thus I took a reflective approach as an insider, using my understanding of the traditions of Palestinian women and society (Agee, 2009; Maxwell, 2013). This reflexivity is further addressed in chapter 7 reviewing epistemological reflexivity relating to the assumptions underlying the research and how these have shaped the research process, as well as personal reflexivity specific to the researcher.

The interview processes

This section will describe the steps I followed, starting from preparing the protocol and topic guide of the interview up to the actual interview, which I will illustrate in a later section.

Preparing the protocol/topic guide

A research protocol outlines the purpose of a study, the steps to be followed and is sometimes requested by the research ethics board when a researcher is applying for approval of a study (Creswell, 2013). I wrote a detailed protocol with regard to the study objectives. The interview guide was developed during the data synthesis in systematic review, which allowed me to think through the information required (Appendix v &vi) and refined after this work was completed. As explained in chapter 2, in qualitative research language is central and the most common form of data produced: first in oral form, then written as transcriptions and finally in excerpts for reports (Green & Thorogood, 2018). Since the main language in the Palestinian territories is Arabic, the interviews were conducted in this language. Interviewing in a second language is strenuous, because it quickly exposes any weakness of linguistic or cultural competence and can prove tedious and antagonise respondents by interrupting the flow of their discourse (Mangen, 1999). However, to help ensure the interviews yielded rich and detailed data, I developed topic guides in English initially. This allowed my supervisors at UEA to input into the structure of the interviews, and ensured relevant topic areas were covered and that the types of questions asked were suitable for the target population (Behling & Law, 2000). Then, I translated the research documents into Arabic (previously explained in chapter 2).

The final version of the interview topic guide (Arabic and English) was approved by the ethics committees at Al-Quds University and the Palestinian Ministry of Health, then the University of East Anglia (UEA), before any data collection. The guide was tested in piloted interviews with one participant from each group to ensure it was understandable and useful.

The topic guide had open questions, designed not to be leading, with suggested prompts included if required. Creswell (2007) notes that qualitative questions are "evolving". First iterations of questions are tentative and exploratory but give researchers a tool for articulating the primary focus of the study. Moreover, when writing a qualitative research question, it is usually important not to phrase it so that it 'leads' or contains a presupposition about participants or events (Agee, 2009).

Generally, there are three types of questions asked in interviews: main questions, focusing on primary objectives of the study; then, follow-up probes to help the participants expand their answers and to direct the participant to the central issues the study (Creswell, 2013); finally, there are spontaneous follow-up questions that the interviewer will ask after listening to the first responses to a question, to help encourage the participant to say more (Bolderston, 2012).

Although I used similar questions for each interview, the freedom to elaborate was given to the interviewee; it meant that the answers given were quite diverse, as the interviewer can rephrase the questions and how they are asked depending on the individual participant (Alshenqeeti, 2014). This allowed me, the interviewer, and the person being interviewed the flexibility to go into detail when needed. Furthermore, I could clarify the meaning of questions to encourage the interviewee to respond appropriately, rather than not responding to a question (Moule et al., 2017). Yin (2009) argues that a suitable way for establishing interview questions is by combining the theoretical concepts with background information gathered. The interview questions linked to the theoretical framework but also had relevance to the specifics, which laid the ground for the opportunity to analyse the data collected from the interviews in line with the theoretical framework. Thus, I developed questions (main, prompts and follow-up) relevant to PA participation, breast cancer and Palestinian culture, to help me and the participants to cover a variety of factors affecting their PA participation while not influencing the nature of statements they generated. The interview covered socio-demographic characteristics (age, religion, place of residence, education, marital status, employment status, how many children) and medical information (date of diagnosis, stage, type of treatment, health status, PA participation in general). Then specific questions were developed to explore what might affect their PA participation.

Opening questions included the following, “to start off, tell me about your experience with cancer, beginning with how you came to be diagnosed with cancer and following through the treatment you received”, worked well. The interview was ended using a final question which was, ‘‘is there anything else you would like me to know?’’ to allow women to raise any issues of concern. Some participants, especially women, started to remember things or factors that actually affected their PA participation but had not been mentioned during the interview. HCP participants were also allowed to raise any issues of concern regarding their promotion of PA to their cancer patients.

Place of interview

I conducted all the interviews one-to-one with each participant. The time and venue of the interview were confirmed by telephone 24 hours before the appointment to ensure it was still appropriate and convenient. According to King and Horrocks (2010), three aspects of the physical environment are important: comfort, privacy and quiet. Thus, during the preparation for this study I took these issues into consideration and arranged with the gatekeepers in the cancer centres to be able to use a private room at their institutions if this was the participant’s choice. During recruitment participants (women and HCPs) were given choice regarding where and when the interview was to be conducted.

Most women preferred to participate in the interview in a private room at either the outpatient oncology department clinic venue or at a community centre for several reasons, including to reduce the risk of interruption (Byrne, 2001), as Palestinian women mostly live either with their

extended family or near them. Only two women preferred to be interviewed in their own homes, but only when their husbands were not there.
Second, for HCP participants, the timing and preferred venue are essential as they are often busy. Most HCP participants communicated directly with the researcher and gave their availability for the interview, mostly during their free or break time, at their work institutions. The time and venue of the interview were confirmed by telephone 24 hours before the appointment to ensure that it was still appropriate and convenient for them as it is important to conduct the interview in a productive interview environment because of the participant's perceived ability to answer specific questions important to the research (Gubrium, 2012).

All interviews took place in a quiet, private room so conversation was not overheard or disturbed, to ensure the confidentiality of the research participants and I provided refreshments, as providing water, coffee or tea is a way to build rapport and allowed for some small talk before the interview began (Bolderston, 2012). Written informed consent was obtained at the beginning of each interview along with permission to audio-record

Distress, safety and withdrawal of participants

This study was considered to pose a low risk to participants and the researcher, as it was to explore and discuss factors might affect their PA participation and promotion. However, before any data collection, participants were informed that they could skip any question and were free to withdraw from the study any time; this was never needed.

Data gathered from the interviews varied in depth, some participants talked openly about their experience, while others were reserved about some issues. A number of participants were comfortable talking with me about their personal experiences and private issues and found it very useful to express their emotions. However, some women commented about being uncomfortable discussing issues related to financial and social circumstances.

4.4.2 Sampling strategy

Sampling is an important component of qualitative research design that is central to the process (Mason, 2002). I employed purposive sampling to identify participants who fulfilled the inclusion criteria to explore their experiences within the study aim and context. Purposive sampling is widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources (Palinkas et al., 2013). The rationale for employing a purposive strategy is based on a-priori theoretical understanding of the topic: that certain categories of individuals may have a unique, different or important perspective on the phenomenon in question and their presence in the sample should be ensured (Mason, 2002). Also, Patton (2002) suggests that the overall aim of purposive, as opposed to probability, sampling is to include "information-rich cases for in-depth study" (2002:182). The researcher must decide which participant to include and which to exclude to provide accounts and explanations, thus a set of inclusion criteria or exclusion criteria, or a combination of both, must be specified for the study (Gubrium, 2012).

There are numerous purposive sampling designs. Examples include the selection of extreme or deviant (outlier) cases for the purpose of learning from unusual manifestations of phenomena of interest, the selection of cases with maximum variation for the purpose of documenting unique or diverse variations that have emerged in adapting to different conditions and to identify important common patterns that cut across variations and the selection of homogeneous cases for the purpose of reducing variation, simplifying analysis, and facilitating interviewing (Palinkas et al., 2013).

I selected and recruited participants purposively for pragmatic reasons, based on the selection of cases with maximum variation to get a representation of Palestinian women, to identify important common patterns and expand the range of variation or differences. The rationale for gaining a heterogeneous sample is that any commonality found across a diverse group of cases is likely to provide a more widely generalisable phenomenon than can be found in a homogenous group of cases. Thus, heterogeneity of the sample helps provide evidence that findings are not solely the preserve of a particular group, time or place, which can help establish whether a theory developed within one particular context could be applied to other contexts (Mason, 2002). However, with regards to ‘sensitivity to context’, a fully articulated, contextualised sample prevents unwarranted generalisation and helps to locate the study within a place, time and meaningful group. Therefore, the sample can be given contextual richness by locating it clearly within a particular culture or subculture (Robinson, 2013).

4.4.3 Participant recruitment

A combination of active and passive recruitment techniques has been found to enhance recruitment (Gemmill et al., 2012) effectively. Learning from previous studies and focusing on a thorough planning phase enhances the chance of stable recruitment in the same population (Sygna et al., 2015). So, I did a comprehensive search on previous cancer studies that were conducted in the oPt to recruit women with breast cancer (Hammoudeh et al., 2016) to understand the best options for recruitment.

After approvals from all institutions, in each area, a gatekeeper was identified during the exploratory fieldwork visits. Recruiting patients with the assistance of their health professionals who identify the potentially eligible patients is commonly used in health care research (Hewison & Haines, 2006). Thus, the recruitment strategy was that gatekeepers, relevant health care managers (key contacts), cancer nurses or social workers at all leading oncology cancer institutions in the Palestinian territories would contact women who had breast cancer and inform them about the study. For HCPs, I used a multiple entry technique combining advertising and word-of-mouth approaches to interested participants which involved asking participants for recommendations of acquaintances who might qualify for participation (Robinson, 2013).

A cover letter (**Appendix 4-R**) was sent to all cancer institutions introducing the research study and asking them to liaise with relevant health care managers (gatekeepers or key contacts) to facilitate identification of potential participants.

Then, I arranged meetings with those key contacts (gatekeepers) in each site to discuss the purpose and process of the study, so they could act as facilitators for successful recruitment. I provided hard and soft copies of recruitment materials (advertisement, Letter/Email of Interest for participants', Letter/Email of Confirmation, participants' information sheet, informed consent) to gatekeepers to give to potential participants, to allow them to decide whether to participate in the study or not **(Appendix 4-S/T/U/V/W/X/Y/Z).**

Gatekeepers conducted initial participant screening and identified eligible participants, using a checklist to assess eligibility. They contacted potential women either by email or phone, giving them 5-7 days to consider their potential participation in this research study. Potential participants were asked to either contact gatekeepers or me, as the researcher, using the numbers on the participants' information sheet **(PIS/ Appendix i/ii).** The PIS should allow the participant to decide whether they wish to read about and discuss the study further. It should provide clear information on the essential elements of the specific study: the condition or treatment under study, the voluntary nature of involvement, what will happen during and after the trial, what treatment may be withheld, the participant's responsibilities, the potential risks, inconvenience or restrictions balanced against any possible benefits and the alternatives (Edwards & Holland, 2013). Informed consent **(Appendix iii/iv)** is a mechanism for ensuring that people understand what it means to participate in a particular research study, so they can decide in a conscious, deliberate way whether they want to participate (Edwards & Holland, 2013).

The PIS and informed consent are among the most important tools for ensuring respect for individuals during research. This is an ethical requirement, emphasised in the conduct of research; both locally and internationally, guidelines state that special attention should be given to the specific information needs of individual potential subjects as well as to the methods used to deliver the research information (World Medical Association (WMA), 2009).

There were some particular challenges in the recruitment process, including the gatekeepers' lack of time, forgetting to mention the study to participants, recruitment confusion, and not prioritising recruitment.

Difficulties surrounding participant recruitment are well documented and present a barrier to researchers aiming to conduct research involving persons with chronic diseases, such as in this study of breast cancer (Miller et al., 2013). For example, Miller et al. (2013)’s study of recruiting participants who had chronic illness experienced challenges similar to this study, and a highly effective, alternative recruitment strategy used by the authors in a qualitative study was discussed. Furthermore, because of the limited time frame for data collection, it is important that the site’s principal investigator (which was me) works closely with gatekeepers to identify and recruit the research participants. Therefore, in order to overcome some of the recruitment obstacles, I was communicating with the gatekeepers on a regular basis, and mostly I had to be physically at their institutions to facilitate identifying potential participants (almost one day a week at each cancer institution). Thus, on-site recruitment by health providers (gatekeepers) was the best option.

Women after breast cancer participants were recruited from five main areas in the West Bank, (Nablus city in the north, Ramallah and East Jerusalem in the central, Bethlehem and Hebron cities in the south of the West Bank). Women from the Gaza Strip were recruited from Augusta Victoria Hospital (AVH) when they came for their follow-up tests. I was attempting to cover women in diverse geographic and political areas (city, village, refugee camps and Bedouin community).

HCPs were recruited through the Palestinian governmental hospitals with oncology departments, such as Al-Watni Hospital at Nablus city and Al-Hussein Hospital at Bethlehem city; Augusta Victoria Hospital as NGOs at East Jerusalem; Al-Najah University Teaching Hospital (private sector) which had an oncology department at Nablus city; and Dunya Women’s Cancer Centre, part of a Health Work Committee in the occupied Palestinian territories.

4.4.4 Inclusion and exclusion criteria

In developing the sampling frame for the study, inclusion and exclusion criteria for each group were developed. Thus, gatekeepers were asked to identify the potential participants which met the eligibility criteria.

- **Women after breast cancer (WABC) participant group**

- Inclusion criteria were as follows:
    1) Being a Palestinian woman being treated in a Palestinian health care institution.
    2) Been diagnosed with breast cancer; participants age should be over 18 (no upper age limit)
    3) Have finished breast cancer treatment (surgery, chemotherapy, and radiotherapy but possibly still on hormone therapy) at least 3 months prior to the interview.
    4) Willing to be interviewed without the presence of a third person to ensure the participant's freedom to express their feelings
    5) Able to provide informed consent form.

- Exclusion criteria were as follows:
    1) Not being a Palestinian woman or being a man diagnosed with breast cancer.
    2) Participants aged below 18 years.
    3) Still on breast cancer treatment of chemotherapy, radiotherapy, or did not complete it more than 3 months ago.
    4) Having a stage four or terminal ill stage of breast cancer.
    5) Not willing to be interviewed without the presence of a third person, as this may influence their participation.
    6) Not providing informed consent.

- **Health Care Professionals (HCPs) participants group**

- Inclusion criteria were as follows:

1) Oncologists and general physicians and surgeons who work with women with cancer diagnosis at a Palestinian oncology institution.
2) Nurses, physiotherapists and occupational therapists who work with women who have a cancer diagnosis.

3) Willing to participate and accepting to be interviewed without the presence of a third person to ensure the participant's freedom to express their feelings.
4) Signing an informed consent form.

- Exclusion criteria were as follows:
  1) General physicians who do not work with cancer patients and/or any GP who does not want to participate. These GPs may not have the experience of dealing with cancer patients and survivors, and so they do not have the experience which we want to explore in this research.
  2) Nurses, physiotherapists and occupational therapists who do not work with patients who have cancer. These HCPs may not have the experience of dealing with cancer patients and survivors, and so they lack knowledge which we want to explore in this research.
  3) Any HCP who does not work at a Palestinian oncology institution as well
  4) Not willing to participate or accepting to be interviewed without the presence of a third person, as this may influence the credibility of their participation.
  5) Not signing an informed consent form.

Prior to taking part in the study, potential participants were required to provide written informed consent. I gave potential participants the PIS and consent form; however, at the beginning of our meeting on the day of the scheduled interview, I asked participants to read the consent form carefully and sign it if they were still interested in taking part in the study.

4.5 Sample size

With qualitative research methods there is no fixed number of interviews to be conducted. Qualitative research experts argue that there is no straightforward answer to the question of 'how many' and that sample size is contingent on a number of factors relating to epistemological, methodological and practical issues.

For example, Sandelowski (1995) recommends that qualitative sample sizes are large enough to allow the unfolding of a ‘new and richly textured understanding’ of the phenomenon under study, but small enough so that the ‘deep, case-oriented analysis’ (p. 183) of qualitative data is not precluded. While Malterud et al. (2016) introduced the concept of information power as a pragmatic guiding principle, suggesting that the more information power the sample provides, the smaller the sample size needs to be, and vice versa (Malterud et al., 2016).

The practical reality of research is that most studies require a provisional decision on sample size at the initial design stage (Robinson, 2013). However, the size of a sample is influenced by both theoretical and practical considerations (Vasileiou et al., 2018). The most widely used principle for determining sample size and evaluating its sufficiency is that of saturation.

Sample size may be increased if ongoing data analysis suggests that the research has omitted an important group or type of person from the original sample, who should be added in order to enhance the validity or transferability of the findings or theory (Silverman, 2010). Alternatively, if the researcher judges that “theoretical saturation” has been reached, it is assumed that further data collection will not bring incremental benefit to the theory development process and where no new information contributed during the interview and no new codes are produced (Guest et al., 2006).

Pragmatic factors, such as access and the sensitivity of a topic, may determine the sample size in a study. Thus, gatekeepers were told to stop finding potential participants when I and my supervisors agreed we had reached the data saturation after interviewing 35 Palestinian women after breast cancer. The whole period of exploring fieldwork, gaining ethics approval and recruiting participants and the actual period of data collection took several months, starting on 15th August 2017 and continuing until 13th of May 2018. This agreed stopping point was also influenced by Ramadan (the month of fast or holy months) for Muslims, which started on 16th May 2018, as it was felt it was not practical or convenient to continue for either the researcher or the participants. The timing of the interview is essential as the researcher needs to be aware of the daily schedule, seasonal activities (such as Ramadan), and work habits of potential respondents (Bolderston, 2012).

Screening and recruitment of women's group

A total of 112 women after breast cancer were screened to match the inclusion/exclusion criteria, and 86 were approached, mostly by the gatekeepers. Many women refused to participate for various reasons; mostly because they were not interested in talking to anyone about their experience.

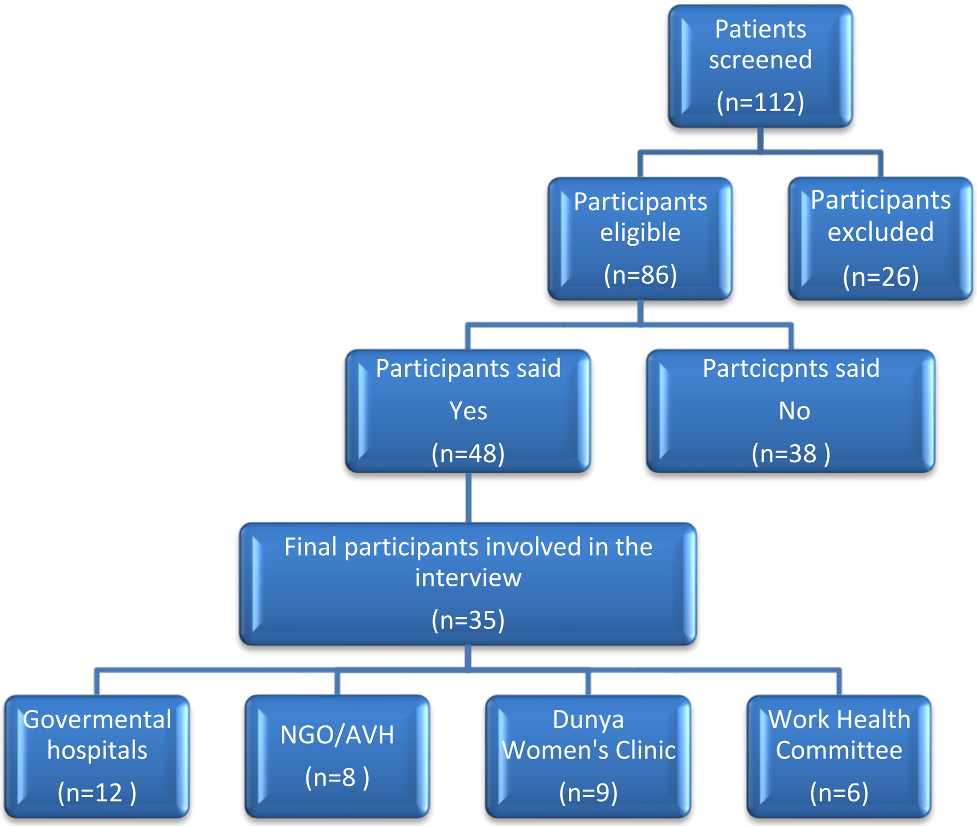


Figure 4.7 Flow diagram of WABC participants screened, approached and recruited

Screening and recruitment for HCPs group

A total of 63 HCPs were screened by both the gatekeepers and me, the researcher, to match the inclusion/exclusion criteria.

After that, 57 were approached, mostly by the researcher. However, many HCPs (n=16), especially oncologists, surgeons and nurses, refused to participate for various reasons; mostly they answered that they did not have time for an interview or they were not interested in taking part. From the 41 HCPs who initially were interested in the study, 6 declined and refused to participate after their initial approval on the day of the interview for unknown reasons. The final participants (n=36) expressed interest and all were cooperative.

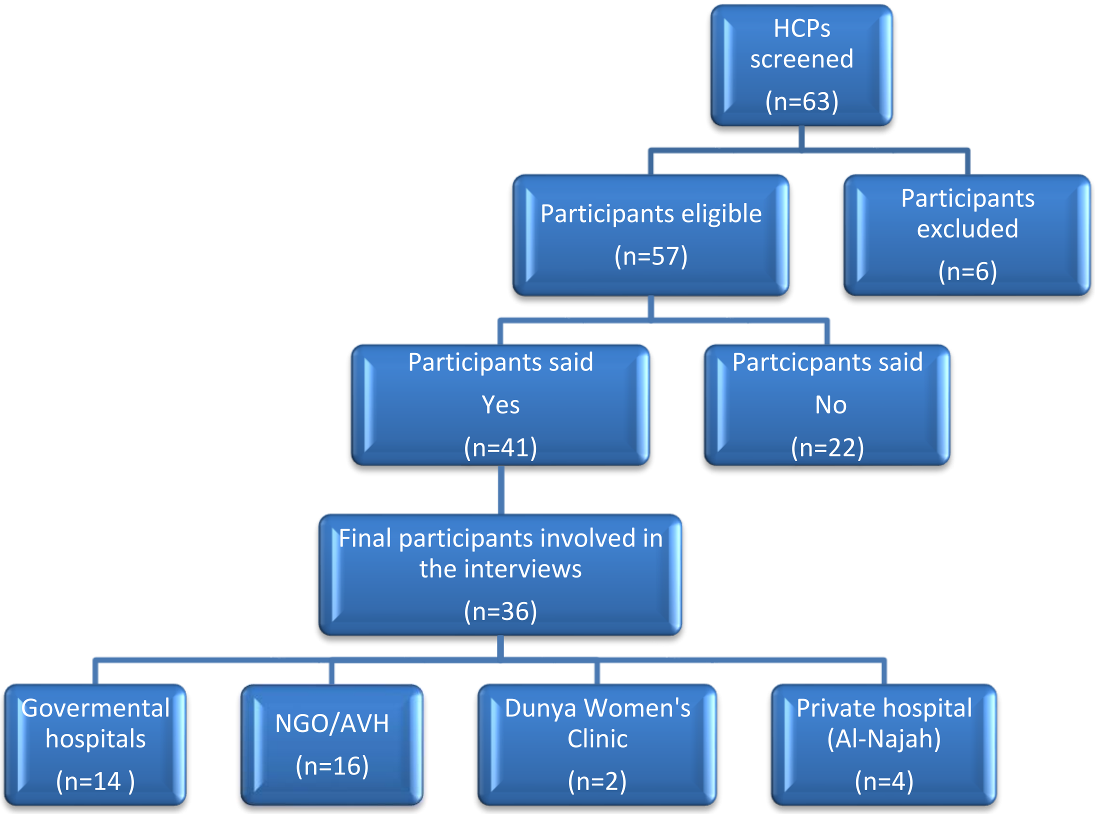


Figure 4.8 Flow diagram of HCP participants screened, approached and recruited

4.6 Procedure of data collection (interviews)

I conducted the interviews, as previously stated, in Arabic (colloquial Palestinian) between February and May 2018, because it made for easier communication and helped me get more in-depth responses; interviews were also transcribed in Arabic and then translated into English.

Interviews typically lasted for an hour on average (ranging from 45 minutes to 2 hours). Once the participant arrived at the venue, I introduced myself and gave the participants the opportunity and time to ask questions. I provided them with another copy of the information sheet (PIS) (Appendix **i**) to facilitate discussion before starting the interview.

Participants were fully informed that participation was voluntary and they gave consent before beginning the interview (Appendix **iii**). At the beginning of the interview, I asked the women's group questions exploring their demographics (Appendix **v/1**), including age, religion, marital status, employment status, living environment, time since diagnosis of breast cancer, type of surgery, co-morbidities, how they evaluated their health status and their level of physical activities compared to before breast cancer. Then, I asked them to tell me about their PA level during the past week, using the Arabic version of the International Physical Activity Questionnaire (IPAQ)/ (Appendix **v/2**). After we took a break I started again, asking about their current health status and how they evaluated it, comparing to before being diagnosed with breast cancer and during breast cancer treatment. Then, I began to work through the topic guide (Appendix **v/3**). Same was for HCP participants (Appendix **vi/1 &2)**.

During the interview, I listened to the participant's responses, trying my best to be non-judgmental in any response, and avoid demonstrating any bias. I tried to use relaxed body language (not frowning or nodding), as positive or negative responses to comments made can convey approval or disapproval and might influence the data gathered (King and Horrocks, 2010). Also, I tried to reflect back content and use short neutral verbal responses (such as ''that's interesting'', "Please say more about that", "Can you give me more details?" and "What is it about...? ") as part of the process of developing questions (Agee, 2009). These are all skills which I had previously developed through professional development about qualitative interviewing, as well as practising in advance. Moreover, through reflection on the interview process I was able to recognise some of the personal feelings that occurred during the interview, as many women felt motivated to speak about their challenges when I shared with them that my interest in this research started after I lost my father to lung cancer. This is explained in the literature as the potential experience of participants of "being and not being heard" (Gubrium, 2012).

At each interview, the participant's voice was recorded during the session using an Olympus WS-550M digital voice recorder. I observed each participant while they were talking and took some field notes during each interview. Also, I wrote reflective notes after each interview.

Upon completion of the interview, the participant was thanked for taking part in the study and asked for any additional feedback. All participants were aware that this study formed part of a doctoral thesis and that their information would be used anonymously for this.

4.7 Data storage

All data were collected, processed and stored according to the (General Data Protection Regulation, 2016 In accordance with the study protocol, all research data were anonymised within 12 months of the end of the study . All data stored about any of the participants has to be shared with them upon request. No such request was received before the data were anonymised. All information was transferred into electronic documents, saved on the University of East Anglia's central network server (One Drive) within the University's firewall. Files were then deleted from the audio recording devices. Data were secured against unauthorised or unlawful access, accidental loss, and damage in compliance with the (General Data Protection Regulation, 2016)to which University of East Anglia adheres.

No member of the research team had access to the medical history or other clinical or personal information about the participants, except the information they voluntarily provided by filling in the basic information questionnaire and during the interviews. Personal information, such as names, were recorded on the questionnaires and consent forms, while the consent forms also contained additional demographic characteristics. All data were kept strictly confidential and all participants coded with a study number. Notes taken by the researcher and audio recording devices were securely stored at UEA in a locked cabinet only be accessed by the researcher. Participants' data will be destroyed following the end of this PhD, and research data will be destroyed after ten years of research publication as per (UEA) policy.

4.8 Data analysis

Data analysis was conducted by me, the principal researcher using the theoretical framework developed in the systematic review study, essential for answering the research questions (Fram, 2013; Palmer, 2010). Thematic analysis is a flexible, and increasingly popular method of qualitative data analysis (Braun and Clarke, 2006). The analysis chosen for this exploratory study was a hybrid approach of thematic analysis, as it incorporated both the deductive a priori template of codes approach outlined in the systematic study and the data-driven inductive approach (Fereday and Muir-Cochrane, 2006). Thus, I used this deductive thematic analysis approach to explore recurring and relevant patterns within the four preliminary codes and themes from the systematic review in Phase One of this research. Themes were then further clustered and were assigned succinct phrases to describe the meaning that underpinned the theme. Furthermore, many qualitative analytic strategies rely on an approach called "constant comparative analysis", originally developed for use in the grounded theory methodology of Glaser and Strauss (Glaser, 1965). However, I did not follow this method rather I used the constant comparative analysis as a technique (Fram, 2013) as this can be used to identify broad themes and patterns or categories that emerge from qualitative research. Thus, the precise nature of each individual's view can be captured and recalled, and data can be presented in a logical sequence in relation to the research questions addressed in the study (Hewitt-Taylor, 2001). Using an adaptive constant comparative analysis in this qualitative study was a strategy to find a more "systematic and thorough way" to analyse the data. Contributing to identifying factors affecting PA participation among a specific group of Palestinian women as an example of Middle Eastern Arab Muslim women after breast cancer. It also reduces ambiguities and improves the quality and rigour of data analysis, as the findings of qualitative research offer a deeper understanding of the complexities of human experiences (Vaismoradi et al., 2016). Through this, it was possible to uncover meanings and I found the process can be used to find consistencies and differences, with the aim of continually refining concepts and theoretically relevant categories (Fram, 2013).

Also, I made continual reference to the transcript to check for comparisons, similarities and differences between emerging themes. This enabled continuous cross-checking between the coding and the source of the data. I gained new knowledge as a novice researcher from using an adapted form of the constant comparative analysis as a technique, understanding how to identify patterns in the data and to organise large amounts of data. The deductive thematic analysis approach was used to make sense of the data and to reduce and handle large volumes of data (71 interviews: 35 interviews with women after breast cancer and 36 interviews of HCPs). Through this process, it was possible to identify clearly how themes were generated from the raw data to uncover meanings in relation to study participants (Fereday and Muir-Cochrane, 2006).

Throughout the analysis for this exploratory study, I followed the process described below. The data collected from each set of participants were analysed separately to ensure a comprehensive exploration of the themes arising from each group. Although presented as a linear, step-by-step procedure, the research analysis was an iterative and reflexive process. This interactivity, applied throughout the process of qualitative inquiry, is described by Tobin and Begley (2004) as the overarching principle of “goodness.”

Step one: After I finished phase one (systematic review) analysis I formulated codes which I used as tags to identify concepts, themes, and meaningful patterns to represent the research questions. The categories derived from each data collection method were then clustered around each research question they contributed to answering.

Step two: Then, I used the theme category, encompassing the research purpose, to mark text in the interview transcripts of phase two to identify subcategories and emerging themes. I used different colours, corresponding to the subcategories.

Step three: I started independently reading the interview transcripts as well the demographic information as a whole, in an attempt to gain a general understanding of what the participants expressed regarding all the factors that might affect PA participation among Palestinian women after breast cancer as well as factors affecting PA promotion by HCPs **(Appendix vii/viii)**.

Step 4: During analysis, I summarized the transcripts separately by outlining the key points made by participants (noting individual comments) in response to the questions asked. These key questions formed the framework for the semi-structured interviews. This process of analysis was carried out systematically, incorporating a degree of intuition, perhaps due to familiarity with the data and the subject matter. Still, this was a difficult process of close reading, re-reading, analysing, and going back and forth among interview data. Although the principals of deductive thematic analysis were used in the analysis of this exploratory qualitative data according to systematic review themes, however, the analysis was guided, but not confined as new themes have emerged according to similar codes. With further analysis of the text at this stage as during the coding of transcripts, inductive codes were assigned to segments of data that did not fit with others previous groups/patterns of codes and were considered their categories such as those pertaining to the Palestinian situation.

Step 5: Further, I re-read the previous stages of the process before undertaking further analysis to ensure that the developing themes were grounded in the original data for all the analysis stages in this exploratory study. The primary objective for data collection was to represent the subjective viewpoint of both the Palestinian women after breast cancer and the oncologist HCPs nurses who shared their experiences and perceptions of factors affecting PA participation among women after breast cancer who lived in the oPt.

Step 6: Then, final themes were presented to members of the supervisory team for more review and discussion, supported by anonymised quotes from the different participants. Although I did the initial analysis as the main researcher, I was assisted by regular meetings with my supervisory team in the UK (Dr Jane Cross and Dr Sarah Hanson), as well as sending the findings to my local supervisor at Al-Quds University (Dr Asma Imam) for cross-checking and interpretation of the data **(Appendix viii/ix/x).**

Step 7: The second checking of themes from data is well-advised (where feasible) to enhance the face validity of the work and to demonstrate reliability (Austin and Sutton, 2014).

Thus, all transcripts were verified firstly by me, as I was listening to the recordings and comparing them with the transcripts. Then, I sent samples for the local supervisor, bilingual in Arabic and English, for checking to increase the validity and trustworthiness of data collected. Then, I sent all the chosen quotes in Arabic and English to my local supervisor for a peer review, and discussion to give greater validation for the translation.

Finally, although manual mapping was done by me, management of the data was aided using NVivo 11.

4.9 Summary

This chapter has elaborated on phase's two methods, data collection, and discussed analysis techniques. Data presentation, results, findings and discussion of this qualitative study will be presented in the next chapter (5).

Chapter 5: Findings of the Exploratory Study

(Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals in the Occupied Palestinian Territories)

Abstract

Purpose: To gain an understanding of the factors that influence physical activity participation among Palestinian women after breast cancer from their perspective as well as what might affect physical activity promotion by oncology health care professionals who works at the oPt.

Methods: Qualitative exploratory study using semi-structured interviews with 35 Palestinian women and 36 oncology HCPs who works at oncology institutions at the oPt including Oncologists, surgeon, nurses and physiotherapist.

Analysis: Deductive thematic analysis was used based on the previous systematic review study with an adaptive constant comparison approach to examine the main themes arising from the interviews.

Results: Factors affecting physical activity among Palestinian women are described in four main themes and 12 subthemes: Daily living with breast cancer; Female identity; Changing identities; and Promoting physical activity.

Conclusions: This exploratory study highlights the specific roles of culture, family priorities, self-image and geopolitical living situation as negatively influencing physical activity participation among Palestinian women. The responses highlighted what they describe as Palestinian women's triple captivity: to the cancer consequences, to a patriarchal hierarchy and Israel's occupation. While religion was one of the facilitators for being active after breast cancer.

5.1 Introduction

In chapter 4, I described the steps I followed in conducting, reporting and writing up the exploratory qualitative study. In this chapter, I will present the findings of the exploratory qualitative study. Adopting a two-phase design, the findings of the data collected in this phase followed the thematic analysis findings of phase 1. I will first present the demographic and characteristics of the participants - both the Palestinian women after breast cancer group and the HCPs in the occupied Palestinian territories. Then, I will demonstrate the qualitative thematic analysis findings. Finally, I will present participants' quotes for each theme from each group's perspectives.

5.2 Data presentation

5.2.1 Palestinian women after breast cancer group

Here I present the demographic characteristics for 35 Palestinian women after breast cancer participants.

Demographic characteristics of Palestinian women after breast cancer group

I used the data provided from demographic questions to describe Palestinian women after breast cancer participants in terms of age, living environment, number of people they had to take care of, level of education and employment status.

I asked them to self-evaluate their current health status and any co-morbidities, the type of surgery they received and duration since diagnosis of breast cancer. Then I asked their current level of PA participation.

The women's ages ranged between 30 and 70 years. The majority (n=24) were married, four were widowed, two were divorced, and five were single. More than two thirds (n=26) had children, and the number of children per participant ranged from 2 to 7.

The women cared for between 0 to 7 people, including children, husbands, mothers or fathers. They were living in different settings: 11 in cities (urban), 14 in villages (rural), 9 in refugee camps (rural) and one in a Bedouin community in the Palestinian territories (30 from the West bank and 5 from Gaza). Their highest educational level ranged from primary schooling (i.e., 9th grade) to a second university degree (i.e., graduate studies). Four participants had completed 6-9 years of school, 22 had completed 12 years of school (high school), and two participants had obtained a post-school diploma (i.e., community college). their bachelor's degree university education, and 2 participants had a master's degree. Participants' religion, were 33 Muslim and two were Christian. I could not recruit women from other faiths, such as Jews or Druze, as they have access to Israeli hospitals and the Palestinian Ministry of Health has no records for them.

Table 5.10 Summary of the demographics of the Palestinian women participants

Total sample characteristics of interviewed women	(N=35)	Percentage
Age		
30-39	6	17%
40-49	10	28%
50-59	11	32%
60-69	7	20%
70	1	3%
Marital status		
Married	24	69 %
Divorced	2	6 %
Widowed	4	11%
Single (never married)	5	14%
Living status		
Alone	1	3%
Living with others	34	97%
Caregiver		
Yes	24	69%
No	11	31%
Number of people to take care of (children, spouse, parents)		
0	11	31%
1-2	2	6%
3-5	8	23%
6-8	14	40%
Region of residence		

Northern West Bank	10	29%
Centre West Bank (including Jerusalem)	8	23%
South West Bank	12	34%
Gaza Strip	5	14%
Type of locality		
Urban (city)	11	31%
Rural (village)	14	40%
Refugee camp	9	26%
Bedouin community	1	3%
Education level		
Primary or below (1st to 9th grade)	4	11%
High school (12th grade)	22	63%
Secondary (community college or university)	7	20%
Post-Graduate (master's degree)	2	6%
Employment status		
Never worked (housewife)	19	55%
Was working (stopped after breast cancer)	12	34%
Still working	4	11%

The majority of women were not working outside the home before being diagnosed with breast cancer. Four women, working before their cancer diagnosis, were still working. The remainder (12) had either stopped or were on sick leave due to the consequences of breast cancer. Most women chose to go on medical leave during breast cancer treatment and preferred either early retirement or to stop working after treatment.

Health status characteristics of Palestinian women after breast cancer group

Almost half the women participants (15) reported they did not know which stage of the breast cancer they were in when first diagnosed; 10 participants reported being diagnosed with Stage I breast cancer, eight at Stage II, and two at Stage III. I did not include any participants diagnosed with advanced breast cancer (Stage IV), as they did not meet my inclusion criteria.

All participants had finished their active treatment but still had to undergo follow-up tests and diagnostic images regularly, according to the post-treatment follow-up guidelines of the Palestinian health care system. All women had surgery (32 mastectomies and 3 lumpectomy), with only 2 having reconstruction surgery. None had double mastectomy. All but one had chemotherapy, and all had radiation therapy sessions; 26 remained on hormone therapy.

One question was added to the interview schedule; what is the dominant side of your body, is it the same side as the affected breast or the opposite? This question came up as most women were complaining that because the surgery was on their dominant side and they had limited ability to do daily life activities, such as household chores and sometimes shopping.

Table 5.11 Summary of the health status characteristics of the Palestinian women participants

Total sample characteristics of interviewed women	(N=35)	Percentage of 100%
Time since breast cancer diagnosis		
6-11 months	17	49%
1-2 years	15	43%
3 -5 years	3	8%
Breast cancer stage		
Stage I	10	28%
Stage II	8	23%
Stage III	2	6%
Unknown	15	43%
Types of treatment received		
Surgery	35	100%
Surgery and chemotherapy	34	97%
Surgery, chemotherapy and radiation therapy	34	97%
Still on hormone therapy	26	74%
Type of surgery		
Mastectomy	33	94%
Lumpectomy	2	6%
Mastectomy + reconstruction	2	6%
Breast cancer associated (with dominant or non-dominant hand)		
Dominant	23	66%
Non-dominant	12	34%

I asked all women to tell me about their current health status compared to before the breast cancer diagnosis and cancer treatment. Fifteen participants reported their health as generally good, and 19 as worse than before diagnosis but acceptable compared to during cancer treatment. One woman reported still feeling week and fragile. I asked them about other co-morbidities they had.

Twenty-seven women out of the 35 participants mentioned they had either one more or more co-morbidity. I asked about their weight and whether it had increased after breast cancer treatment, was the same, or below their normal weight.

Table 5.12 Summary of medical history characteristics of the Palestinian women participants

Total sample characteristics of interviewed women	(N=35)	Percentage of 100%
Current health status		
Good	15	43%
Acceptable	19	54%
Weak	1	3%
Co-morbidities		
No co-morbidities	8	23%
Other co-morbidities	27	77%
Current weight status		
Same as before	22	63%
Increased	8	23%
Decreased	5	14%

Physical activity levels using short form International Physical Activity Questioner (IPAQ-SF)

I asked participants a general question first about what they thought their PA level was compared to before they had breast cancer. All but one reported that they felt their PA uptake and participation was more limited than before their diagnosis with breast cancer, but better than during cancer treatment. There was only one participant who reported that her PA level was almost the same as before breast cancer.

Getting an accurate estimation is complex when assessing physical activity. However, the use of suitable methods to determine the level of PA is important to ensure accurate information is obtained to produce effective intervention programmes (Ahmad et al., 2018).

Several methods have been developed to determine PA levels. These can be divided into two categories, the first is a self-reported measurement, such as the Global PA Questionnaire (GPAQ), the International Physical Activity Questionnaire-Short Form (IPAQ-SF) and PA diary.

The second is a direct measure of physical activity, which includes calorimeter, accelerometer and pedometer usage (Prince et al., 2008). I chose to use the IPAQ-SF which provides a universal instrument that can be used to obtain internationally comparable data on health-related physical activity; it is suitable for adults between 15 and 69 years of age and is primarily used for population surveillance of PA levels (Stelmach, 2018). The IPAQ was first published with its validation based on a 12-country sample, and the authors recommended using the short form which measured PA by self-report over the previous 7 days (Craig et al., 2003). In the Arabic world, the IPAQ instrument has been tested by several researchers (Al-Hazzaa, 2007).

The modified Arabic version of the IPAQ showed acceptable validity and reliability for the assessment of PA among Lebanese adults (Helou et al., 2017). Palestinians and Lebanese people exhibit enough similarities in terms of language (Levantine Arabic) and social, cultural, and ethnic homogeneity and intermingling: "Bilad al-Sham / the former Ottoman province, encompassing contemporary Syria, Lebanon, Jordan and Palestine" (Hudson, 1997). Thus, I have used the validated Arabic version of the (IPAQ-SF) with all the Palestinian women participants (Appendix v/2).

I explained to the participants that I wanted to ask them about their PA participation during the last 7 days reporting time spent in PA performed across leisure time, work, domestic activities and transport at 3 different intensities: walking, moderate and vigorous. Examples of activities that represent each intensity were provided: for example, participants are asked about vigorous activities such as “heavy lifting, digging, aerobics.”

Results can be reported in two ways when scoring the IPAQ: either in categories (low activity levels, moderate activity levels or high activity levels) or as a continuous variable (MET – metabolic equivalent minutes a week) where MET minutes represent the amount of energy expended carrying out a physical activity.

The items in the short IPAQ form are structured to provide separate scores on these activities. Computation of the total score requires the summation of the duration (in minutes) and frequency (days) of these activities (IPAQ scoring protocol - International

Physical Activity Questionnaire, 2005). According to the guidelines for data processing and analysis of the International Physical Activity Questionnaire (IPAQ) - Short and Long Forms: a) any responses to duration (time) provided in the hours and minutes response options should be converted into minutes. Both the numbers of days and daily time are required for the creation of categorical or continuous summary variables (IPAQ scoring protocol - International Physical Activity Questionnaire, 2005); b) If there are “don’t know” responses or data are missing for time or days, then that case is removed. However, as a researcher, I asked all of the participants about their level of PA for the last 7 days, so there was no missing data (IPAQ scoring protocol - International Physical Activity Questionnaire, 2005).

The sitting question in IPAQ short form

The IPAQ sitting question is an additional indicator variable of time spent in sedentary activity and is not included as part of any summary score of physical activity. Sitting time for the total week, weekdays and weekends were obtained by averaging over the daily values (Chastin et al., 2014). To date, there are few data on sedentary (sitting) behaviours and no well-accepted thresholds for data presented as categorical levels. Thus, data on sitting should be reported as median values and interquartile ranges (IPAQ scoring protocol - International Physical Activity Questionnaire, 2005).

For the purposes of this study, I have used total minutes to classify respondents when categorising as low, moderate and high according to IPAQ-SF (IPAQ scoring protocol - International Physical Activity Questionnaire, 2005), as this makes it easier to compare with the international data.

Physical activity categorical score (IPAQ scoring protocol - International Physical Activity Questionnaire, 2005)

Category 1 Low

This is the lowest level of physical activity. Those individuals who not meet criteria for Categories 2 or 3 are considered to have a 'low' PA level.

Category 2 Moderate

The pattern of activity to be classified as 'moderate' is either of the following criteria:

a) 3 or more days of vigorous-intensity activity for at least 20 minutes per day

OR

b) 5 or more days of moderate-intensity activity and/or walking for at least 30minutes per day

OR

c) 5 or more days of any combination of walking, moderate-intensity or vigorous intensity activities, achieving a minimum total PA of at least 600 MET-minutes/week.

Category 3 High

A separate category labelled 'high' can be computed to describe higher levels of participation. The two criteria for classification as 'high' are:

a) vigorous-intensity activity on at least 3 days, achieving a minimum total PA of at least 1500 MET-minutes/week

OR

b) 7 or more days of any combination of walking, moderate-intensity or vigorous-intensity activities, achieving a minimum total PA of at least 3000 MET-minutes/week.

The next tables will present a summary of the results of the PA levels for the Palestinian women participants, using the validated Arabic version of the short form of International Physical Activity Questionnaire (IPAQ-SF).

Table 5.13 Categories of physical activity for Palestinian women after breast cancer

IPAQ Category	Meaning	No of women (35)	Percentage
Category 1 Low	No high or moderate intensity at all/no walking to less than 30 minutes per day	24	69%
Category 2 Moderate	No high but moderate intensity/walking for at least 30 minutes per day	11	31%
Category 3 High	7 or more days of any combination of walking, moderate- or vigorous-intensity activities	0	0%

Table 5.14 Overview of physical activity levels of Palestinian women after breast cancer group using IPAQ-SF in minutes

Type of Physical Activity	Mean in Minutes
Walking activity	**25 minutes**
Moderate activity	**44 minutes**
Vigorous activity	**0 minutes**
Total minutes per week sitting activity	**338 minutes**

Walking was by far the most popular PA among all Palestinian women, but still not daily, 5 participants reported that they did not walk at all, while the mean average for all participants was about 25 minutes of walking per day, with a median from 0 minutes up to 45 minutes. The mean sitting time was about 338 minutes per day (i.e., more than 5.5 hours). The median reported for sitting time was interestingly varied by age group, as most Palestinian women participants in their 30s and 40s reported that they would spend 180 minutes sitting (3 hours), while older women in their 50s and 60s in this study spent up to 720 minutes (12) hours daily sitting which I will explore further in the discussion section.

5.2.2 Health care professional participants' characteristics

Demographic characteristics of health care professionals' group

I used the data from demographic questions to describe HCP participants in terms of age, gender, place of work, and whether they had specific training to work with cancer patients or not.

I interviewed 36 HCP participants. Their ages ranged between 25 and 62 years; there were 20 males and 16 females. They worked in five main oncology settings in the Palestinian territories, covering different health care sectors and all institutions with oncology departments in the West Bank. Their specific specialities were 9 oncologists (medical/ radiation or palliative oncologists), 3 surgeons, 2 GPs (resident at an oncology outpatient clinic), 16 nurses and 6 physiotherapists. The majority (21) had received a local education at Palestinian education institutions, while 3 were educated in Arab countries and the remainder (12) had their medical training at international universities, including Israeli universities and hospitals. See a summary of HCP participants' characteristics in the next table (5.15).

Table 5.15 Characteristics of health care professional participants

Total sample characteristics of interviewed HCPs (N=36)		Percentage
Age		
20-29	4	11%
30-39	10	28%
40-49	14	39%
50-59	6	17%
60-69	2	5%
Gender		
Male	20	56%
Female	16	44%
Work speciality		
Oncologist	9	25%
Surgeon	3	8%
GP	2	6%
Nurse	16	44%
Physiotherapist	6	17%

Education level		
Diploma (two years after high school)	5	14%
Bachelor (BSc)	29	81%
Speciality	2	5%
Education country		
Local (Palestine) universities	21	58%
Arab universities	3	8%
International (including Israel)	12	34%
Work institutions		
Governmental hospital/cancer wards	16	44%
NGO/Augusta Victoria Hospital	14	39%
Private sector (Al-Najah University Teaching Hospital)	4	11%
Work Health Committee (Dunya Women's Cancer Centre)	2	5%
Special education / training in cancer		
None	8	22%
Local /Palestine	14	39%
Arab country	2	5%
International (including Israel)	12	34%
Experience of working with cancer		
1 year	3	7%
2-5 years	11	31%
6-10 years	11	31%
+10 years	11	31%
Number of women treated for breast cancer per month		
Less than 10	2	5%
Between 10 and 30	8	22%
Between 30 and 50	20	56%
More than 50	6	17%

I asked all HCP participants to tell me about their experience of working with cancer, which ranged from 1 to 30 years (mean 11 years). Of those, 28 HCPs had specific training in cancer care with a certificate; while 8 had an experience of a year or more of cancer care without further training. When I asked HCP participants about how many women with a diagnosis of breast cancer they treated per month, they answered that the majority of their cancer patients have breast cancer. However, it ranged from less than 10 to more than 50 women per month. This variation related to the gender of the HCP specialist. All the oncologists and surgeons in the West Bank are male, and so they are the ones responsible for evaluating, treating and following up women who have had a diagnosis of breast cancer.

However, there were both male and females' nurses and physiotherapists who assigned mostly to patients of their own gender. However, I recruited 2 male physiotherapists and 3 males' nurses' participants mainly working with women after breast cancer surgery in inpatient wards of hospitals.

5.3 Process of analysis

Seventy-one transcripts of interviews lasting from 30 -90 minutes were generated. The method of analysis chosen for this exploratory study was a hybrid approach of thematic analysis, incorporating both the deductive, a priori, template of codes approach outlined in the systematic study and a data-driven inductive approach (Fereday and Muir-Cochrane, 2006). I used this approach to explore recurring and relevant patterns within the four preliminary codes and themes from the systematic review in Phase One of this research (chapter 3). Themes were then inductively identified and assigned succinct phrases to describe the meaning that underpinned the theme.

5.4 Findings

These were the key themes: Daily living with breast cancer; Female identity; Changing identities; and Promoting physical activity (Figure 5.9).

Each theme is described in overview and then discussed to provide context and illustrated by original quotations. These quotations are intentionally not rigorously edited in their English translations to try to preserve the original meaning and the structure given by participants.

All participants self-identified as native Arab Palestinian. Women are identified by their reference number and age e.g., WABC 1, 37; WABC 2, 45. HCPs are presented as their reference number, their job and gender as HCP1, Nurse, M; HCP2, Oncologist, F etc.

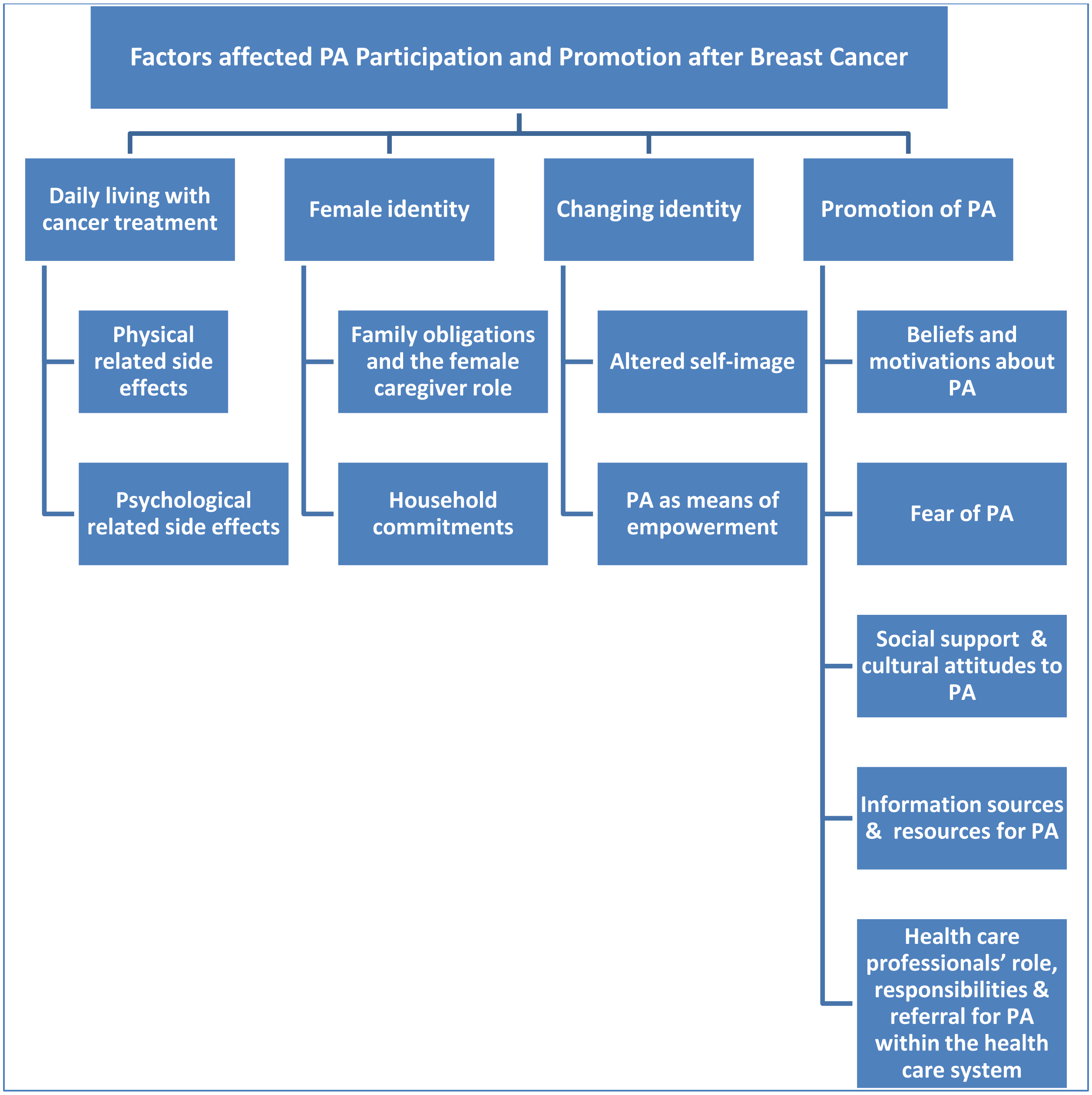


Figure 5.9 Flow diagram of themes and sub-themes of findings of the exploratory study

Theme 1: Daily living with cancer treatment side effects

Specific breast cancer treatment-related side effects were reported by the majority of participants as a daily struggle of coping with either the physical or psychological consequences, which had a negative impact on their participation in PA. Furthermore, HCPs illustrated that their cancer patients' health status might affect their decision to promote PA to them.

Physical related side effects

Most Palestinian women reported they were physically struggling with the consequences of side effects related to breast cancer treatment.

Pain was the most commonly reported, which might be pain not attributed to a cause of musculoskeletal pain, neuropathy, or pain caused by lymphoedema. Whatever the reason, pain was a barrier that either prevented women from engaging in PA or negatively affected their participation in it:

> ***"I do suffer from pain and a limitation in movement of my right shoulder due to right breast mastectomy and removal of many lymph nodes. The pain increases when I tried to do exercises or do any kind of physical activity. The result is that I cannot regularly move because of the pain as it increases when I even do housework." (WABC 15, 49 Y)***
>
> ***"Since the surgery, I feel pain, numbness and heaviness in my right hand which does affect my daily life activities and pursuing my hobbies as decoration and embroidery, especially after developing lymphoedema in my right arm." (WABC 18, 40Y)***
>
> ***"The main reason that prevents me from exercising or doing physical activities is physical pain. I do feel pain all over my body, and especially in my bones. I have back and knee pain before and I think that chemotherapy and hormone therapy have adversely affected my bones." (WABC 17, 55Y)***

Fatigue was also reported frequently by most participants. 24 women described how they felt constant tiredness after breast cancer treatment, which was a huge barrier for them to be physically active. Some mentioned that they were exhausted from even carrying out the routine daily life activities they were doing before breast cancer, and this was preventing them from engaging in any regular physical activities.

> ***"I feel that my overall physical abilities have declined. I have less endurance for everything. I feel tired quickly. Of course, this affects my daily activities."(WABC 22, 39Y)***
>
> ***"Fatigue is one of the main factors that prevent me from exercising. I feel tired all the time or most of it." (WABC 28, 52Y)***
>
> ***"I do need more effort and time to perform any activity, even if it's inside the home because of the fatigue and exhaustion I feel after chemotherapy." (WABC 11, 67Y)***
>
> ***"I feel tired very quickly, especially when doing some physical activities such as climbing stairs. I have never felt these symptoms before having breast cancer and this really affects my physical activities, especially outside the house. This started since chemotherapy and it continues till now and I do not know for how long more I will suffer." (WABC 15, 49Y)***

Some women (5) reported that lymphoedema prevented them from doing their activities of daily living. This not only affected their indoor activities but also negatively impacted on their outdoor and social activities:

> ***"To be honest with you, the main factor that prevents me from doing any kind of PA is that I still suffer from pain, especially in my right arm as I developed lymphoedema which also irritates. Mostly, I do not like to go outside home as I feel embarrassed from my arm size." (WABC 10, 43Y)***
>
> ***"I am suffering from an inability to move my right arm. There is also a 5 cm difference between my arms due to lymphatic oedema. This affects my body movement as I used to do all things out with the affected arm in the past. I feel the weakness in all my body and that's prevented me from engaging in any physical activity." (WABC 29, 70Y)***

Many Palestinian women reported that they were not physically active before being diagnosed with breast cancer due to other illnesses or their health status. 27 women reported having one or more co-morbidities, such as diabetes mellitus (DM), hypertension (HTN), osteoporosis, osteoarthritis (OA) and low back pain. Having more than one co-morbidity had a negative effect on their level of PA before they were diagnosed with breast cancer, and afterwards, this was worse, demonstrating lower levels or limited PA participation:

> ***"The pain increases when I tried to exercise or do any kind of physical activity. I have suffered from low back pain and osteoarthritis in my right knee for years, and the pain has increased after I gain weight since I started the hormone therapy. It's a big challenge for me to be active as before having breast cancer." (WABC 17, 55Y)***

> ***"I do suffer from numbness in my right arm and both feet. It started after chemotherapy. Some nurse told me it's normal to have this complication as I have diabetes before, and it seems that chemotherapy had worsened my health status. I cannot hold things well, either feeling good when I walk. The result is that I cannot do exercise or move more because of this numbness unpleasant feeling." (WABC 11, 67Y)***

From HCPs' perspective, the most common factor hindering their promotion of PA was the health status of their cancer patients. HCPs stated that they would evaluate if the women had other health problems, whether it was one of the common physical related side effects or other health problems. Thus, having multiple side effects and/or other current health co-morbidities negatively affected the HCPs' decision to promote or recommend physical activity. Furthermore, HCPs identified that physical side-effect associated with cancer treatment as one of the main barriers for these women to become active.

HCPs mentioned that when recommending PA to cancer patients, those who had co-morbidities used this as an excuse not to participate in any kind of physical activities.

> ***"You know when I recommend PA to patients after cancer treatment; many do not commit much to PA instructions, especially those who had chronic pain before cancer such as if they back pain, knees osteoarthritis, osteoporosis, and any other health conditions which make it harder for them to be active as before. Therefore, women will start to speak about their health status as an excuse for not doing any physical activity." (HCP 8, oncologist, M)***
>
> ***"Most of our Palestinian women after breast cancer feels exhausted most of the time and some mentioned they have other health problems which affect their physical abilities. That's one reason they are not active as much as they should and that's why I don't recommend them to do a specific kind of physical activities with specific time and intensity, rather than instruct to be active as possible according to their health status." (HCP 5, PT, F)***
>
> ***"The side effects of the cancer treatment and the complication afterwards such as spinal cord compressions, fatigue, and sometimes osteoporosis after long use of hormone therapy can act as barriers for women to do any kind of physical activities and for me as an HCP to recommend it, as I think they are still not that fit for PA participating." (HCP 10, nurse, F)***
>
> ***"I do assess their overall health status before I consider when to promote PA to them." (HCP 5, oncologist, M)***

> ***“To be honest, I take into consideration all the related side effects after cancer treatments when recommending physical activity, such as related fatigue and exhaustion and that’s affecting the amount of instructions I gave.” (HCP 18, PT, M)***
>
> ***“One of the barriers for me to promote PA is what the cancer patients suffer. For example, I recommend exercise to all women if they had lymph nodes removal. Still, I cannot promote PA without taking into consideration their health status. Many cancer patients have other health conditions. They are asking for pain killers most of the time and do not do enough exercise due to these conditions which can really affect their daily life activities.” (HCP 3, surgeon, M)***

Another factor influencing PA participation reported by both Palestinian women and HCPs was the environment in which to participate in any kind of physical activity.

Several Palestinian women after breast cancer reported that many of their daily life activities depend on the political situation where they lived and whether they could go outside the home or not. Repeated incursions into the West Bank continue to negatively affect the outdoor activities of the Palestinian population (UNRWA, 2020). Some women (14), especially those living in Area C of the West Bank, declared that the presence of the Israeli checkpoint at the entrance of their village or refugee camp negatively affected their daily life activities, especially outdoors. Palestinian women reported they did not feel safe to walk around alone or with their children in case there was a periodic escalation of violence, as their current health status might prevent them from running to escape this fearful situation. Furthermore, nine Palestinian women who lived in the refugee camps, from both Gaza and the West Bank, discussed how they did not have enough space to do indoor exercise because their homes were so small. Also, they mentioned that the infrastructure at the refugee camp was not ideal for walking, even for healthy people. So, those women did not have any space to do any kind of physical activities inside or outside the home.

> ***“I do live in a refugee camp and my family do not prefer that I go out for walking for a number of reasons, including the unstable political conditions in Palestine as which we cannot predict when the Israeli soldiers will attack the camp.” (WABC 10, 43Y)***

> ***“We live in a refugee camp. We are still under the control of the Israeli authorities as we live in Area C. Because of this, we do not feel safe to walk in the area. I cannot go out and leave my children alone or take them out with me.” (WABC 18, 40Y)***
>
> ***“We don’t have any gym facilities here in the area and if I want to go to the city, then I should pass one military checkpoint, therefore, my husband or someone had to be with me all the time and that’s not possible. That’s why I don’t go outside home very often and prefer to stay inside.” (WABC 17, 55Y)***
>
> ***“I live in a refugee camp, there is no space for me to do any kind of exercise. You know, sometimes I try to go up and down stairs several times. That’s the only option I can do exercise inside doors. I can’t walk, especially outside the house where the roads are narrow and not straight. This represents almost all of the camp's roads.”(WABC 10, 43Y)***

In Gaza, where the Israeli blockade means constant electricity cuts and water problems, all women in this study (5) said their daily life activities were scheduled according to when the electricity and water were available and that this was their main priority.

Thus, the political and financial constraints and living conditions were daily factors affecting the Palestinian women and their PA uptake and participation and increased their vulnerability after breast cancer.

> ***“You know; in Gaza, you cannot plan for any regular activities as sometimes I will wake up in the middle of the night to wash things when the electricity comes back.” (WABC 33, 51Y)***
>
> ***“I had to leave Gaza Erez Checkpoint alone for my follow up appointment at AVH Jerusalem, as Israeli did not give a permit for anyone of my family for political reason. It was a difficult and tiring experience, the amount of fear, helplessness and insecurity is indescribable.” (WABC 13, 50Y)***

HCP participants also recognised the negative effect of the political situation and the Israeli control over some areas such as Area C, refugee camps and Gaza in promoting physical activity. For example, instead of spending time recommending PA to their cancer patients, those patients would be asking about a permit to come for the next follow up meeting for them as well as for their families. HCPs who still reside in Area C of the West Bank, or even those who lived or were living in refugee camps under Israel's control, spoke of their vulnerability and reported that they could not go outside on days of curfews or during clashes, as it was not safe to be outside. Therefore, the unstable political situation in the Palestinian territories and the unsafe surrounding environment negatively affected PA promotion to cancer patients, especially women after breast cancer.

> ***"Israeli control over different Palestinian areas, the checkpoints affect even my job as an oncologist. Instead of discussing important things with my cancer patients, I have to discuss with them the permit issue, for how long and how many people are allowed to have this permit and I have to write a detailed report explaining their health status so that they can have an excuse not to be exposed at some checkpoints, etc." (HCP 20, oncologist, M)***
>
> ***"Well, from my experience, women live in area C under the Israeli control they can't go out on a regular walk as it's not safe for them to be outside. Therefore, some families and women prefer to stay at their houses and not getting out so often, especially after cancer treatment." (HCP 22, oncologist, M)***
>
> ***"There is a difference in the lifestyle of women from Gaza comparing to women in West Bank as they lived a big siege and it's not safe to go outside in certain places and hours due to continuous Israel closure and attacks of either snipers or airstrike." (HCP 13, nurse, F)***
>
> ***"Cancer patients from Gaza have extra challenges to be active as they are profoundly affected of the security regulations that both Hamas and Israel have imposed on Gaza's residents; as there are areas that are highly dangerous to be around and on the time of Israeli attacks, you cannot go out which is happening so often. Therefore, it slows down treatments and the healing process as well as their PA participation, especially women." (HCP12, nurse, F)***

Interestingly, two HCP participants in this study mentioned that the Israeli military occupation affects people's movements and activities, whether it was social, physical or their accessibility to reach medical centres, gyms, sport etc. But this does not affect Palestinian people's awareness of the benefits of PA to them.

> ***"Well, Israeli military occupation does affect people movements whether it is via checkpoints, not having radiation units at all hospitals and sometimes having a restriction on chemotherapy drugs. Besides, feeling not safe all the time does affect women to be outside their homes, especially in Area C, but it does not affect people's awareness regarding early screening or the importance of being active when you have cancer!" (HCP21, oncologist, M)***

Psychological related side effects

Psychological related side effects, including depression, stress and anxiety, were reported by the majority of the women, 24 participants expressed that they suffer from stress and anxiety, which was a barrier for them to be physically active. Palestinian women reported several aspects of stress which posed a challenge to be engaged regularly in physical activities after breast cancer. First, the utterance of the word “cancer” itself was very dramatic. It was avoided by many Palestinian cancer patients, including women with breast cancer, as the term (cancer) still arouses the fear of death (Albarghouthi and Klempe, 2018). Second, they reported the response of pity towards young women with breast cancer and sympathy towards their children who would suffer not only because of their mother’s suffering but also because of the expectation of her death. This expectation arose the moment any woman was diagnosed with cancer (Albarghouthi and Klempe, 2018). Given the common association of cancer with death, many Palestinian women worried about the possible consequences their death would have on others, especially young children. Third, women were stressed by potentially being divorced by their husband or that he would marry another woman, especially Muslim participants. Polygamy is permitted in the Personal Status Law in most Arab and Muslim countries, including the occupied Palestinian territories. In Islamic legislation, polygamy is allowed, with certain moral conditions for the practice, as the husband should have the means to support more than one family, and the husband should treat the wives equally in all fields of life, economic, emotional, etc (Roald, 2013). Furthermore, in all Arab communities, including Palestinian society, the right of a husband to divorce his wife without giving reasons, and without a process of law, is maintained and so wives could easily be repudiated, as this is a social custom which asserts and preserves the domination of the male (Hourani and Ruthven, 2013). Although Palestinian women could add conditions to marriage contracts to protect their interests in the event of divorce and child custody disputes, they rarely did so (UN Women | Palestine, 2017). Moreover, 50 per cent of Palestinian women and 63 per cent of Palestinian men agreed that a woman should tolerate violence to keep the family together (UN Women | Palestine, 2017).

Thus, Palestinian women after breast cancer were living with fears and uncertainty, whether it was fear of death, the recurrence of breast cancer, divorce or uncertainty about whether their husband would keep their marriage or choose to marry another woman. Women stated that "few men would stand by the wife if she had breast cancer." This statement was reported by 13 married women in this study, particularly those in their 30s, 40s and early 50s.

> ***"I am always worried about whether cancer will come back. When and where it will be? Who will take care of my young children? That's my most significant fears." (WABC 20, 34Y)***
>
> ***"I suffer from stress, insomnia and overthinking. That does affect my daily life activities. I think about many issues like surviving, overcoming daily obstacles as well as about our financial status. Every day I think that my husband will get married again, and this is another stress and pressure for me to cope with!" (WABC 12, 30Y)***
>
> ***"After I had breast cancer, my husband started to act weird, and we did not have sex for almost two years. He keeps saying that he will get married to a healthy woman. His family are preventing him so far, but that's affecting me and increase my level of stress and anxiety, it's occupying all my thoughts and affecting my daily life activities." (WABC 13, 50Y)***
>
> ***"Since I had breast cancer and my husband trying to save money to get married again. He is so determined to get married. This issue is my biggest worry right now, which negatively affects all my activities inside and outside the house." (WABC 25, 41Y)***
>
> ***"Every day I think about how to improve my life with my husband and the life of my daughter and son after I had the breast cancer and that's my biggest worries. You know my husband wants more children, and I think he will get married again and this is another stress and pressure for me to come up with." (WABC 12, 39Y)***

Almost all Palestinian married women, especially those with teenage daughters (15), reported being anxious about passing the disease on to others in their family. Some women expanded that their worries and fears were of how social stigma might affect their role and status as women, the family's reputation and even the chances of their daughters' future life and marriage prospects. Genetic family illness is considered to cause dishonour and social stigmatisation in some Arab societies, such as Palestinian and Jordanian society (Albarghouthi and Klempe, 2018; Taha et al., 201; 2013).

> ***"I am constantly worried about whether cancer will come back. When and where it will be, are my daughters going to have breast cancer or not, what if no one wants to marry them after!" (WABC 30, 57Y)***
>
> ***"All I think about is my two daughters and if they are going to have breast cancer when they grow up or not, am so worried and stressed" (WABC 18, 40Y)***

Also, seven women reported that they were unable to express openly their negative thoughts about future, anxiety or even that they suffered depression, as this is not accepted in Palestinian society (as not accepting their destiny). Mental illness can be considered culturally and religiously taboo, as many Muslims believe that one cannot be depressed if one is following the Islamic tenets (Hammoud et al., 2005). Many Arabs, at least publicly, will not acknowledge mental illnesses, viewing them as a source of shame and a sign of weakness. They may not even acknowledge the legitimacy of antidepressants. For example, mental illness or depression can be significant for female patients who might experience common conditions, such as postpartum depression, but they cannot declare it (Hammoud et al., 2005).

> ***"After my husband's death due to cancer and having myself a breast cancer at the same time made me always think that I would die after him. I cannot express these feelings openly to everyone because they can say I lost my mind or that I don't have faith enough to accept my destiny." (WABC 11, 67Y)***
>
> ***"All the time I should act strong in front of people, I should look happy and that's exhausted me physically and psychologically because I cannot be open and say I am depressed. That's why I prefer to stay away. Staying at home all the time had a negative psychological and physical impact on me, as I could not go out and be active as before." (WABC 22, 39Y)***

However, some Palestinian women reported that going for a walk and doing some physical activities was an effective way to decrease their levels of stress and anxiety, but this was only three women amongst the 35 participants.

> ***"I go for a walk whenever I can. I think it is a very important way in managing my stress level after I had breast cancer." (WABC 16, 62Y)***
>
> ***"I have grape and olive trees, which I always take care of until the season of collecting grape leaves or olives, and this decreases my stress and keeps me active."(WABC 17, 55Y)***

> ***"From time to time, I go for a walk. I live in a village where we own green olive trees and a place to walk." (WABC 32, 58Y)***
>
> ***"Walking in fresh air gives me a space to think about how my life had changed, and that was a good way of trying to think positively." (WABC 19, 42Y)***

HCPs also described several psychological related side effects that can affect Palestinian women's PA participation, and how HCPs promote physical activity.

Some HCPs (6) recognised that their cancer patients' psychological status might negatively impact their PA participation, especially women after breast cancer. Nurses were most likely to report that women after breast cancer faced many issues including distress, anxiety, depression and feelings of uncertainty, all affecting their daily life activities.

> ***"I can notice that women who have depression or overstressed will be less active and prefer to stay at home and that's negative can affect their PA levels in comparison to other women. For example, married women experience stress and anxiety of being divorced, being abandoned by husband and that her children will lose their mother, the majority of us do empathise with young mothers." (HCP 7, nurse, F)***
>
> ***"Many women after breast cancer treatment suffer from depression, sometimes mental health problems, lack of motivation to fight, and they had social issues which affect further their physical abilities and uptake of physical activities." (HCP 5, oncologist, M)***
>
> ***"Women above 60 years old feels pessimistic and desperate and they don't want to do any activity, some of them will be just waiting to die and mostly they became more religious and attached to spiritual things." (HCP 24, nurse, F)***

HCPs reported that when finding a cancer patient is suffering from a psychological issue, they try their best to refer those patients to a social worker or a psychologist at their institution. However, they face a challenge as the referral process lacks consistency within and between health services due to the fragmentation of the Palestinian health care system. This is exacerbated by Palestinian culture that does not accept a referral to psychological services and believes that the best way is to get support from the family. Studies show that during illness or crisis, Middle Easterners rely heavily on other people instead of trying to cope with other means (Meleis and Sorrell, 1981).

> ***"It is important that all cancer patients receive psychological support because their psychology and mental health status affect their physical health status, especially women after breast cancer diagnosis and treatment. However, family support is the best way for them to cope up." (HCP 18, nurse, M)***
>
> ***"Psychological support is important to all cancer patients and that's why I do refer women after being diagnosed with breast cancer to our psychologist or social worker here at the hospital as they need more attention. I do not know if women will go to a psychologist outside, as some are struggling with reaching those centres as they suffer from shame and they don't want many people to see them, so they prefer to stay inside their homes." (HCP 20, oncologist, M)***

In contrast, religion and faith played a fundamental role in women's acceptance of cancer as part of their destiny, both among the Muslim and Christian women interviewed. The Palestinian women I interviewed reported that performing religious rituals was a source of support initially in coping with being diagnosed with breast cancer, during and particularly after cancer treatment. They reported that religion played a positive role for them to stay active.

Some stated that "being diagnosed with cancer is a test from God" or "a way to decrease person sin":

> ***"I believe that I was being tested from God ...Thus, I am satisfied with what God wrote to me." (WABC 11, 67Y)***
>
> ***"I have faith in Allah and I believe that cancer is not a punishment, rather than a test, which requires acceptance of destiny and patience. They said the person is afflicted with his religion and that's why I am optimistic about my life." (WABC 32, 58Y)***

Likewise, Palestinian women reported having faith in God, and living up to the values and teachings of Islam, helped them to be physically active. They explained that the physical movement that resulted from doing five prayers a day, including walking to the mosque for prayer, helped them remain physically active.

The daily life structure for the majority of Arab/Muslim women is greatly influenced by Islam, and this is noticeable in everyday life of women in all Arab countries. Religious infrastructure informs how Muslims should live and react to cancer and death (Goldblatt et al., 2012; Taha et al., 2012;2013; Elobaid et al., 2014; Al-Khamis, 2016; Madkhali et al., 2019). The majority of the women were Muslims, and 33 said that being a Muslim and following Islamic religious roles was a facilitator for PA and positively affected their daily physical activities, especially outdoors. Thus, some participants thought praying was a way of being physically active.

> ***"Having faith in God (Allah) has helped me to stay strong and to stay active as much as I could. I wanted to be strong in order be able at least to perform the five prayers while standing and not on a chair. There is a cure in prayers." (WABC 25, 41Y)***
>
> ***"After I finished my breast cancer treatment, I started to walk and pray at the mosque whenever I can, and I do ask God in every prayer to reward me and keeping me strong. That's how I am trying to be active, it's almost 20 minutes walking to the mosque beside the prayers." (WABC 30, 57Y)***
>
> ***"Having faith in Islam and reading Qur'an gives me the motivation to wake up every day. I do start my day with dawn (Fajir/early morning) prayer and I try to go and pray (Dhuhr and Asr/midday and afternoon time) prayers at the mosque. I do walk to the mosque as in 'every step I will be rewarded by God' and that what keeps me active I guess." (WABC 33, 51Y)***
>
> ***"I do feel that walking each day have played a crucial role in decreasing some of the symptoms such as feeling fatigued. Thus, I feel that by walking even if only to a mosque that I am stronger physically and have control over my life again." (WABC 11, 67Y)***
>
> ***"You know I started to walk and pray at the mosque whenever I can, and I do ask God in every prayer to reward me by keeping me strong. That's how I am trying to be active. It's almost 20 minutes walking." (WABC 30, 57Y)***
>
> ***"The chance to travel to Mecca with other cancer survivors was the most beautiful journey in my life which gave me the strength and motivation to stay as active as I could. We were encouraging each other to go altogether." (WABC 32, 58Y)***

Women in this study who presented themselves as non-religious before the illness and did not wear the hijab (n=2), reported starting to practice some religious rituals, including praying and going to the mosque, which had given them the motive to be active.

One mentioned she was used to practising yoga, and after she finished her cancer treatment, she started praying as she found some similarities between both practices. The Christian women (n=2) in this study suggested that having faith in Jesus, going to church each Sunday and praying to the Virgin Mary had huge positive health benefits and kept them active.

From the HCPs' perspective, some participants reported that one strategy for them to promote PA to their cancer patients was to use religion and spirituality when communicating and that their medical instructions including PA could be embedded in religion. Ghazal (2018) commented that Islamic praying (Salah) involves a certain level of physical activity, which includes standing, bowing, prostrate and sitting consecutively. The prayer is done by assuming each separate position of the body and reciting various Qur'anic verses with each posture. Each position consists of the movement of different parts of the human body in ways that some muscles contract isometrically and some isotonically, He concluded that prayer movements would enhance flexibility and general muscular fitness. Furthermore, each Muslim is under obligation to perform 3- 5 prayers, involving 119 postures per day that amount to 3750 postures per month and 42,840 postures per year. Thus, prayer is a form of activity that integrates mindfulness, mental precision, affirmation, devotion, and stretching (İMAMOĞLU, 2016). Some HCPs participants mentioned that they encouraged their patients to follow God and to trust his will, which may positively affect their psychological wellbeing:

> ***"I do try to find any source of motivation like talking about faith in God to promote coping and accepting having cancer and then give some instructions like going to pray and so on." (HCP 22, oncologist, M)***

Other HCPs said they promoted PA to their cancer patients in an indirect way, by encouraging them to walk and pray at the mosque to be healthy and active.

> ***"Well, we all know the general popular proverb that says [there are blessings in the movement], so I tried to recommend them to stay active as possible so that God will bless them." (HCP 30, nurse, F)***

> ***"I do recommend my cancer patients to walk daily for the mosque for at least two prayers so that they have daily outdoor activities and try their best to do the other regular prayer." (HCP 29, oncologist, M)***

Interestingly, one oncologist expressed a view that he sometimes had to be spiritual as that was what seemed to be effective with some cancer patients, especially the conservative ones. He relied on Islamic scriptures during his consultation.

> ***"Have faith in Allah', 'Allah is rewarding you and that's a reason to be thankful', 'Keep strong and active'." (HCP 29, oncologist, M)***

Theme 2: Female identity

Female identity impact on Palestinian women's lives and their PA uptake, whether their family obligations or their role as a female caregiver or their commitment to their household duties. All of these negatively affect their PA participation.

Family obligations and the female caregiver role

Palestinian society is considered to be one of the traditional Arab community, with a patriarchal family structure. For the majority of Palestinians, marriage is the primary means through which one fulfils personal satisfaction and Islamic religious obligations (Hasso, 2011). In Palestinian communities, a patriarchal structure is reflected in spousal relationships, where women usually, if not always, bear the burden of raising children and taking care of all household commitments, alongside any other family obligations and responsibilities (Hourani and Ruthven, 2013).

In marriage, for example, women are expected to be obedient, well-behaved and financially dependent on their husbands. Moreover, women are expected to prioritise, first and foremost, the fulfilment of their obligations as mothers and wives (Sultana, 2012).

Arab children are expected to show respect and obedience to their parents and, as adults, to care for their parents, particularly their mothers (Hasso, 2011).

Palestinian women are known to live with adherence to family values, customs, culture and religious beliefs (Azaiza, 2012). The role of Palestinian women after breast cancer does not change within this society; rather, their responsibilities became harder and women appeared to sacrifice their own needs in order to take care of their families. This was reported by women participants, but more so in younger women who had children to take care of whereas older women often had others to take care of them. Thus, almost all women participants reported their traditional family obligations, female caregiver roles, concerns about spending time away from family after breast cancer treatment and delivering their household commitments, were their first priorities.

Previous studies from the Palestinian territories show that women consider the (ill-)health of a family member should take precedence over their own; women's health is thus impacted by both their multiple caring responsibilities and a normative understanding that women's health is less important than the health of others (Majaj et al., 2013; Bates et al., 2017). All these factors have a negative effect on their PA participation.

> ***"You know, I am a mother of 6, and I do believe that my family comes first. So, when I feel good, I want to be around them and do things for them like before. For example, they miss my cooking, doing pastries. So, this takes my time now and it is one of the major factors that prevent me from participating in any physical activities, especially outside the home, such as walking or doing any other physical activity." (WABC 25, 41Y)***
>
> ***"I cannot leave my 5 children, neither take them all to walk with me. To be honest with you, I cannot pay attention to them outside the home, neither run after them. It is difficult to do so while living in a refugee camp with no proper environment or streets for walking." (WABC 18, 40Y)***
>
> ***"My family responsibilities are my first priorities and so taking care of my children take most of my time. Therefore, I do not have time to do any a kind of physical activities except for the regular household things. In the morning, I have to finish my housework, prepare food so as to have time for the children after they come back from school, and for my husband for the rest of the day." (WABC 20, 34Y)***
>
> ***"I do not go out very often. Well, I have 2 young children to look after. I was diagnosed while I was breastfeeding my second child. I was away from them, especially while being in the hospital for radiotherapy. I missed them and I want to spend the whole time with them now, to see them grow up in front of my eyes. I do not guarantee how much time left to live." (WABC 12, 30Y)***

A few women presented other views (4), expressing that what they were doing for their children was what kept them strong and active. They wished to be more active and stronger for their family; however, this did not allow time to engage in any regular physical activity, particularly outdoors.

> ***"My family is my priority. I have young 5 young children, the eldest is 13 and the youngest is 4 years old. I have to be strong for them, so am trying to do all of what I used to do before being diagnosed with breast cancer, such as cooking their favourite food, ironing their clothes and finish all households on time before they come back from school so that I can help them in doing their home works. That gives me no time to do any other thing but am happy am doing what they love." (WABC 18, 40Y)***
>
> ***"Well, am single and I live with my old father after my Mom died two years ago? My father supported me a lot during my cancer treatment. Nowadays, he is sick and needs my care and my company, I cannot leave him alone and go for a walk, I feel guilty if something happens to him while being out." (WABC 6, 50Y)***

HCPs reported one of the challenges for promoting PA to their cancer patients, especially women, is that women prioritise their family responsibilities. HCPs highlighted Palestinian women's responsibility toward their family was a major influence in their decision to be involved in any physical activities. Many (25) explained that women's lack of time was a legitimate reason for not participating in physical activities as much as they should, since all their time is for their families.

> ***"Usually Palestinian women, especially BC patients, have prioritisation of discussing things when visiting the oncologist, and it differs from men with cancer. For example, in discussing their care and treatment, they will discuss if their daughters will have this disease or not. Also, they will discuss how long are they going to be sick and can't take care of their children. Some of them will discuss the checkpoint permit, and how many of their family can have a permit to travel with them, etc. Therefore, this takes all the time with me as an oncologist and leaves no time mostly to mention any recommendation regarding PA or whatever, they are mothers." (HCP 5, oncologist, M)***
>
> ***"The moment that I say to any women that you need to look after your health and go for a walk, they will start to talk about their responsibilities and priorities, especially young women aged 25-40 who sometimes use their young children, work and marital problems as an excuse for not being active or doing any physical activity."(HCP 2, PT, F)***
>
> ***"I noticed during women follow up consultation that their lifestyle is affected by their priorities, as women have other things to care about such as their children, household commitments and other family issues." (HCP 21, nurse, F)***
>
> ***"Women always mention that they don't have time to do any regular physical activities due to their family commitments, especially those women who live with their extended***

> ***family or having a large family already so their prioritisation is their family and homes which affects their physical activities uptake." (HCP 8, oncologist, M)***

Many Palestinian women felt guilty for being away from their family and children while receiving cancer treatment. The majority expressed a deep sense of guilt when their children or parents had to take on their responsibilities when they were no longer able to fulfil them, and it transformed them from caregivers into care receivers. Palestinian women were surprised by how well their children reacted. Older children stepped up to care for siblings and they become responsible for all household tasks as well.

This was reported specifically regarding radiation sessions, which are only available at East Jerusalem at AVH, so all Palestinian women from the West Bank and Gaza have to go there on a daily basis for 4-6 weeks for treatment. Women from Gaza have to stay in Jerusalem during radiotherapy treatment as they cannot come and go from Gaza easily. They need a special permit for this travel and so stay for the whole treatment, away from their children and family. Even women from different cities in the West Bank mentioned that they hardly saw their children and family during the radiotherapy treatment. They needed to travel daily through many checkpoints and so, they often went out early in the morning and came back late in the evening very tired, just to sleep before the next day's session.

> ***"My eldest daughter is in her final year at the university and she has carried out the responsibility of the house during my chemotherapy and radiation therapy all of the past year and a half. She should pay attention to her study and life now since am doing ok. She needs to go out and participate in all the activities she missed while I was sick. I wish I can compensate my family for the days of my illness .I still feel guilty toward my family and want to spend each minute taking care of their needs." (WABC 8, 56Y)***
>
> ***"I do try to spend most of my time now with my family. I lost a lot during my cancer treatment, especially in radiation therapy. I took 33 sessions and I had to go to Jerusalem and be absent for a long time. You know that we are from Gaza and we cannot go back every day. My youngest daughter does not talk to me as she did before because she got used to my absence for treatment during the past year. My eldest daughter is now a teenager and I feel she has a lot of things that I do not know about. Honestly, I cannot go out for a walk and leave them at home, neither can I take them all and walk with them. I need years to rebuild what I lost with my daughters during cancer treatment." (WABC 2, 47Y)***

Women expressed guilt about spending extra money on their own expenses. These were mostly women who didn't work outside the home, as they felt that they had spent a lot during their cancer treatment, especially on transportation, and they felt that their family, husband and children deserved that money. Women who were still working also felt guilty for spending time away from their children, as they wanted to spend each free minute with their family.

> ***"My health status did affect our income, especially during my chemotherapy to Bethlehem and radiation sessions at Jerusalem. Even if the treatment is free, however, we need to pay for transportation, food and sometimes we needed other things. You know, my husband had to be with me all the time and he did not work most of that time. It cost us a fortune. I had to sell out my jewellery (gold) to pay for our expenses. I cannot ask for any more money to spend now on my expenses." (WABC 18, 40Y)***
>
> ***"Gym fees are expensive and I would rather spend money on something more important like buying things for my family, I have 6 children and all have their needs, some are at university and some they want to get married and waiting for our support." (WABC 30, 57Y)***
>
> ***"You know that as woman after breast cancer I started to have different needs than before such as going for physiotherapy sessions or going to the gym, buying new clothes that do not show that I had a mastectomy. I do wish if I can do cosmetic surgery. But as I feel ashamed to ask more money from my husband or even my family because those are secondary things to them and I cannot put more pressure on them after I finished my cancer treatment." (WABC 20, 34Y)***
>
> ***"You know; I cannot say that the surgeon did not refer me for PT as he did. I went to a PT outpatient clinic at Ramallah hospital and they had a waiting list, and I have to pay for the session, although they are a governmental institution still, I have to pay a ratio as it is not a free service. And if I want to go to a private clinic I have to pay more, therefore I did not go!" (WABC 4, 62Y)***
>
> ***"I have not been referred by an oncologist or surgeon but one of other breast cancer women started her physiotherapy sessions at Dunya Women's Clinic and she improved. Thus, she recommended them to me and thus I started my physiotherapy sessions with them, group therapy and participating in all their activities since a while now. It's not free service but I guess I can afford it as I'm feeling the difference." (WABC 10, 43Y)***

Many HCPs expressed concerns that some cancer patients could not afford the PA programmes. They recognised that a women's financial status was a barrier for them to promoting physical activity, and they did not want to put extra financial pressure on these women. HCPs explained that gym membership and the fee for regular PA programmes might be too costly, being a barrier, especially for those with no work outside the home. Gyms are mostly available in cities and the additional travel expenses and necessary clothing might also be unaffordable. HCPs explained that women from villages, refugee camps or Area C (rural) of the West Bank could not travel safely on public transportation to the gyms in the cities (urban) and through some of the Israeli checkpoints. HCPs simply tried to recommend to women to be active as possible, without any referral to a particular gym or specific PA programme that they might not be able to afford or have safe access to.

> ***"We can notice that how the financial load after cancer treatments had affected women's priorities and so it will affect their engagement in any other activities and they may not be able to pay extra money for a gym or even other issues, as their family and children will be number one priority." (HCP 24, nurse, F)***
>
> ***"From my experience, women who work have the financial resources to seek medical help and access to the gym and other things. While housewives, after they had cancer, may feel shy to ask for money from their family or husband, as even money for transportation and travelling to these medical centres or gyms while unemployed women need all of this permissions and justifications and where will she spend the money, especially if they don't have extra money, then this money they will prioritise their families over their health needs or even medical check-up and not only physical activity." (HCP 6, oncologist, M).***

Household commitments

Palestinian women after breast cancer reported how domestic commitments and household activities took their time and effort thus, by the end of the day, they felt exhausted and could not do any physical activity. There was a difference here between older women (especially aged 60 and over) and younger women (less than 50 years old) as, in Palestinian society, the elderly are the responsibility of their families, especially children and grandchildren (A.I, Hmeidan and Qaraqra, 2011).

Older women do not expect to do many domestic or household duties because of deeply-rooted religious and cultural norms that emphasise the duties of younger generations towards their elders. Female relatives were mainly expected to provide practical assistance with household chores. Thus, it was more likely that older women after breast cancer had more time for physical activities, but again there was a variance between the norms of nurturing and care and the necessities imposed by the disease. Younger women after breast cancer, with young children and older parents to care for, mentioned that they had multiple responsibilities and no free time to do any physical activity.

> ***“To be honest, I only cook for my family and not all the time, I do not have to do the regular house chores since my daughter in law is living with me so she is doing and my granddaughter all the work. I do not practice any other physical activities, am just sitting most of the time on television.” (WABC 11, 67Y)***
>
> ***“I wake up early to pray at 5 am and then start doing regular house chores from cleaning, doing the laundry, cooking for a large family (7 people). By midday, I feel so exhausted to do any other activity inside or outside, all I want is to rest on the couch and sit with my family, don’t I deserve a break?” (WABC 9, 38Y)***
>
> ***“I do love walking but I have to finish house chores first. Every day, I have to clean the house and cook for the family. After my diagnosis and treatment of breast cancer, I need more time and effort than before to finish these duties, which prevents me from going out for walking most of the time or even do any other physical activity. Is not that enough?!” (WABC 10, 43Y)***

Regardless of who or what is responsible for women’s position in society, and endorsed gender hierarchy and division of household labour is likely to have consequences for men and women’s behaviours and roles within the family.

The women's testimonies revealed the strains they endured as a result of their menfolk's conduct, which may have been exacerbated after their breast cancer. While some reported that men were actively sharing household responsibilities, others noted that the gendered division of labour continued.

> ***“And the men keep [nagging] us to make food and household commitments on time.” (WABC 18, 40Y)***

> ***"My husband does not like the idea of me getting out to walk and leave the kids with him after he gets back from work. Secondly, he does not offer any help at house chores or with children. Thus, I cannot go out neither in the morning nor in the evening to do any kind of physical activities." (WABC 9, 38Y)***

Some women were happy to do their household tasks by themselves rather than rely on others to do them, and then not be involved in other activities.

> ***"The only physical activities I do is the daily and regular house chore and shopping. Although I do not have time for any other kind of activities. Still, I feel that by fulfilling my role as a mother and a wife that is enough for me." (WABC 2, 47)***

HCPs in this study are also part of Palestinian society and they recognise the role of Palestinian women as usually, if not always, bearing the burden of raising children and taking care of all household commitments. Thus, many, and in particular nurses, thought household commitments were a particular barrier for women to be physically active.

> ***"I do know that in some societies, fear of husband and in-laws over not finishing household commitments on time will take all their time and priority, and thus those women will either forget to do any physical activities or they will not have time as at the end of the day they will be exhausted and have no time for any other physical work." (HCP 13, nurse, F)***
>
> ***"Women who are married and having many children spend all of their time and efforts to take care of their family, which affects their PA uptake." (HCP 22, nurse, M)***

Other HCPs mentioned that they would encourage women to do household activities to keep them physically active. Hence, particularly female nurses used those household activities as a substitute for PA promotion among Palestinian women after breast cancer.

> ***"I did notice that married younger women sometimes fight to be active and to be strong for their husbands and children by doing all their house commitments and thus I do recommend older women to do their household commitments as a kind of doing physical activities." (HCP 21, nurse, F)***
>
> ***"Women under the age of 60 are busy and have other priorities such as their home, children and work if they have a job, so rarely they can find time for themselves. Still, they could be active unlike women above 60" (HCP 2, GP, F)***

Theme 3: Changing identity

The effects of breast cancer and its related treatments had an impact over and above the physical or psychological issues discussed earlier. Some women in this study reported that they felt no one understood what they were going through. They added they had changed and that they were no longer the same women as before breast cancer. This change in identity also affected relationships with their family, including spouses and their inner circle of friends. Some of the women were trying to search for new friends who could understand their insecurities, such as other women who had any kind of cancer, as they felt they were on the same road together. In addition, 21 women highlighted that this change had negatively affected their participation in physical activity. They explained that their body image had altered for the worse, which prevented them from doing much physical activity, especially outdoors and the majority were now staying at home more.

Only a few women reported that when they participated in any kind of physical activity, they felt like a normal woman again. Those few women felt that PA participation had empowered them and given them the motivation to stay active. However, these women were active before being diagnosed with breast cancer.

Altered self-image

Palestinian women associated their diagnosis of breast cancer with loss. They highlighted that after being diagnosed with breast cancer, they lost hope for a normal life. After the mastectomy, they lost their femininity. After chemotherapy, they lost their hair and their physical attractiveness as women. Some mentioned they might have lost their fertility, autonomy and sometimes also their arm function. Overall, they reported a loss of self-esteem and identity. Participants emphasised these losses as negatively influencing their body image, which consequently had negative effects on their PA participation.

However, walking or going outdoors did not present as a major problem, because most Palestinian women usually wore the hijab (headscarf) and clothing which enabled them to disguise their hair loss as well as the absence of the breast by stuffing their bra.

Still, indoors, these women were forced to face the physical loss of the breast, which had a negative impact on both self-image and PA participation.

> ***“No one can know-how is the life of a breast cancer patient would be. I am feeling confused since being diagnosed with breast cancer. And I have to go through difficult times that I cannot explain to myself or others around me, but my self-image changed and that negatively affects all my daily life activities.” (WABC 10, 43Y)***
>
> ***“It is not easy for a female or a woman to lose her breast. Your image changes even in front of yourself. Before I had breast cancer, I loved to dress up, especially in women's occasions, parties and weddings, but after my mastectomy, I no longer wear dresses and participate in social events, even I do not do any kind of physical activity.” (WABC 20, 34Y)***
>
> ***“I don't feel the same before. My self-esteem and my self-image are less now and I feel that my husband is not as good as before with me. I feel that am less feminine and I don’t want people to feel sorry for me, especially my mother and sisters in law. Thus, I stay at home and don’t participate in any activity.” (WABC 15, 49Y)***

The disruption of body image in breast cancer is not only attributed to hair loss but as also changes to the women’s whole physical appearance, such as changes in the breast, weight and sometimes their smile. Married women in this study reported that their physical appearance after breast cancer treatment was a source of disagreement with their spouses.

> ***“Because of chemotherapy, I lost most of my teeth, so the feature of my smile has changed and even I have pronunciation difficulties. Even when my husband thought that he will pay to repair my teeth, his male friends advised him not to spend money on a woman that might die soon and to keep this money to marry a young woman to look after him instead of taking care of a sick woman. When he changed his mind, that’s negatively affecting my relationship with him and I feel that I lost my self-esteem.” (WABC 10, 43Y)***

Another thing reported by many younger married women, rather than older women, was their sexual life after breast cancer. These women reported that their self-image had changed as well as their sexual life. Some women said their husbands were sensitive and supportive during intercourse. In contrast, others said that their husband no longer saw them as sexually attractive and that they were thinking about getting another wife.

Partners withholding intimacy could be both a means of rejection or support, which indirectly affected women's ability to participate in physical activities. For example, in some conservative families, women need their husband's permission before doing any activity, in particular outdoors and now they felt reluctant to ask for these permissions as before. Furthermore, women felt they could no longer share mutual activities with their spouses, such as going to social activities or sometimes even doing shopping together. Thus, women's altered body image had negatively affected their marital relationships and this impacted on their participation in both social and physical activities.

> ***"After I had breast cancer, my husband started to act weird, we did not have sex since almost 2 years and now and then he keeps saying that he will get married to a healthy woman. His family are preventing him so far but that's affected me and increase my level of stress and anxiety, it's my occupying all my thoughts and affecting my daily life activities." (WABC 6, 49Y)***
>
> ***"Since I had a mastectomy, and my husband only gives me money that is barely enough to spend on the house and children. He is trying to save money to get married again. So far, his family prevents him from doing that as they still are taking into account my feelings. However, he is so determined to get married. This issue is my biggest problem which negatively affects all my activities inside and outside the house." (WABC 33, 51Y)***

The majority of Palestinian women expressed a wish and desire to be able to have plastic surgery in the future, as now they could not afford to have reconstruction surgery. Reconstruction or plastic surgery is not covered within the governmental insurance and cancer policy in the Palestinian territories. Women thought it would increase their self-esteem and thus positively increase their PA participation.

> ***"I wish I can afford to have a plastic surgery; I do believe that it would solve my problems with my husband, my feelings of being less than other women and maybe I can be more social afterwards." (WABC 3, 42Y)***

Only two women participants in this study had reconstruction surgery, and it was performed in a private hospital at their own expense. Those women reported that they felt generally much better now and that they were satisfied with their self-image, compared to after mastectomy, and so they can go and participate in either social or physical activities without feeling embarrassed about their body image.

> ***"I did a plastic surgery at Al-Istishary hospital (private hospital). It was worth it as I don't feel embarrassed anymore of going out and meeting people whenever I wish." (WABC 4, 62Y)***

Muslim women participants in this study wore the hijab before being diagnosed with breast cancer, and almost all reported that being committed to the hijab helped them look like normal women in front of others. They explained that Islam or the culture of modesty had a positive impact on their self-image and protected them from being more vulnerable, especially in their outdoor activities.

> ***"I did not tell anyone about my diagnosis of breast cancer, except for my husband. Not even my both sons as they are married and live alone, not my in-laws, and every time they visited or I visited them I stayed with my scarf on. I'm well known for being a committed woman and I do wear hijab most of the time. I remember that my mother in law visited us for few days and I even slept with my scarf so that she will not notice that I lost my hair after chemotherapy as I don't want her to feel pity about me. Thus, wearing a hijab helped me a lot in protecting myself." (WABC 30, 57Y)***

> ***"I did not allow anyone to see me without a veil when I lost my hair, even my husband and my children. I wore the veil all the time, even at home." (WABC 22, 39Y)***

Some HCPs agreed that many Palestinian women after breast cancer treatment suffered from issues related to body image, especially after having a mastectomy, mainly female nurses and one female physiotherapist. Interestingly, only one male doctor suggested women after breast cancer would suffer from changes in their identity, which might affect their PA participation.

> ***"I guess women may struggle with coping up after breast surgery, chemo and radiation, as many of them suffer from shame, less feminine and they don't want many people to see them which affects their PA levels, thus they need a psychological support." (HCP 20, oncologist, M)***

HCPs explained women who had low self-esteem and confidence, and less support from their husbands would struggle more with their daily life, and especially outdoor activities. Interestingly, this was only reported by female nurses amongst the HCP participants.

> ***“Women became sensitive after they lose a part of their body such as after mastectomy or even lumpectomy that makes them feel less feminine which affects their ADLs and other relationships with people, such as walking and also social activities such as attending weddings.” (HCP 10, nurse, F)***
>
> ***“Many women after breast cancer surgery, especially the one who had a mastectomy, being anxious all the time about their body image and this can lead to withdrawing from any social activity, therefore decreasing their PA participation, especially outdoor one.” (HCP 1, nurse, F)***
>
> ***“Several women have told me that they wish if they had a cervical, ovarian, uterus or any other cancer inside the body but not breast as they will not feel insecure about how they look like as now. Many are not accepting their new body leads to a feeling that their femininity is deficient and they prefer to stay at home and not doing any outdoor activities so that people will not notice the default at their body.” (HCP 8, nurse, F)***
>
> ***“Women after breast cancer treatment will become shy and having low self-confidence which is barriers for some to do any PA, especially in front of others even if they were only women.” (HCP 15, nurse, F)***

Further, HCPs were aware of the negative aspects of Palestinian culture regarding the sensitivity of breast cancer for women and how it might compromise their role as a wife.

> ***“Palestinian culture still supports the husband of a woman with BC to have another wife even if she was the most wonderful wife, while the women should never complain and support her husband if he gets cancer even if he was the worst man ever!” (HCP 3, surgeon, M)***

PA as means of empowerment

An exploratory review (2017) suggested participation in exercise interventions enhanced breast cancer survivors’ self-confidence and mood. It allowed them to regain control and provide a focus, therefore allowing them to move forward in their lives (Livsey and Lewis, 2017), and further, that strategies to empower patients with cancer can be either induced by the HCPs (collaboration, education/coaching, and communication) or induced by the patient (choosing resources according to his or her needs, and asking questions and obtaining information (communication) (te Boveldt et al., 2014).

Only eight Palestinian women in this study explained that participating in different kinds of physical activities over time had helped them accept their new identity. They also reported that being physically active empowered them and gave them away to cope and adapt. Thus, participation in PA had a positive effect on the lives, particularly for women in their 50s and 60s.

> ***"I do feel great that I am walking more frequently. Being active again changes my attitude toward my life after breast cancer treatment finished." (WABC 7, 59Y)***
>
> ***"I did follow a PA programme that I found on the internet for cancer survivor and it plays a very important part in improving my relationship with my husband, as he starts to walk with me most of the time. Also, I found that it reduces most of the negative energy that I had." (WABC 30, 57Y)***
>
> ***"Engagement in some kind of physical activities gave me the self-confidence that I needed as a divorced woman with breast cancer. Participation in the marathon for raising awareness about breast cancer has given me confidence in pursuing my life activities and enjoying my life." (WABC 10, 43Y)***

Further, women expressed that PA contributed to a feeling that life can be continued in a normal way, with activities and normal routines (Luoma et al., 2014). Interestingly, one Palestinian woman reported that she went out for a walk with her husband and children from time to time to show her neighbourhood that she is in a good health and back to her normal life, and that's given her a sense that she is a normal woman again.

> ***"You cannot change our society. But I do try to go out and walk more frequently with husband and children to show that I am good, alive and we are living a normal life as other families as we used before, I had breast cancer." (WABC 20, 34Y)***

From the HCPs' perspective, some reported that one of the strategies to empower cancer patients and increase their self-confidence was by promoting physical activity. In particular, female nurses and physiotherapists stated that they advised women to be active as possible and to try to get back to their previous life. HCPs felt that this strategy was working, as women felt they were normal again when they fulfilled their roles in society.

> ***"I try my best to give them the advice to be active and try to participate in any activity that will distract them from negative thoughts, as being active is good for mental as well as physical status." (HCP 5, nurse, F)***
>
> ***"I do recommend women to go back and practise their daily life routine as normally they did. I advise them to stay in contact with people and do not isolate themselves, rather doing going out as before." (HCP 15, nurse, F)***

Oncologists and nurses reported that increased weight among women after breast cancer was a primary reason for them to promote and recommend physical activity, especially for those women on hormone therapy, to decrease the side effects of weight gain. They also recommended PA alongside referring those women to a dietitian for a healthy diet and food intake plan explaining that they did not know if overweight women would commit to the PA and healthy diet recommendations or not.

> ***"Well, I do recommend them to walk daily as long as they can. Also, to have a healthy lifestyle including nutritional food, I do refer overweight women to a dietitian to arrange for them a special diet programme as they need it." (HCP 6, oncologist, M)***
>
> ***"I do recommend women to pay attention to their weight. They are given instructions to be active generally, and have a healthy diet." (HCP 23, nurse, F)***
>
> ***"I do give them simple instruction, such as taking care of their diet, try to be active but also to take it easy."*** **(HCP 21*,* nurse, F)**

Theme 4: Promotion of physical activity

As stated in chapter 3, I have found that the social-ecological model for active living maps levels of influence from intrapersonal factors through to the policy environment (Sallis et al., 2006). Therefore, the promoting PA theme centred on the following subthemes: beliefs about physical activity; fear of injury; social support of PA and information about physical activity, and roles and responsibilities of HCPs regarding physical activity, the referral scheme, and resources for physical activity.

HCPs in this study found it challenging to promote and provide PA recommendations to their cancer patients, especially Palestinian women after breast cancer. Also, Palestinian women reported many challenges for them to be physically active, as well as elaborating on different factors affecting the promotion of PA from their perspective.

Promotion of PA had several subthemes.

Beliefs and motivations about physical activity

One of the factors associated with PA participation or promotion is the participant's beliefs about PA and their motivation to engage in any kind of physical activity.

Thus, women participants' positive belief affected their PA participation positively and gave them a motivation to be active and vice versa. Only 14 women participants in this study believed that being physically active was crucial to their health.

> ***"I think it is important to be physically active as much as I can, as the old proverb says [movement is a blessing], but I'm not sure now as my doctor did not say anything about that." (WABC 11, 67Y)***
>
> ***"I believe that walking helps improve the mental status and enrich the soul with positivity, but I did not have a motive from the beginning when I was diagnosed with breast cancer to do any physical activity, that's why I don't do much." (WABC 2, 47Y)***
>
> ***"I do not have any motivation to move. Laziness prevents me from engaging in physical activities." (WABC 6, 50Y)***

Another issue reported by some women was their negative beliefs about PA participation and being a cancer patient. Seven women participants mentioned that they did not think that PA was important to them, as they were cancer patients and that they should not make an extra effort and they should rest more. This perspective was also reported in another study, which showed that Arabs believe complete rest speeds recovery (Hammoud et al., 2005). Thus, those negative beliefs prevented them from engaging in any physical activities, especially outdoors.

> ***"I do not think that PA has a positive effect as whenever I do anything I feel tired so easily. So, I give up even going to walk." (WABC 32, 58Y)***
>
> ***"I do not have any motivation to move. I think laziness prevents me from engaging in physical activities." (WABC 29, 70Y)***
>
> ***"Since I was a child and I don't love to do any effort and I love staying at home most of the time. This did not change now rather than I love being at home doing nothing all day." (WABC 6, 50Y)***

HCP participants mentioned that there were still myths among cancer patients and their families, especially women, which affect their PA participation in general, such as one should not do any movement in the side of the body affected by cancer, etc.

> ***"There are still many wrong thoughts fabricated around cancer, diet, engaging in physical activities, etc. I don't know exactly where these ideas came from but I know that their false understanding negatively affecting their activities, movements and physical activity participation." (HCP 22, nurse, F)***
>
> ***"Still some people try herbal treatments while others become more cautious about their diet, and some believe that they should rest and not do any activities, especially after mastectomy." (HCP 2, nurse, F)***

Although the majority of HCPs answered that they thought or believed that PA is good when I asked them if they thought of PA for cancer patients, more than a third (14/36) did not recommend or advise any kind of PA to their cancer patients. This surprised me and I felt that they answered that PA is important because that is what I asked them.

> ***"I do recommend PA to all my cancer patients at all stages. However, I think it's more important in the survivorship stage when women are having their Tamoxifen as it may cause additional side effects such as increase weight, and sometimes DVT, therefore I mention to them that being physically active is very crucial to prevent those side effects." (HCP 2, oncologist, M)***
>
> ***"The physical and psychological aspect of women after breast treatment affects their whole life, including their daily life activities, physical uptake, especially when they start to take hormone therapy and thus they feel they need help, therefore I do recommend them to walk daily to overcome this increase in weight." (HCP 13, nurse, F)***

Furthermore, a physiotherapist working in a cancer institution explained that a barrier to promoting PA to cancer patients was oncologists' beliefs and attitudes regarding PA for cancer patients. Thus, if oncologists had a positive belief, they would recommend cancer patients to be active and if not, then they might not even mention any information about PA or physiotherapy.

> ***"Oncology attitudes to PA could affect cancer patients and survivors especially women behaviours, as it could make it easier or harder for them to follow PA instructions or not! Eventually, our women believe in their oncologists." (HCP 36, PT, F)***

Interestingly, when I asked HCPs who did not recommend PA to their cancer patients what the reason was, I was amazed by some of the answers. Some HCPs showed either their lack of knowledge about the benefits of PA for their cancer patients or their own negative beliefs about PA for cancer patients, especially for women after breast cancer. I did not explore this any further as I thought it might embarrass the HCPs. One nurse answered that breast cancer is one of the less complicated cancers, and thus women can take care of themselves without any further recommendation about PA or whatever.

> **"Well, as the side effects of breast cancer is less comparing to other types of cancer such as lung or any other internal organs, then I do not think that those women need further advice or instructions regarding their PA as they are doing well generally." (HCP 2, nurse, M)**

Fear of physical activity

Fear has been identified as a barrier to PA uptake by participants in this study. Fear was frequently reported more by women who had comorbidities, they cited fear-avoidance, worrying about injuring a muscle, fear of losing balance and sustaining a fracture as they had osteoporosis, fear of developing lymphoedema or even fear of feeling more pain, as they were already complaining of low back or knee pain. Thus, many women chose not to do any physical activities to limit their chance of injury or pain.

> ***"I have fear of losing my balance while walking because of the numbness in my feet. I do not like to walk alone, especially outside the house where the roads are narrow, not straight and sloppy as it's almost all of the camp's roads." (WABC 29, 70Y)***
>
> ***"I developed osteoporosis after chemotherapy. I still have lots of fears to break my arm or leg from doing any type of physical activity. You know, I am afraid if one of my bones is broken that I will not be able to get out of bed again and eventually I will die. That is what happened with a woman I knew after she broke her hip." (WABC 11, 67Y)***
>
> ***"Honestly, I used to go to gym before I was diagnosed with breast cancer, but after my treatment finished, I tried to go to more than one gym, but I am afraid of getting any injuries while performing physical exercises or activities. My fear's based on that, after chemotherapy and radiation I feel that my muscles and bone are weaker and it will be easier to get any injury while exercising and that's why I stopped." (WABC 17, 55Y)***
>
> ***"I was working in a sweets and bakery shop. I had to leave this job as I am afraid of developing lymphoedema after the surgeon removed several lymph nodes during the surgery. And to be honest, that's affecting my daily life activities negatively as I barely do the minimum activities comparing to before having breast cancer." (WABC 10, 43Y)***

Fear was also identified as a barrier to PA promotion by many of HCPs. They, especially oncologists, reported fear and concerns about promoting PA to their cancer patients in case they got injuries such as fractures.

> ***"To be honest, I do have fears and a hesitation nowadays when I recommend PA to cancer patients, especially to women as they may overestimate what they can do. I remember that I refer a woman after breast cancer that had a lymphoedema and at the same she had osteoporosis to do some exercises to her arm and that she might go to a gym for that. Then she had a fracture as a complication of doing overdose exercises. Therefore, I just instruct them to be active as possible." (HCP 28, oncologist, M)***

> ***“No, I do not refer cancer patients to a physiotherapy or to a gym for doing physical activities due to the co-morbidities that cancer patients might have, such as diabetes or other musculoskeletal problems, and I am worried that a physiotherapy could not be good, rather than could cause them further problems.” (HCP 20, oncologist, M)***

Social support and cultural attitudes to physical activity

Palestinian social and cultural attitudes towards women’s PA were another barrier negatively affecting women’s PA participation. The social networks of most Arab women are confined to the immediate community.

A few women (5) received positive support from their family, friends and surrounding community that shaped their behaviours and encouraged them to be physically active. These Palestinian women explained that their families would help them to be active within the boundaries of culture and Islam. Thus, dressing modestly and sex segregation were issues discussed by participants preventing them from being as physically active as they wished. Almost all women and HCP participants mentioned that the Palestinian and Arab culture had a negative influence on women’s PA participation and that there were limited opportunities for women compared to men in their environment. The majority of women described not being allowed to do any kind of PA in parks or open outdoors, except for normal walking and especially not running.

Women explained it is still more acceptable to do these activities indoors, such as going to a female-only gym. Most Palestinian families forbid PA participation in public where distant males are around and most women participants reported that they needed to have permission and approval from their families to go to a gym. Some families would be worried about their daughters travelling alone to the gym and it was thought better they be accompanied by another family member, preferably male.

Women’s families were often over-protective of them after their breast cancer and they did not allow them to go outside the home or to travel on their own due to fear something would happen to them while they were vulnerable. The women were not regarded as healthy and this added to their family’s worries about them travelling alone or incurring injuries while at the gym.

Other families lacked awareness of the importance of PA participation for cancer patients and thus they did not support them or even prevented them from doing any PA outdoors. Thus, the lack of family members' awareness and support regarding the importance of PA to those women after breast cancer treatment was another challenge and a barrier for them to be physically active. Some women living in refugee camps (9) or small flats in cities (5) discussed how they did not have enough space to do indoor exercise at home. This compounded the effects of the socio-cultural norms that already limited their outdoor physical activities and negatively affected their PA participation.

All the women in this study reported that their level of activity, especially outdoor physical and social activities, significantly declined after being diagnosed with breast cancer and both during and after treatment.

> ***"First, my husband does not like the idea of me getting out alone to walk, especially in the evening and in the morning. There is no one to help at house chores or with children. Thus, I cannot go out neither in the morning nor in the evening to do any kind of physical activities." (WABC 2, 47Y)***
>
> ***"I cannot take my young children with me for a walk. My mother in law who lives next to us agrees to leave them with her, only if I have a good reason such as going to the hospital, but not for going out for a walk or doing some exercises." (WABC 12, 30Y)***
>
> ***"I live in a village, everyone knows each other, and so I cannot go and run outside home as they will start to talk behind my back. Also, we don't have gyms for females only and we cannot go to the city each day or every other day. I do walk, but not like exercising, rather than just walk from my home to my friend's home and so on." (WABC 9, 33Y)***
>
> ***"We live in a Bedouin community. It is not acceptable for a young lady to go out and walk alone. I cannot go out and walk alone for no reason. I must be with my husband or others. We are a conservative community." (WABC 12, 30Y)***
>
> ***"My two young boys don't like me to go and walk, especially that we live in a refugee camp where houses are so near and there are no places to walk and I cannot go to the city for a gym each day or every other day. People will start talking about me if I go out of home too much." (WABC 30, 57Y)***
>
> ***"To be honest, I do think a lot about what others might say about me, especially the neighbours when they see me going out for a walk every day! Thus, I do try to minimise my activities outside the home." (WABC 33, 51Y)***

A few women had their family's support, especially their husband, and considered this a great facilitator for them to be physically active, particularly participating in outdoor physical activities.

> ***"The fact that I do not live near my mother-in-law and that she is not around to criticise and watch me has made my husband more supportive, especially after I had breast cancer. He allowed me to get out of the house every time I want and allows me to do some physical activities, like walking outdoors." (WABC 22, 39Y)***
>
> ***"The most important facilitator and still for me to practise some activities is the support of my husband, who helped me to participate in some physical activities such as the marathon, some recreational trips and group therapy. You know he gives me huge support. He never made me feel like I was sick with cancer. He always takes me out of the house and this makes it easier for me to adapt to my current health condition. His great support for me may be due to his mother's death with cancer." (WABC 20, 34Y)***
>
> ***"The support of family and friends, especially my husband, makes it easy for me adapt to anything. Since the summer, I and my husband started to walk every other day." (WABC 30, 57Y)***
>
> ***"My husband's continuous support for me have facilitates my participation in any activity. He is amazing, we go out to walk every time we can." (WABC 29, 56Y)***

All the participants reported being with a group of women, whether they were healthy or also had cancer, was a facilitator for PA as this was more acceptable.

> ***"I do believe that group therapy is very crucial to me. When I start meeting women at Dunya clinic, I found it very useful, as breast cancer survivors do give themselves the strength to fight cancer and go back to their previous life activities. They have the opportunity to share their experiences and problems." (WABC 10, 43Y)***
>
> ***"You know when I came back to olive collection season, and I participate like all the women at the village and as I used to since I was young, this makes me feel as normal person again." (WABC 14, 63Y)***
>
> ***"I usually go out with my friends, we take our children and go for walks on the beach …It's the only way for us to spend the time and being active, I guess!" (WABC 2, 47)***
>
> ***"To be honest, I do prefer doing any activity with others; especially that walking with someone else is more socially acceptable. So, if I could not find anyone to walk with, I will never go out alone." (WABC 13, 50Y)***

HCPs observed that over-protective family members negatively affected cancer patients' PA participation, and this was a challenge when they were promoting physical activity. They explained that the patient's family could hinder or facilitate them promoting PA to their cancer patients expressing social support as most crucial for women after breast cancer in Palestinian society.

Thus, changing the attitudes and perceptions of the family members of cancer patients, especially regarding the importance of those women being physically active, may facilitate women's participation in physical activity.

> ***"Sometimes the over protection from family and their respect especially for older women as they should not do any housework and stay relaxed and their daughters and daughters in law will do all the work for them, and that their sons take them in cars if they need to go anywhere and they will do the shopping for them, that negatively affects their PA uptake and participation." (HCP 21, nurse, F)***
>
> ***"The support of the family is very crucial regarding PA participation, especially for women, as not having this support can be a huge barrier for us as oncologists to recommend PA to those women as they will struggle twice if they wanted to do physical activities without the support of their family, thus I need to promote PA to the whole family." (HCP 6, oncologist, M)***
>
> ***"The family members of the cancer patient and the relatives, especially for women with breast cancer, can either encourage them to be active and strong or either be a barrier and make it harder for them to do any activity. So, it's different from one family to another, according where they live and what them think and what they know about all kinds of physical activities." (HCP 26, oncologist, M)***
>
> ***"Family plays a great role in either helping women to be active or not, whether their intention is good or bad, but they had a great effect and this differs according to their level of education and awareness about cancer as a disease, the consequences as well as the importance of being physically active during all stages of cancer. Sometimes, I do need to explain all this to the family of cancer patients." (HCP 29, PT, M)***
>
> ***"I think that there is a huge lack of awareness in the Palestinian society of the importance of movement and activity for cancer patients, especially in some areas. There are still some people who believe that cancer patients should stay at home and wait for death." (HCP 4, nurse, F)***
>
> ***"In our Palestinian culture (people don't view PA as important), taking medicine is enough for them, and for cancer patients, there is no need for physical activity, that's what I know from my experience." (HCP 5, GP, M)***

Several studies of Arab and Palestinian society, highlight the word “cancer” was a source of distress, as cancer was usually seen as a confrontation with death in the local context, and thus a social stigma was attached to a breast cancer diagnosis (Hammoudeh et al., 2016; Goldblatt et al., 2012).

Accordingly, many Palestinian women participants (9) tried to hide their breast cancer diagnosis from their community to avoid expressions of pity. They reported they did not want some people in their social networks, such as their mother-in-law, to know about their breast cancer diagnosis, as it would cause feelings of embarrassment and shame.

> ***“I know the way that people will look at a cancer patient since my mother had breast cancer. It will, makes you feel like you're going to die tomorrow. I think these negative feelings was why I did not want anyone to know that I had breast cancer.” (WABC 20, 34Y)***
>
> ***“The society negatively affects me. The first thing they say when they know that I had breast cancer, is that ’you still young, who will take care of your children?’ All of their looks are pathetic and I hate it. I hate people's reactions when they meet me and start asking about my health. I don’t go out much because of that.” (WABC 12, 30Y)***
>
> ***“People including family and friends will start to treat you differently after they know that you had cancer ... they became so nice, caring and want to do everything for you and that’s annoying me as I feel this sympathy hurts cancer patients rather than being positive. I wish that they treat us as normal people.” (WABC 2, 47Y)***

Stigma was reported as a negative influence on women’s lives affecting social and physical activities. Stigma has been described as negative attitudes, emotions or behaviours towards people who belong to a certain subgroup, for example, having a specific illness or displaying certain behaviour, based on that characteristic (Link & Phelan, 2001).

The commonly recognised concept is public stigma, i.e. the attitudes and behaviours of other people and theoretically, it has been argued that public stigma leads to the development of self-stigma (Vogel et al., 2013).

Internalised negative attitudes by the stigmatised person are referred to as self-stigma, or personal stigma, and the two types influence people in different ways (Corrigan et al., 2004) and negatively impact on people's self-esteem (Link and Phelan, 2006). The effect of perceived stigma was shown to be mainly as a consequence of increasing patients' personal stigma, which in turn impacted upon help-seeking (Vogel et al., 2007). Thus, many women in this study mentioned that they preferred to stay in home and not participate much in social and physical activities outdoors, as they had fears of feeling ashamed or being stigmatised in their community.

> ***"Every time I go out, I get irritated by how people look at me. It maybe I became more sensitive or it may be my imagination. I feel so ashamed to go out so that people may notice the change in my face and speech after I lost my teeth as a consequence of chemotherapy. Because of this I do not like going out a lot and prefer to stay alone at home." (WABC 10, 43Y)***
>
> ***"An important factor that prevents me from going out and exercising is that I worry a lot about what people around me may say to me whenever they saw me outside walking. Most of them had given me negative comments, which was the reason that prevents me from doing any physical activities as much as I wish, especially outdoor activities."(WABC 17, 55Y)***
>
> ***"Well, I can see that fear and shame of having breast cancer had changed a bit, still it's different from urban to rural areas and refugee camps. However, it should be noted that the awareness has changed in Palestinian society since 2012 which I hope will be better for cancer patients." (WABC 32, 58Y)***

Almost all HCPs participants confirmed Palestinian culture had a negative influence on PA participation in all cancer patients, but that this was particularly the case for women after breast cancer.

> ***"Palestinian culture affects negatively most cancer patients whether it was before, during or after treatment. However, mostly it still in some communities affects the women who had breast cancer as still, they suffer either from stigma or other negative thoughts about why and how they got breast cancer." (HCP 27, oncologist, M)***
>
> ***"Mostly younger women after breast cancer can feel ashamed, as still, some local communities see breast cancer as a stigma and so these women stay at their houses and do not get out or do any activities." (HCP 2, nurse, F)***

> ***“In general, some of the Palestinian traditions negatively affect women’s lives and daily behaviours, especially after breast cancer. For example, some women feel shy that they had breast cancer and if people knew them and their daughters are of risk and so, to protect their family, they prefer to stay indoors as much as they can to avoid unnecessary questions.” (HCP 9, nurse, F)***

A few women reported things changing in the past few years for the better and that people in Palestinian society are becoming more aware of breast cancer in general. However, the lack of awareness regarding the importance of PA to cancer patients still has a negative effect on their participation in physical activity.

Cities such as Ramallah, Bethlehem and Jericho have organised a marathon (for both men and women) to raise awareness about the importance of early detection of breast cancer, each October since 2015. However, this remains unacceptable in other cities like Hebron and Nablus, the largest cities in the south and north of West Bank. Participants from Gaza mentioned it is acceptable to walk on the beach every day but only with a male family member or in a group of women and only if wearing appropriate clothes. According to the press and NGO reports, Hamas’s “morality police” in Gaza punish women for activities they deem inappropriate, including riding motorcycles, smoking cigarettes or water pipes, leaving their hair uncovered, and dressing “inappropriately” in Western-style, such as jeans or T-shirts; however, enforcement was not systematic (The Jerusalem Post | JPost.com, 2018).

In Arab/Muslim countries a traditional dance (Dabka), which is a native Levantine folk dance performed by the Lebanese, Jordanians, Syrians, Palestinians, and southeastern Turks, combines a circle dance or a line dance of both men and women. This is acceptable to perform as a mixed-gender activity in Palestinian society. Yet participation in mixed-gender gyms, for example, is traditionally and religiously inappropriate for the female Muslim community (Lawton et al., 2005), including Palestinian society. This issue seems to demand an explanation, but I can’t yet explain it.

> ***“Taking part in marathons that were organised by the Dunya Centre in the past two years has been a useful experience for me. It encourages me to participate in community activity again and to stay as active as possible.” (WABC 17, 55Y)***

> ***“I got my cancer 3 years ago now and to be honest, what people were and what they are nowadays saying has differed as they are more supportive and caring for women who had cancer and less shameful. However, there is an important factor that prevents me from doing outdoor physical activities, such as walking or going to the gym, which is the lack of awareness of the importance of PA and exercises for cancer patients. Thus, people comment on women participating in PA in general negatively affects my decisions, and hinders me from participating in any physical activities, especially activities outside the home and not because I had breast cancer.” (WABC 20, 34Y)***
>
> ***“Some of the breast cancer survivors that I have met during radiotherapy in Jerusalem and we are still keeping in touch have participated in that marathon. While for me, I do live in a city where women are not allowed to run like other Palestinian cities.” (WABC 3, 42Y)***

HCPs also mentioned the changing attitudes in Palestinian society toward cancer, and specifically breast cancer, for the better and more acceptance of women with breast cancer.

> ***“Honestly, I have more than 25 years of experience of working with cancer patients now and I can see that the effect of traditions has become less than it was in previous years. Still, some had negative effects and some had positive effects.” (HCP 5, nurse, F)***
>
> ***“Although we can notice that the percentage of breast cancer patients has increased but the awareness in early detection of breast cancer has increased as well. Things have changed since 5 years ago as most breast cancer patients were at stage either III or IV, but now the majority is at stages I and II. And I think the chance to survive has increased but they have to live with the complications of the cancer treatment." (HCP 14, nurse, F)***
>
> ***“The traditions and culture regarding physical activity, breast cancer, women can differ between areas whether in cities, villages and refugee camps and between single or married women. In general, it’s changed for the better in some areas and still somewhat negative in others.” (HCP 10, oncologist, M)***
>
> ***“Different campaigns and social media have helped a lot in the last years of increasing the level of awareness regarding the early detection of breast cancer, maybe we can use the same to increase the awareness regarding the importance of physical activities among all cancer patients.” (HCP 14, nurse, F)***

Palestinian women sought more group activities, and contact with other women who had been treated for cancer. They said it didn’t matter what type they had as long as they were women who had cancer.

Palestinian women knowledge that their changed physical appearance was a common issue in the group, and there was no need to hide their illness or explain why their physical performance was so poor, was especially helpful. They suggested they could discuss their feelings with them, and share their suffering easily with these women, more so than with their families. There are limited group therapy activities in the West Bank funded or organised by NGOs, non-profit institutions or local people's fundraising campaigns, which are thus available to all women after breast cancer. Examples of these have been organised by Dunya Women's Cancer Clinic, including a recreational trip to the Dead Sea beach and walking activities in parks, which allow women to walk and laugh together as a group after finishing breast cancer treatment, under the supervision of a nurse and physiotherapists from the clinic.

> ***"Meeting other women with cancer, talk to them and engaged in some activities helped me a lot during and after my cancer treatments finishes, we encourage each other as breast cancer survivors and this makes it easier for us to be active." (WABC 16, 62Y)***
>
> ***"I think going to group therapy meetings was important to me as I met women having the same problems as me and that sharing my concerns, they give me real support, you know the old proverb, 'Ask the experienced rather than the learned!'" (WABC 19, 42Y)***
>
> ***"I do believe that group therapy we are running was very crucial to me and it is still. When I start to meet women at Dunya clinic and we started to arrange going out to trips, I found it very nice as cancer survivors to give each other hope and strength to stay positive and active." (WABC 5, 45Y)***
>
> ***"I believe that more support groups for cancer women are needed. We do have special and unique issues to discuss together that nobody can understand it, but us as women after cancer." (WABC 6, 50Y)***

Spiritual and recreational activities were examples of group therapy for women who had cancer; many participants mentioned instances such as arranging a trip to go to pray at Al-Aqsa Mosque at Jerusalem and then walking around the holy city and going to pray at the site of Abraham's tomb (Sanctuary of Abraham/Ibrahimi Mosque) at Heron city in the West Bank, as well as walking and shopping.

> ***“You know that we women from Gaza are waiting for the approval of our permit for our follow up appointment, but also to go and pray at Al-Aqsa Mosque, walk around the old city and that is rewarding for us. When we were at Jerusalem for the radiation therapy, we were going and coming back each prayer, walking together as a group of women and we all had cancer but it was a motivation for us as we may not have this opportunity again.” (WABC 6, 50Y)***

Two participants talked of their experience of travelling with a group of women who all had cancer to the city of Mecca, where Muslims perform a pilgrimage (Umarhat) to Saudi Arabia. This free trip has been arranged three times over the last few years by Al-Sadeel society (a non-profit organisation) as one of its activities for women after they finished their cancer treatments. The only prerequisite to be included is to be active enough to be able to travel and do all the ritual physical activities. The women found these kinds of group experiences rewarding, both physically and spiritually.

> ***“Travelling to Mecca, to the holiest place, to perform Umrah(name of the journey to Mecca) was a dream for me. You know, while I was walking in circles around the Kaaba, I felt like a normal person like others as I was doing this on my own feet without being in a wheelchair, and that gives me a motivation to walk every day after I came back to stay as active as possible. It was a great experience physically and spiritually.” (WABC 6, 50Y)***
>
> ***“The chance to travel to Mecca with other women who are all cancer survivors was the most beautiful journey in my life, which gave me the strength and motivation to stay as active as I could. We were encouraging each other to go together.” (WABC 15, 49Y)***

Further, as studies suggest that self-stigma develops from public stigma, interventions could be developed to interrupt this process at the individual level and reduce or eliminate self-stigma, despite perceptions of public stigma (Vogel et al., 2013). HCP participants highlighted their wish to increase awareness about breast cancer in Palestinian society and to help those women and create group support for them. However, they reported it was very challenging to organise group therapy. Others wished to use social media to help cancer patients to cope better and be more physically active.

> ***“We can increase awareness regarding the importance of PA and cancer patients through social media such as Facebook, as many people of different age groups have Facebook accounts here in the West Bank. So, if we manage to create a group discussion on Facebook to discuss general problems as a beginning which maybe make it easier for women to meet other women with the same diagnosis. Secondly, that might be helpful for women to establish a group as the next step as those women may support each other and this can be a facilitator for them to be active.” (HCP 6, Nurse, F)***
>
> ***“Group consultations are difficult to manage here at governmental hospitals. We don’t have the space and the privacy, especially for women with breast cancer. We need more space, time and other logistic issues that are not available.” (HCP 4, nurse, F)***

Information sources and resources for physical activity

This sub-theme brings together thoughts about receiving any kind of information, recommendation or instruction regarding physical activities during and after breast cancer treatment. I asked women what they knew about PA participation and its relevance to them as breast cancer survivors, then if they had received information about physical activity. Some (13) reported that surgeons had mentioned that they should do some exercises after mastectomy and had given them oral instruction on how to do this. Others (7) reported that a physiotherapist had been in contact with them either once or twice during their stay at the hospital after surgery and that’s when they received information about PA and exercise regarding their health status. Some (9) mentioned that one of the oncologists had recommended they walk as much as possible, which they found useful. Women reported nurses gave them general recommendations about following a healthy diet and to be active as possible. However, all stated they did not receive any formal or printed written information, such as leaflets or brochures, to encourage them further or explain the importance of being physically active during or after breast cancer treatment. Women expressed their need to know more about the benefits of PA and to share this knowledge with their families to get support from them to participate in it. Many women spoke of this as an unmet need for them after cancer care.

> ***"Although I had a mastectomy, no instructions or exercises were given to me. Physiotherapists did not visit me while I was in the hospital. To be honest, I'm not sure why I did not receive any PA instructions, but maybe because it's a governmental hospital, they had so many patients and they don't have time!" (WABC 15, 49Y)***
>
> ***"I have not received any instruction regarding the importance of practising any type of PA before or after mastectomy, neither during chemotherapy or radiation therapy sessions. I did not see any physiotherapist during the whole treatment period at all." (WABC 19, 42Y)***
>
> ***"Well, I did receive instructions from the medical team at AVH hospital. They told me that you as a cancer survivor should live your normal life, be active as possible and walk all the time, but it was all verbal information." (WABC 30, 57Y)***
>
> ***"Yes, I have received some instructions and information from a physiotherapist during my stay at Al Najah Hospital where I did my mastectomy. The information has helped me to reduce pain and facilitate movement. The physiotherapist there was a very cooperative and told me to be active as possible." (WABC 34, 45Y)***
>
> ***"To be honest, yes, my surgeon and then physiotherapists after I had mastectomy at AVH hospital gave me instructions about physical activity. It was general instructions. For example, they mentioned to move the hand, arm above shoulder, do breathing exercise and to walk around. That's all, they did not explain it more. You know, I think because they are men, they did not know how to explain it more." (WABC 16, 62Y)***
>
> ***"I do not remember that I have been given any information about the importance of movement and being active as a breast cancer patient by doctors and nurses. Or the instructions were not given at least clearly enough to show it is an important recommendation. All of the instructions were short and verbal. I don't know if it because I had my treatments at a governmental hospital as they had so many patients." (WABC 9, 38Y)***

Only two women reported understanding the importance of PA participation and their source was the internet. Most of the information about PA and breast cancer and recommendations were in English or French, this was acceptable as they were fluent in both languages. Still, they wanted printed information about PA in Arabic and instructions in English may not be an option for all Arab women.

> ***"After I was diagnosed with breast cancer, I started to read about it, how to cope and what to do. Thus, I have read a lot of information about the importance of PA for cancer patients through the internet. I am doing lots of activities now and I think that my English and French language have helped me a lot to get the necessary health information for my case." (WABC 8, 56Y)***

> ***“I have a family member who lives in the US and she sends some links to read and videos about exercise after breast cancer and since then I’m doing these physical activities. However, it’s all in English.” (WABC 4, 62Y)***
>
> ***“I am an old lady, and I cannot remember everything. After chemotherapy, I forget so many things. I hope that they will give us some written instructions, especially about diet, exercises and physical activities, i.e. some leaflet or brochures that holding some pictures. This would be great. No one had given us such a thing.” (WABC 25, 70Y)***
>
> ***“Yes, I have received general instructions from a physiotherapist about the importance of exercise and some physical activities during my treatment but it was verbal. I wish I had a printed paper to read it from time to time.” (WABC 10, 43Y)***

HCPs highlighted the challenges they faced regarding information sources and resources about PA for cancer patients and how these challenges negatively affected their promotion of PA. Of all the HCP participants, 22 answered that they had instructed their cancer patients to be generally active, whereas 14 did not provide any instructions regarding PA during their consultations for several reasons.

> ***“I do know that PA is good for cancer patients and we give them instruction to be active to a reasonable extent.” (HCP 5, nurse, F)***
>
> ***“I do refer all breast cancer cases after surgery to a physiotherapist; as well I do give instructions regarding PA at this stage of their cases. Then you know that I don’t follow those cases as a surgeon as then they are followed up by their oncologist, so I don’t know much about their PA levels.” (HCP 25, surgeon, M)***

HCPs who do recommend PA to their cancer patients reported that their recommendations and instructions were verbally only, mainly due to the lack of written information about PA in Arabic and lack of availability of the material in their institutions.

> ***“As far as I know, we don’t have written leaflet for instruction or recommendations of PA for cancer patients.” (HCP 6, nurse, F)***
>
> ***“Regarding PA instruction, it is only verbal recommendations as we don't have any written instructions about PA and cancer patients or survivors here at the hospital.” (HCP 8, oncologist, M)***

Interestingly, some HCPs mentioned that they had no information regarding the effectiveness of PA and cancer patients, as this was not within their studies. Others expressed a wish to know where they could refer to these patients too.

> ***"Generally, I do recommend cancer patients to have a healthy lifestyle habit and be active as possible. But honestly, I do not give details concerning physical exercises as I don't know much about it." (HCP 18, surgeon, M)***
>
> ***"I don't know much about the role of physiotherapy with cancer patients, as well PA with cancer. I guess there is an issue of education curriculum in Palestine." (HCP 2, nurse, M)***
>
> ***"I think there is a need for setting up written guidelines regarding everything, including patients' care, survivor care, and PA recommendations to follow which will be helpful for both HCPs as well as for cancer patients." (HCP 22, oncologist, M)***
>
> ***"I think if we do have a map and a kind of information list for PA facilities (places) and physiotherapy clinics who have experience of treating cancer patients, that would facilitate my job as an oncologist as well as other HCPs of referring those patients to a physiotherapist and thus it will be a good idea to improve their PA levels." (HCP 14, oncologist, M)***

Health care professionals' role, responsibilities and referral for PA within the health care system

This subtheme presents the impact of HCPs' role and responsibilities on their promotion of PA to their cancer patients.

Most Palestinian women highlighted that it was the role of HCPs to give them instructions for PA. They preferred that oncologist among all HCPs should recommend physical activity to them as they trusted them.

> ***"To be honest, I do think that it's all HCPs' responsibility to inform us as breast cancer patients about what is safe and what useful physical activities that we should do and should not and how to perform them." (WABC 20, 34Y)***
>
> ***"I think it's the role of the doctors, oncologists to tell us as a breast cancer patient about the safe and good physical activities that we should do and how much is good for our health." (WABC 18, 40Y)***

They were not clear which HCP was responsible for giving them PA instruction and when. They were confused about some recommendations, as one HCP had recommended them to be active, while others recommended, they took it easy and to relax. They also had concerns about who they should consult and ask about their conditions.

> ***"To be honest, I'm confused who is responsible for PA recommendations, is it the oncologist, the surgeon, nurse or physiotherapists? I did not see any physiotherapist during my cancer treatment and am only now following up with oncologist for routine check-up examination and he never mentioned anything about PA or even physiotherapy!" (WABC 3, 42Y)***
>
> ***"I went to see the surgeon again after my arm started to get swollen (as I think am developing lymphatic oedema) after I finished radiation therapy. The surgeon said that the surgery was absolutely good according to his opinion and that I should follow up with the oncologist because this problem started after radiation and not after the surgery. The oncologist said that treating this swelling was not his role. When I asked him what his recommendation is, he said I should have had been referred to a physiotherapist and should have been given some exercises to prevent this. While the surgeon last time he said don't use it and keep it resting! I'm confused with what I should do and whom should I follow, resting or be active." (WABC 8, 56Y)***

HCPs also reported barriers to PA promotion, including their work setting, job description, and roles and responsibilities for cancer patients, including who is responsible for PA recommendations. The pressure of work at governmental hospitals was the main barrier for oncologists promoting PA to their cancer patients, as each oncologist will see 30-40 patients daily. HCPs described other priorities to discuss with their cancer patients, rather than detailed PA instructions or referring them to physiotherapy. In NGOs and private hospitals, HCPs had less work pressure but mentioned that PA recommendations were not part of their job description and they had a physiotherapist responsible for providing PA recommendations to cancer patients.

> ***"PA is important but it's the doctor's responsibility to recommend it. Therefore, I see that those women should visit the oncologists to get specific instructions from them and to remind them of what they should do and referring them to other health care professions, such as to physiotherapy." (HCP 15, nurse, F)***

> ***“It is not my role neither my responsibility as a nurse to give specific instructions to cancer patients regarding physical activity. The only recommendation I give is to inform them to be active and to practise their daily life routine activities as normal.” (HCP 31, nurse, F)***
>
> ***“From my experience as a resident doctor in the oncology department, many cancer patients including breast cancer survivors are not given PA instructions during their medical appointments and rarely are they referred to physiotherapy unless they are complaining of lymphoedema.” (HCP 7, GP, M)***
>
> ***“The work pressure that we have on oncologists, sometimes the lack of time due to a shortage of staff, will increase the pressure to have priorities on what to discuss with their cancer patients and to be honest with you, and PA recommendations comes last! Also, the lack of written instructions regarding PA with cancer patients in the hospital makes it harder for both the doctors to remember that they should recommend PA to their cancer patients as well as for patients to commit to doing it if they do not have a written instruction. They both can forget about it or feels it’s not important to do it. Therefore, written, simple, concise PA recommendation is required.” (HCP 10, oncologist, M)***
>
> ***“Honestly, as for me as an oncologist, I see 30 -40 cancer patients daily, I do not have time to give them such PA instructions or even write a referral order for them.” (HCP 1, oncologist, M)***

Further, the referral schemes for physiotherapy or PA is different in Palestinian health care institutions. According to the Palestinian health care system, a specialist physician is responsible for referring patients to physiotherapy, whether they are an inpatient or outpatient. Thus, for cancer patients, either the surgeon or the oncologist could refer to those cancer patients to physiotherapy. But due to their work pressure, and/or lack of awareness regarding PA or physiotherapy, they may not have time or be willing to refer their cancer patients. NGO institutions and private hospitals have less restrictive referral systems to physiotherapy and physical activity, thus it was easier for physiotherapists to give cancer patients information regarding physical activity, as this is part of their job description.

> ***“Recommending PA is the role of physiotherapy; however, referring cancer patients to physiotherapy is the responsibility of their doctor. Therefore, there is a gap here in the Palestinian health system and the patient may lose the chance of getting the efficient PA recommendation according to their physical abilities.” (HCP 36, PT, F)***

> ***“There is a shortage of staff of all HCPs who are treating cancer patients, especially physiotherapists in governmental hospitals which have oncology departments. We have only 3 physios in the two main governmental oncology hospitals at which they cannot see all cancer patients and that’s the main barrier for them to promote physical activity.” (HCP 36, PT, F)***

Fragmentation within the Palestinian health care system impacts on the follow-up of cancer patients. Oncologists found it difficult to follow up with their cancer patients, as they will see the patient and refer them to either surgery or chemotherapy. Then patients decide if they will have surgery and chemotherapy at a private or governmental hospital, depending on their medical insurance and preferences. After that, the patient will then come back to the oncologist to be referred for radiation therapy at AVH /Jerusalem and then they may or may not return for a follow-up. This discontinuity in care negatively affects perceptions of the oncologist’s role by their cancer patients and reduces oncologist’s ability to promote PA or not.

> ***“I think that the Palestinian Ministry of Health needs national guidelines concerning cancer to follow up care and it should include physiotherapy to cancer patients, as they will provide them the sufficient PA instructions.” (HCP 17, PT, M)***
>
> ***“Maybe, all hospital needs to work more effectively in a team which we have here, as we have a roundly weekly meeting with all of the oncology department’s HCPs, but we have so many things to discuss and PA or physiotherapy is not the priority in most of the time!” (HCP 21, nurse, F)***
>
> ***“There is a gap in Palestinian health care system of following up cancer patients after they are discharged from hospital, and second those patients are not referred to physiotherapy, therefore we don’t know much about those patients, especially women in their survivorship stage.” (HCP 29, PT, M)***
>
> ***“To be honest, PT and PA recommendations are not that issue for the Ministry of Health to work on, although it might be simple, we have more challenges nowadays to work on which is the shortage of staff, shortage of cancer drugs, as only 70% of it are available in governmental hospitals and the rest needed approval from Israel to get to us. So, basic issues are lacking in cancer units and that’s the Ministry’s priority to work on it.” (HCP 28, oncologist, M)***

Palestinian health care fragmentation was highlighted by many women, complaining that they had to be seen in three or four different places, which made their cancer journey harder than they imagined.

> ***“We don’t have one holistic institution for cancer patients in Palestine. I did the surgery in Ramallah governmental hospital and the chemotherapy at Nablus and then the radiation therapy at AVH in Jerusalem. Now, I’m following up at Nablus. Each time you had to tell your story from the beginning for each new HCP you meet and sometimes you feel fed up as you are meeting new faces and they know nothing about you and each one, whether it was doctors or nurses, say something different. I wish we had one place to go to!” (WABC 9, 38Y)***

Finally, all women said their experiences with the oncologists were not productive from their perspective. Women mentioned that the oncologists were so busy; they spent the time writing up notes on the computer, checking for previous results of CT scans, blood tests etc and asking for new prescriptions of hormone therapy and other examinations. Instead, women said they wished they could discuss their daily life activities regarding their current health status or their concerns about participating in physical activities.

> ***“I went to the oncologists and have many questions in my head, including asking him about going back for the gym, but he said that he doesn’t have time to discuss issues with me as his time is so limited and that everything is ok with me. He renewed my hormone therapy medication, ask the routine CT on the system and that’s all.” (WABC 22, 39Y)***
>
> ***“I think that our oncologists need to be trained on how to communicate effectively and nicely with cancer patients. I know that they are so busy, but even he did not look at me. He spends the time reading my previous results and writing on the computer and then he told me to take care!” (WABC 17, 55Y)***
>
> ***“I can see that all medical teams have heavy workloads, especially in governmental hospitals, so they only discuss the basic things with their cancer patients. Still, I think most of the medical staff, especially male doctors, are lacking communication skills with female patients as they do not know sometimes how to even motivate those cancer patients.” (WABC 27, 50Y)***

When I asked all the women in this study, if they would like to add something, expressed a wish or desire for their voices to be heard. Women felt female surgeons or female oncologists might be more empathetic when discussing their problems or concerns with them. They were specific that they wished to discuss their worries regarding body, posture and self-image, fertility, periods and sexual issues. They stated these subjects were not a priority for male oncologists or surgeons.

Some mentioned discussing these subjects with nurses, as most were female but this was particularly important to younger women in their 30s and 40s. One said this could be due to the emotions, embarrassment and shame which can hinder timely diagnosis and therefore appropriate treatment for women. Embarrassment and shame can be related to cultural and religious barriers, including the predominance of male doctors (Albarghouthi and Klempe, 2018).

> ***"I think there is a need for more female specialists such as a female surgeon, female oncologist, and more female doctors as they might be able to provide more psychological, mental and physical support to women with breast cancer. You know that we have special and unique issues to discuss with them that male physicians cannot understand." (WABC 6, 50Y)***
>
> ***"So far, I cannot discuss everything freely with the male doctors, especially about some women's issues like interrupted or irregular menstruation or some problems with my sexual life due to the hormone therapy, as I feel am a bit shy as I don't know what they are going to say behind my back, and even if I asked, they don't explain much and I guess that they do not understand what women are going through." (WABC 25, 41)***
>
> ***"I was hesitated to discuss my wish with my oncologist of being pregnant. I have two young children but am thinking of having another baby. I think I should consult a female gynaecologist better." (WABC 12, 30Y)***

5.5 Summary

This study is the first exploratory study of the factors affecting PA participation among Palestinian women after breast cancer and PA promotion by HCPS working with cancer patients in the (oPt). Findings highlighted that Palestinian women face some similarities with women in other cultures, relative to their daily living with cancer treatment side effects and altruism regarding their position as mothers. However, their experience of changing identity, body image, their position in society as women after breast cancer as well as the social attitudes to PA are additional characteristics affected As Arab/Muslim women.

Chapter 6: Discussion

6.1 Introduction

This chapter introduces the achievement of research aims and objectives then it contextualises the principal findings of both phases within the current literature and describes the contribution of these findings to the field of study.

6.2 Achievement of research aims and objectives

I begin by re-examining the research question and highlighting how it was answered as well as how the research aims and objectives was achieved.
The following research questions guided study:

1) What factors affect PA participation among women after breast cancer worldwide?
2) What factors influence HCPs' promotion of PA to their cancer patients?
3) How much PA do Palestinian women do after breast cancer treatment?
4) What are the barriers and facilitators to PA for Palestinian women after breast cancer?
5) How do HCPs working in an oncology setting in the Palestinian territories promote PA to their cancer patients?

I have addressed the research questions, aims and objectives through two phases because of the paucity of research on this particular topic, thus an exploratory study needs to use a combination of primary and secondary data with different methods.

The first phase of this research, was based on reviewing literature resources and secondary data. Thus, I conducted a meta-narrative systematic review study (chapter 3) and the results answered research question 1 and 2. The results encompasses different perspectives, concerned with the perspectives of women after breast cancer and those of health care professionals. Systematic reviews are valuable for informing clinical decision making. This systematic review included twenty-five studies where only some women had finished initial treatment and those still on hormone therapy. The review found a group of factors were critical for physical activity participation among women after breast cancer and among HCPs who have an essential role in promoting PA to their cancer patients. These findings show the impact of social and cultural attitudes to physical activity, in particular among women after breast cancer from diverse nations and highlighted the paucity of research undertaken with women from different ethno-cultural backgrounds. However, this phase was not enough to know whether these factors are relevant to all women. Understandings of the specific factors influencing PA participation in Arab/Muslim populations remain scarce. Very few studies have explored PA among Arab/Muslim women, and none specifically address women after breast cancer. For that reason, I needed the second phase as I intended to illuminate what factors affect physical activity participation among Arab/Muslim women, who mainly live in the Middle East. Accordingly, in phase two of this research, I presented the results associated with research questions 3, 4, and 5 by conducting an exploratory qualitative case study (chapter 4 and 5). I, conducted exploratory qualitative interviews with 35 Palestinian women after breast cancer and 36 HCPs working with cancer patients in the oPt. The findings, developed using deductive thematic analysis, built understandings of what might hinder or facilitate Arab /Muslim women after breast cancer participating in PA.

Four themes identified a range of critical factors for PA participation among women after breast cancer; daily living with breast cancer, altruism, changing identities, and promoting physical activity. HCPs were shown to have an essential role promoting PA to cancer patients based on the following themes: beliefs about physical activity; fear of injury; social support of PA and information about physical activity and roles and responsibilities of HCPs regarding physical activity, the referral scheme, and resources for physical activity.

I will contextualise these within current literature in the next sections.

6.2 Discussion of overall principal findings

I will start this section by highlighting the differences between the current study and previous studies, probably due to variations in time and design of search strategies in reviews.

Previous reviews focused on certain types of cancer and included mixed cancer populations at various stages of treatment and reviews that concentrated on breast cancer included women at different stages of treatment. However, the systematic review study explored factors affecting PA participation among women after breast cancer only and from the perspectives of women and HCPs'. In the 25 included studies, the same factors were consistently reported irrespective of study design. I did not focus on detailed quantification of PA participation; instead, I was interested in gaining an in-depth understanding of the factors influencing women's participation in PA after breast cancer mostly from qualitative studies. Thematic synthesis was applied to the 25 included studies and findings showed the wide range of factors that might affect PA participation among women after breast cancer, as well as the health care professional's role in promoting PA to their cancer patients. The results emphasise the impact of social and cultural attitudes to physical activity, in particular amongst women after breast cancer from diverse nations and highlighted the gap in research undertaken with women from different ethno-cultural backgrounds. Hence, understandings of the specific factors influencing PA participation in Arab/Muslim populations remain scarce. Very few studies have explored PA among Arab/Muslim women, and none specifically address women after breast cancer. I, therefore, conducted exploratory qualitative interviews with 35 Palestinian women after breast cancer and 36 HCPs working with cancer patients in the (oPt). The findings developed using, deductive thematic analysis, build understandings of what might hinder or facilitate Arab /Muslim women after breast cancer participating in PA.

6.3 Level of Physical Activity

It is well understood that a comparison between PA studies should be made with caution, since wide variations can exist in the age range, representation, PA assessment and inactivity criteria.

However, it is essential to put the inactivity prevalence findings from this study into perspective and compare it with that of international prevalence data.

First, the women in the systematic review study (chapter 3) were aged from 25 to 75 years, and in the qualitative study, participants were between 30 and 70 years old. Further, women participants in both studies had either no other medical problems or multiple co-morbidities presenting a diverse group where some have good health and other chronic diseases (Jørgensen et al., 2017).

Second, a set of consistent findings emerged regarding the level of PA participation, as most women participants in both phases experienced a decrease in their level of PA compared to before their diagnosis with breast cancer. In particular, all Palestinian women at the exploratory study (phase 2), expressed doing a less PA after their breast cancer treatment with their IPAQ-SF showing them to be physically inactive. Over two-thirds of the women reported no moderate or vigorous activity, only taking part in a light-intensity activity, including walking for a mean of 25 minutes and then not on a regular daily basis.

Using the IPAQ-SF was initially designed to assess whether respondents were meeting the PA recommendation of a minimum of 30 minutes of at least moderate-intensity PA on five or more days of the week. The results from this study have shown that these Palestinian women were not adhering to guidelines (Courneya, 2017; Cormie et al., 2018). These results are not surprising when compared to PA levels among healthy Palestinian women. Data on the PA levels of Palestinians, in general, are limited; however, Palestinians showed low levels of PA (Abdul-Rahim et al., 2003;2014) and Arabs who live in Israel were less physically active than Jewish people (Baron-Epel et al., 2005). A study investigating the role of culture, environment and religion on PA among healthy adults living in Israel found that the Arab community was less physically active than the Jewish population (Shuval et al., 2008).

Many studies show gender and age influence PA participation; for example, Merom et al. (2012). Kalter-Leibovici (2010) explain the disparities in PA between Palestinian or Arab/Israeli and Israeli women suggesting physical inactivity was higher among Palestinian women due, in part, to familial, social, cultural or environmental barriers. These results from the IPAQ sitting question indicate Palestinian women spent more time sitting in a day than doing any kind of physical activity, with a mean of 338 minutes (more than 5 hours). Sitting results varied according to age, as younger women reported sitting for less time than older participants and these variations are possible due to the cultural norms and roles of women according to their age in Palestinian society. Older women do not have to do much, or even any, domestic and household activity because of deeply-rooted religious and cultural norms emphasising the duties of younger generations towards their elders in most Arab countries (Shuval et al., 2008).

Similarly, in a study from Japan of 28 women aged 20-64 receiving adjuvant chemotherapy, participants spent over 70% of the day working quietly in a sitting position (Tonosaki & Ishikawa, 2014). Older Korean women thought themselves less fit, having more fatigue and a poorer health status, perceiving ageing and co-morbidities as barriers to PA participation (Kang et al., 2014). Older age, lower levels of education and clinical factors in women with breast cancer were also associated with lower PA participation (Boyle et al., 2015; Kampshoff et al., 2016; Welch, 2017) and being older and female is associated with less PA participation in colorectal cancer patients (Downing et al., 2015; Husson et al., 2014).

Fisher et al. (2016) reported that patients aged over 65 with more than one co-morbidity showed less interest in physical activity, which is associated with less participation. Differences in estimates of PA in breast cancer varied by disease stage, age, presence of chronic conditions, and race(Welch, 2017). Thus, although older Palestinian women's levels of participation after breast cancer were comparable with other women after cancer from different backgrounds, given the negative consequences of sitting (Hamilton et al., 2008; Owen et al., 2010), HCPs should play a role in promoting PA and encourage women from all age groups to spend more time participating in moderate PA and walking, rather than sitting.

The environment in which women after breast cancer live was found to affect PA participation in this research. This affected all women, whether they lived in rural, urban or different living environments. Lawler et al (2010) found that women perceived a lack of available medical, psychosocial and community resources or PA facilities for rural breast cancer survivors in their areas, which may deter them from being physically active. Particular, to Palestinian women, the ones living in disadvantaged neighbourhoods, such as refugee camps or Area C, felt a greater sense of disruption than those in cities and villages. The environment in camps is poor, with overpopulation, poor hygiene and troubled infrastructure, which negatively affects PA participation. This is in line with Bates et al.'s (2017) who stated that across the occupied Palestinian territories, there is a diverse tapestry of factors affecting women's health, which varies across regions and localities (Bates et al., 2017). Also, others have shown that women who live in socioeconomically disadvantaged neighbourhoods are at heightened risk of physical inactivity and obesity, directly related to the lack of access to sports equipment and the perceived safety of the neighbourhoods (Kampshoff et al., 2016). A recent review of PA in developing countries supports this association between safety of the environment and physical activity, rural (vs urban) residence, distance to non-residential land uses, and "composite" features of the physical environment (Day, 2018).

For most rural environments, socio-cultural factors were influential, where less social support from family and friends was significantly associated with lower PA among women in general, as well as among women with breast cancer (Beltaïfa et al., 2009; Jones & Paxton, 2015; Kampshoff et al., 2016).

Brown et al. (2003), found PA and leisure activities in women are influenced by their level of income, time and having access to facilities and programmes, as well as the cultural expectations of what is considered appropriate behaviour for a woman towards her family. Palestinian women in this study did not directly describe their health and returning to work as influencing their PA participation. However, they reported that financial issues negatively affected their PA participation with women ascribing to the view that women's rightful place is in the home to provide and care for male members of the family. This, coupled with limited work opportunities, has led to a striking female employment gap in the Palestinian labour market. According to the Palestinian Central Bureau of Statistics (PCBs), Palestinian women account for 20.9% of the formal labour force in rural communities, 16.8% in urban communities and 15.7% in refugee camps. Approximately 32.9% of Palestinian women are unemployed (25.3% in the West Bank; 50.1% in the Gaza Strip) compared to 20.5% of Palestinian men (17.3% in the West Bank; 26.8% in the Gaza Strip), one of the lowest levels of labour force participation in the world (Pcbs.gov.ps, 2019). Several studies described how cancer survivors, especially female with breast, gastrointestinal and female reproductive organ cancers are at significantly increased risk for unemployment and early retirement, as well as less likely to be re-employed (Lindbohm et al., 2013; Noeres et al., 2013; Silver et al., 2013).

Although women’s level of education in the two phases was varied, the level of education of all participants did not indicate any significant differences in PA participation after breast cancer. This is in line with previous research which showed no significant association between PA and employment status or level of education (Kampshoff et al., 2016). However, this literature on in women after breast cancer is limited.

This is the first study to assess PA levels in Palestinian women after breast cancer and provides insight into what might affect their PA participation after breast cancer. Palestinian women's self-reported PA is far below recommended levels; however, it is in line with other studies conducted in non-Arab/Middle East countries which also describe a decline in PA participation after breast cancer treatment in women in Turkey (Ogce & Ozkan, 2008) and Israel (Prigozin et al., 2010) and at other settings which showed that PA participation did not recover in the first year after treatment (Devoogdt et al., 2010; Hidding et al., 2014).

6.4 The context of the principal findings and their implications on physical activity participation and promotion

According to Lincoln and Guba (1985), the final interpretive phase constitutes the "lessons learned"; thus, the overall findings indicate clear similarities in Palestinian women's experiences after breast cancer and the factors affecting their PA participation with other studies.

Findings highlighted that Palestinian women face similar constraints to other women in activities of daily living including cancer treatment side effects and altruism due to their position as mothers. However, the collectivist Palestinian society affects female identity and in particular, has a negative effect on women after breast cancer. In addition, Palestinian women experience changing identity, affecting their body image, their position in society as women after breast cancer as well as the social attitudes to PA. These are all factors to consider when promoting physical activity and also affects HCP attitudes towards promoting PA to Arab/Muslim cancer patients, especially women after breast cancer. HCPs need to consider their patients' ethnicity/race and religion when promoting physical activity in different cultural settings.

6.4.1 Theme one: Daily living with cancer treatment side effects

Both the physical and psychological consequences of cancer treatment-related side effects impact on women's PA participation (Hayes et al., 2010, 2012; Binkley et al., 2012; Gegechkori et al., 2017). These were highlighted by both phases in this research as presenting a significant barrier to PA participation for the women, especially those with co-morbidities.

HCPs also demonstrated that their cancer patients' health status might affect their decision to promote PA to them.

Ongoing physical side effects from breast cancer treatment contribute to a prevailing negative influence on women's lives, most frequently mentioned were fatigue, lymphoedema, joint limitation and pain. Most women expressed struggling with fatigue and found it a barrier to PA participation. Fatigue is described in other studies as the most common persistent side effect in women with and after breast cancer (de Jong et al., 2006; Penttinen et al., 2010; Charlier et al., 2012; Huang et al., 2014; Oh & Cho, 2020). Some Palestinian women reported being unable to complete certain activities to the same level or in the same way as they did before breast cancer which they attributed to fatigue. These findings are commensurate with a cross-sectional survey of Palestinian female patients with breast cancer in the Gaza Strip, showing that 59% of women had decreased day-to-day activity (Alaloul et al., 2019). The unpredictability of fatigue was a distressing feature impacting on women's daily life in many long-term conditions (Whitehead et al., 2016).

This research also identified that HCPs were aware of their cancer patients' health status and recognised it might be a barrier for them to be active and this influenced their decision whether to recommend PA or not. However, most HCPs working at the oPt reported that they did not promote PA if their cancer patients had multiple side effects and were more cautious or reluctant to promote PA to women with multiple co-morbidities. These findings contrast with those from a study of HCPs in Germany (2019), which showed characteristics including "medical side effects" and "low affinity for physical activity" were frequently judged by HCPs as reasons to recommend PA (Haussmann et al., 2019).

This suggests there is a need for HCPs to make judgements on what level of PA to encourage on a case-by-case basis, paying attention to symptom management and side-effects of cancer treatment, to help women overcome these side effects if possible. All HCPs should work to improve the PA of women after breast cancer treatment during follow-up (Oh & Cho, 2020) and are encouraged to follow the 'Ask-Assess-Advise' structure for discussing PA in the consultation (Haseler et al., 2019).

Having breast cancer on the same side as their dominant hand negatively affected participation in activities of daily living more than if it was on their non-dominant side similar to findings from a study of Australian women (Hayes et al., 2010) since upper-body morbidity is typically associated with adverse physical, psychosocial and social ramifications this profoundly influence all aspects of daily life and quality of life (Hayes et al., 2012).

Restriction on outdoor movement, imposed by the political situation, pervades every aspect of life for Palestinians (UNRWA, 2020). This is a significant factor hindering PA participation among Palestinian women after breast cancer and PA promotion by HCPs. All participants, both women after breast cancer and HCPs, living in Area C, in refugee camps or the Gaza Strip, reported that Israeli army checkpoints restricted, and sometimes, prohibited movement from one part of the

West Bank to the other. This negatively affected PA participation and/or promotion of PA by making simple activities, such as walking outside, extraordinarily complicated for Palestinians living under occupation in these areas. These findings make it clear that Palestinian women's experiences of PA outside their 'home' cannot be separated from the geopolitical context and living environment. Women were afraid to go outside due to recurring incidents of violence, incursions and airstrikes by Israeli security forces (Giacaman et al. 2009;2010). Other studies in Palestine (Sousa et al., 2014; Hammoudeh et al., 2016), also highlighted the adverse effects and distress that living in an environment that no longer facilitates ease and wellbeing. Some studies have found that living in more walkable neighbourhoods is linked to higher rates of PA (Berke et al., 2007; Ding et al., 2011; Warsini et al., 2014) as access to safe, and walkable neighbourhoods allow people enjoy outdoor activities in their lives. While, poor, unsafe environments and perceptions that walking in the neighbourhood is not comfortable, makes being active outdoors more difficult, especially to older adults (Gebauer et al., 2020).

While some women with breast cancer found it hard to cope with the psychological consequences of cancer, negatively affecting their PA participation, others experienced hardly any effects on their PA after breast cancer. This research has highlighted clear parallels between Palestinian women's psychological experiences and the experiences of women with breast cancer in other settings in terms of stress, anxiety and depression, particularly in developing countries (Al-Azri et al., 2009).

The literature identifies a variety of predictors for women’s adjustment. In ethno-cultural studies of women's experiences of breast cancer, findings showed adjustment might depend on factors including the quality of the marital relationship, the family context of breast cancer experiences, support from informal social networks and coping with cancer through spirituality and community involvement (Howard et al., 2007). Some Palestinian women in this study explained that their feelings of stigma and shame increased their need for confidentiality and forced them to hide their illness from neighbours and friends. This resulted in them refraining from socialising. Similar behaviour has been previously identified in other studies in Arab or Muslim countries including Arabs in Israel, Jordan, Lebanon, Iran, Pakistan and Oman (Azaiza & Cohen, 2007;

Azaiza, 2012; Alqaissi & Dickerson, 2010; Doumit et al. 2010a; Joulaee et al., 2012; Banning & Tanzeem, 2013; Al-Azri et al., 2013). Taken together, these findings demonstrate how the cultural context may have negatively affect women's PA participation after breast cancer.

In contrast, many Palestinian women reported finding meaning in life through spiritual consolation. Palestinian Muslim women reported that having faith in God and living up to the values and teachings of Islam helped them to be physically active. The Muslim women said that being a Muslim and following Islamic religious roles was a facilitator to engage in PA and positively affected all daily physical activities, especially outdoor activities. They explained that they could and did combine PA and religion. As well as religion being a way to cope with the psychological side effects of breast cancer, it was also a strategy to be more physically active. Aflakseir and Coleman (2011) believe that religious teachings in an Islamic context encourage people to trust and turn to God in times of need, such as having breast cancer. Consistent with this, Arab Muslim participants in Israel also believed that Islamic religion promoted PA and did not consider it specifically restrained PA (Shuval et al., 2008).

Some Palestinian women believed praying was a strategy to be physically active and studies from Muslim Non-Arab counties in the Middle East, including Iran and Turkey, have found that Islamic religious rituals positively influence the activities of women with breast cancer.

Rahnama et al. (2012) describe how Iranian cancer patients performed religious activities involving "prayers", "visiting the holy area" and "mentioning God", which positively rewarded them physically and spiritually (Rahnama et al., 2012). Similarly, in Turkey, Guz et al. (2010) found that women with breast cancer engaged in several religious and spiritual activities, such as praying and visiting a holy place, such as a tomb. Nearly a third of those Turkish women reported improvement in their condition as they felt better and preserve a sense of meaning and purpose in life.

Women of other ethnicities, including Latinas, Mexican, Asian, African American and Chilean, with breast cancer reported feelings of comfort, wellbeing and protection through spiritual practices, such as praying and attending church (Allen et al., 2012; Thuné-Boyle et al., 2012; Visser et al., 2009; Choumanova et al., 2006). African American women also consider faith as an essential part of everyday lifestyle and a significant aspect to health and wellness (Debnam et al., 2011). Further, a meta-analysis encompassing over 32,000 adult cancer patients suggests that greater religious belief or spirituality is associated with better patient-reported physical health (Jim et al., 2015) however, studies have not determined the precise mechanism by which this occurs (Bradshaw et al., 2014; Bradshaw & Kent, 2017).

HCPs' identified the positive influence of religion and spirituality on their cancer patients' psychological status in line with studies from Pakistan (Sayeed & Prakash, 2013; Ijaz et al., 2017). Some reported using religion and spirituality as a strategy to facilitate PA participation by encouraging their cancer patients to walk and perform their daily prayers at the mosque. Thus, HCPs need to be aware of the culturally important roles that religion and spirituality play in coping with cancer and should be empowered with the spiritual knowledge and skills to respond to the needs of cancer patients at an intensely stressful time (Swihart & Martin, 2020).

6.4.2 Theme Two: Female Identity

Female identity impact on all women, principally family obligations, female caregiver roles, household and domestic commitments, all of which influence PA participation for many Palestinian women after breast cancer.

Almost all women in both studies reported it was important to be active for their families but revealed how hard it was for mothers after breast cancer to put themselves first (Mackenzie, 2014). Thus, the negative impact of the traditional female caregiver role was a strong feature in Palestinian women's narratives in this study, especially for women aged 30-50 years affecting their PA participation.

Other social constraints restricted the freedom of Palestinian women including needing to ask for permission when going outside the home and not participating in gender-integrated physical activities. Several studies conducted in healthy Arab women show women usually stay home once they get married and these mothers were less physically active because of the socio-cultural barriers of commitment towards their home, family and child care (Musaiger et al., 2000; 2004).

Younger women in the two phases of this study reported their family obligations were their priority and that they lacked time to do any PA for themselves. There were similar findings among other women from diverse cultures as Turkish women surviving breast cancer, explained that their duties, according to the Turkish society, was taking care of their husband and children and fulfilling their needs (Cebeci et al., 2012). These obligations undermine PA as a priority compared to family responsibilities. This is also shown in a recent study of 447 healthy Arab Muslim mothers (aged between 18 and 40 years) of young children (aged up to 5 years), which showed family responsibilities were the main factor decreasing PA (Eldoumi & Gates, 2019). Worldwide research suggests young mothers experience alterations in their PA habits after having children and perform significantly less PA compared to women who do not have children (Berge et al., 2011; Brown et al., 2001; Falba & Sindelar, 2007; Monteiro et al., 2014). An Australian study found women felt twice the pressure of having inadequate time to exercise than men, and the presence of children increased that pressure even more (Brown et al., 2000; Gunthorpe and Lyons, 2004).

Feeling guilty was another altruistic factor which negatively affected their ability to get access to a gym or buy appropriate clothes for participating in outdoor physical activities. Many said their low economic status increased the challenges to their life after breast cancer. These feelings of guilt are similar to other women with breast cancer from different societies (Brunet et al., 2013). For example, in Pakistan, some women felt guilty because they had to spend their savings on breast cancer treatment and associated expenses, rather than on meeting the needs of their family (Banning & Tanzeem, 2013). This cultural perception of family responsibility exerted pressure and guilt on these women after breast cancer because their illness affected their ability to support their family. Similar findings were shown in Filipino women with breast cancer (Burke et al., 2012).

Many women in this research reported household and domestic commitments as negatively affecting their PA participation, finishing these duties before considering any other activities. However, Palestinian women reported that undertaking their family responsibilities and completing their domestic commitments was a motive to stay strong and active. Similarly, a study of young Asian American women found caretaking and work created a sense of normality that helped them cope with their breast cancer diagnosis and treatment (Yoo et al., 2015). These feelings are complicated by social security and cultural issues, including fear of being divorced or being a second wife. These concerns gave the Palestinian women a motive to stay active and energetic to fulfil their role as a wife and a mother, secure their place in the family. This does not appear in other Western studies, although Filipina women with breast cancer living in the US expressed difficulty in adapting to the change from caregiver to care receiver. They perceived the role of the caregiver as being always available to help and even sacrificed their own health to support others (Burke et al., 2012).

Research shows that self-concordant goals are more readily pursued, better achieved, and their attainment can lead to increases in well-being (Koch & Nafziger, 2011). Sheldon & Elliot (1999) describes self-concordant goals as those that are 'consistent with our developing interests and core values'. The self-concordance model suggests that when pursuing self-concordant goals, success is achieved through the greater sustained effort put into achieving them, and the greater well-being which follows when we achieve them (Sheldon & Elliot, 1999). Women after breast cancer described being able to do their assigned role at their home as mothers or carers as well as returning to finish their household chores as before is a big accomplishment. They found these valuable to regain a sense of their former self and female identity, because it meant validation and achievement to them as part of the Palestinian society and culture.

Findings show that HCPs in this study recognised women's responsibilities and family obligations affected PA participation. However, they used altruism as well as female identity roles and responsibilities as a strategy to promote PA participation to afford them an active role instead of transitioning to a 'sick role' and sedentary life. HCPs who work at the oPt knows the culture and steer women with breast cancer towards doing things that matter to them and be as active as possible. Research shows that the most promising means of altering one's happiness levels is through intentional activity (Sheldon & Houser-Marko, 2001).

HCPs in our exploratory study used self-concordance through goal attainment and advised women to keep themselves as active and strong as possible to fulfil their role as wives and mothers and attain happiness. However, HCPs could become more involved in the education of breast cancer patients about the timing of returning to work and activity (Banning, 2011; Désiron et al., 2013). Therefore, health care professionals should encourage breast cancer patients to work, be active and engage in hobbies. They should steer them towards doing things that matter to them, which they enjoy.

6.4.3 Theme Three: Changing identity

Many women reported changes in identity after breast cancer treatment. This includes a sense of self and body image-related distress, was mostly seen in younger women. A systematic review suggests body image is a complex post-treatment concern for breast cancer survivors, particularly in younger women (Paterson et al., 2015) and previous studies in different settings, show 20-40% of women treated for breast cancer became embarrassed to show their body or scars (Fang et al., 2012) and felt uncomfortable with the changes to their physical appearance after breast cancer treatment (Sun et al., 2017).

Altered body image complicates the connection between identity and the body, particularly the breasts. These are seen as a symbol of femininity and sexuality and influence a woman's sense of returning to normal or not. Rice (2002), states “A woman's body is often her currency, its value measured according to heterosexual standards of desirability”. Many young Palestinian women in this study, particularly those who had a mastectomy appeared to develop a sense of their body and their sexual attractiveness as a result of other people’s assessment, especially their spouse. This might be explained by women's gendered socio-cultural roles in marriage and family, which are focused on meeting the husband's needs. Exploring the male perspective, Taha et al. (2013) interviewed Jordanian /Arab men about their perceptions of women with breast cancer and found a man’s rejection of a wife diagnosed with breast cancer may be related to the husband’s failure to meet the burden of his obligations towards the wife, and his wife’s failure to meet the husband’s marital needs. Iranian men reported being anxious about seeing their wife’s body and avoiding sexual activity (Nasiri et al., 2012). Women in Korea also expressed concerns about their sexuality and feelings of not being attractive to their husbands after mastectomy (Suh, 2013). Meltzer and McNulty (2010) argue that women’s body image may shape their relationship satisfaction with their partner and women with poor body image may be more likely to doubt that their partners will continue to accept them.

It is generally supposed that husbands should support their wives through good and bad times. However, this cannot be said of all the husbands of the Palestinian women in this study. Palestinian women described needing support from their husbands, whether physically or emotionally, during and after breast cancer but their husbands rejecting them. This profoundly affected their mutual activities and negatively impacted on their PA participation, especially outdoor activities. Similar findings were found in Turkish women after mastectomy (Kocan & Gursoy, 2016) leading to decreased valuing of the self and women limiting their physical and social functioning, including PA participation.

Some Palestinian women suggested wearing the hijab improved their self-image, specifically if they did not wear it before breast cancer. Some young women expressed this was a "personal choice"; others kept wearing it all the time. Participants wearing the hijab reported a more positive body image around others suggesting it provided a way to protect themselves from others, as they felt they looked good in the hijab, as well as it being a way to be brought closer to Allah. It was perceived that wearing the hijab was essential for these participants to feel more 'normal' in Palestinian society. In a Tunisian study, women reported wearing loose clothes and a scarf after mastectomy, as they could no longer look at themselves in the mirror and needed to accept and take ownership of their modified body before they could share it with others (Masmoudi et al., 2016). Literature from studies of Iranian women describes them trying to find personal strategies to look normal (Zeighami Mohammadi et al., 2018).

For some women, participating in PA while wearing the hijab is seen as difficult. In contrast, for others, it is a good combination not affecting their PA participation at all. Thus, perhaps the hijab offers Arab/Muslim women a protective effect on their body image although it is worth reiterating that these results are culturally bound. The lived experience of Arab/Muslim Palestinian women is likely to be very different to those of Muslim women in other Arab/Muslim countries, Europe or North America, and certainly very different to the experience of women in countries with different cultural, legal and social prescriptions regarding the hijab.

It is notable that body image-related distress was seen more in Palestinian women who desired but could not get, reconstruction surgery as they could not afford it. The only two participants in the exploratory study who had undergone reconstruction surgery said that their improved body image had positively affected their PA participation. This is consistent with literature from western countries, which argues that limited access to reconstruction, due to expense, results in worse body image and negatively impacts on women’s PA participation (Kilpela et al., 2015). Similarly, few Palestinian women were satisfied with their current weight and wanted to lose weight, as their weight had increased after cancer treatment. However, they were looking for a diet plan rather than going to a gym or participating in PA programmes.

Palestinian women's negative feelings about PA after breast cancer were a consequence of the various physical changes to their bodies. Some women felt ashamed, undignified and embarrassed by these changes. Women became body-conscious, especially when going out of their homes for social or physical activities and this had a negative influence on their PA participation. Harcourt and Frith's (2008) interviewed breast cancer patients, suffering from hair loss during chemotherapy. Their findings confirm that a visible cancer status may lead to unwanted attention and intrusive questions. Palestinian women in this study had several strategies to cope with their altered body image. One was to cancel social engagements and deliberately avoid social interactions to cope with the negative thoughts they experienced about their bodies. Similar studies in Bahrain found women stopped taking part in many activities because of issues accepting their body changes, preferring to stay at home and avoid social gatherings (Jassim & Whitford, 2013). This was also found in women from Holland who had oedema, after axillary lymph node dissection for breast cancer, who had less interest in maintaining relationships and were less active socially (Ververs et al., 2001).

The majority of male HCP participants (oncologists, surgeons, nurses and physiotherapists) were not enthusiastic to talk about the effect of breast cancer treatment on body image for women, their identity changes or even the effects on women's daily life activities. While female HCPs, in particular nurses and physiotherapists responses, reflected their understanding of how women's changing identity and altered body image may negatively affect their PA participation. However, the majority of nurses felt that this issue should be included in psychosocial care, not during routine follow-up, as this was not their speciality. Similarly, a Turkish study highlighted nurses played a key role in identifying negative body image and sexual problems in women after surgery for breast cancer (Erol, Ursavaş & Karayurt, 2015). From these findings, it appears that there is a need to raise HCPs ’ awareness of their role in addressing the altered body image and changing identity among women after breast cancer and that PA participation can be one of the strategies to empower them .

Some women in both studies realised being active was very rewarding for them, and reported that that they viewed PA as a means to “get back to normal.” For example, Palestinian women felt content and empowered when they finished their housework without any interruptions, as previously. Whether women were young or old, they argued that increasing their PA helped them get a sense of being in charge of their lives and their families which made them feel like normal women again. This finding, and those from other studies, provides a persuasive argument that PA can be useful for social integration for women after breast cancer. For example, in Brazil, women with breast cancer established a new way of communicating with the world, and to prove they were like normal women, chose to work hard and carry heavy things (Muniz da Costa Vargens & Berterö, 2007). Furthermore, Charlier et al. (2012) and Phillips and McAuley (2012) have shown that women who engaged in more goal-setting activities had higher PA levels, indicating that individuals who expected social benefits from PA were more likely to regulate their behaviour.

HCPs at both phases reported that although they did not give precise PA recommendations, they promoted PA to women, advising them to get back to normal activities and get involved with more meaningful and social activities. This is consistent with "activity theory", which implies that social activity is the essence of life for all ages. The more active people are (mentally, physically and socially), the better adjusted they are (Barrow, 1996). Thus, HCPs should recommend that women after breast cancer in the Palestinian territories join in socially meaningful activities and that PA can be promoted as a way to empower women after breast cancer. A qualitative systematic review for “Patient Empowerment in Cancer Patients during Follow-Up” (2017) found that emphasising to cancer survivors the importance of taking an active role in managing their own health is a key facilitator of empowerment (Jørgensen et al., 2017; McCorkle et al., 2011).

6.4.4 Theme Four: Promotion of physical activity

Understanding the reasons behind PA or inactivity is very important when implementing effective strategies for promoting active living among cancer patients, especially women after breast cancer.

The theme, promoting PA, included a number of subthemes, understanding the reasons behind PA or inactivity is very important when implementing effective strategies for promoting active living among cancer patients from different societies backgrounds and health care systems This study found that participant's beliefs about PA and their motivation to be engaged in it tended to explain their behaviour related to PA.

Palestinian women’s narratives suggested that they mostly believed PA was good, equated to "moving around is good," or “movement is a blessing" similar to another report of 10 Muslim women in Canada (Jiwani & Rail, 2010). However, some women reported that they believed, as cancer patients, they should rest and not make any effort, consistent with the findings of Hammond et al (2005) who described Arabs believing complete rest speeds recovery. Further, Courneya et al. (2007) suggested that if HCPs had positive beliefs and motivation for physical activity personally, they particularly encouraged women to engage in it. Although HCPs participants in this study reported PA was important to their cancer patients, only a third actually instructed them to be physically active. These findings are similar in other settings in the Arab world, including Saudi Arabia, where a survey revealed that 83% of the HCP respondents had negative attitudes toward recommending PA and only one-third of HCPs thought they were well prepared to treat obesity with PA (Sebiany, 2013). However, an online Delphi study of oncology HCPs (*n* = 114) in Ireland showed most respondents acknowledged the value of PA for cancer survivors (≥86%) (Cantwell et al., 2017). Some HCPs in this study mentioned cancer patients may have other priorities, thus assumptions about a patient's interest in PA might strongly influence their promotion of it. This was also shown in previous studies, of oncologists, nurses or other oncology HCPs in different settings (Karvinen et al., 2011and 2012; Park et al., 2015a,b; Williams et al., 2015). Palestinian women reported avoided using their arm after breast surgery, particularly if it was the dominant side, for fear of developing lymphoedema, negatively affected PA participation. Similar findings were also seen in other studies where women avoided the use of their arm for six months or more after breast cancer, negatively affecting their regular activities (Kopec et al., 2012; Smoot et al., 2010).

Fear of injury, especially among the older women, is consistent with other breast cancer studies, leading women to avoid PA (Lee et al., 2009) some fearing PA itself because they wanted to avoid fatigue (Blaney et al., 2011).

HCPs fears and injury concerns were also found to affect PA promotion, especially to those who were elderly, or in poor health. Similar concerns were also reported by German HCPs, where "indicators of poor general health" in patients was a reason for not recommending PA (Haussmann et al., 2019).

Social attitudes to PA was a significant factor affecting women's participation in or HCPs' promotion of PA. Both women and HCPs participants reported the physical environment, accessibility of facilities, and social support as barriers or facilitators to PA participation. Stories of social isolation reported by women after breast cancer in this study are valuable in their depiction of the loneliness some women experienced after cancer treatment. This is something not well understood in the quantitative and qualitative literature from Western countries. Palestinian women after breast cancer encountered dual complexity regarding PA participation as they found themselves in a socio-cultural context that stigmatised breast cancer and promoted adherence to traditional customs, particularly those discouraging any kind of outdoor physical activity. The stigma of breast cancer not only came from its association with a high risk of death, but also because of its occurrence in a private area of the body, such as the breast, a body part that Palestinians do not speak about. Such cultural and religious barriers can halt women's PA participation. Consistent with these findings, women report gender discrimination if they want to exercise as Muslim women and other studies describe finding modest clothing as "uncomfortable" for performing exercise and this limited their participation in moderate to vigorous PA (Lawton et al., 2005; Musaiger, 2011).

Palestinian women in this study identified that female-only gymnasia, especially with female trainers, would enable them to dress more comfortably, engage in more activities and exercise for more extended periods of time. However, such gyms are only available in cities and not in rural areas or refugee camps. To deal with this discriminatory and inequitable space, women created their own alternative/Palestinian space which, despite being limited and narrow, allow them to expand their practices, could accommodate and re-define their identity.

In their review of the ecological attributes of walking, Owen et al. (2004) described how in Western societies environmental attributes had a causal role and found that walking was repeatedly associated with aesthetics, the convenience of facilities, access to open space, and the design of the neighbourhood to allow walking to nearby destinations.

Thus, access to the beach and public open spaces, and having a “highly walkable” neighbourhood were found to be significantly related to walking to get to and from places. These walking preferences among women differed from studies in other Arab counties. An explanation for limited PA in some of the Middle Eastern countries is the hot and humid climate restricts the amount of time spent outdoors (Bener et al., 2010) not the case in the (oPt) as over the year temperatures range between *4.5°C* to 32*°C* (Weather Spark, 2020).

The findings from this study show no differences between Palestinian women and women from other areas in their preference for being with other cancer survivors for group support, whether for PA participation or psychological support. Palestinian women created their alternative/Palestinian space and they were very enthusiastic reporting their activities together reflected in local initiatives such as groups of women able to make trips to other Palestinian cities, especially holy places such as Jerusalem or Hebron, or walking in groups by the Mediterranean Sea, such as on Gaza beach, or even going as a group of women to the holy city of Mecca. This is also reported in other studies of Palestinian women (Hamdam Saliba, 2014) highlighting that in collectivist societies, such as Palestinian society, women’s group activities, such as walking, are more acceptable than lone exercise. These spaces fitted women's after breast cancer cultural needs and increased their sense of belonging as they felt comfortable with their bodies. Women's groups and spaces also reflect the need and desire of women for something different to meet their demands.

Walking groups enabled women to find safe and enjoyable experiences within the outdoor environment, a social resource and/or a space for healing, and an accessible route to increased fitness/wellness (Morris et al., 2019; Ireland et al., 2019). Other studies also show participants appreciate elements of a group walking, such as moving sociability (Doughty, 2013) and a shared sense of achieving health goals with others, which sustain the walking group, rather than socialising per se, among socio-economically deprived communities (Hanson et al., 2016). Thus, understanding environmental influences on PA is an important and challenging new area of patients with cancer (Spence & Lee, 2003).

HCPs in the exploratory study were aware of the negative social attitudes to *PA* in Palestinian culture. They described trying to promote activities that were acceptable to society, such as walking and in particular, walking in a group of women. Kagawa-Singer et al. (2010) suggest that HCPs should assess each cultural element by asking cancer patients several questions to promote *PA and that* lifestyle intervention programmes might fail if cultural norms are not considered and adaptations not made. HCPs can help to positively influence PA participation in women after breast cancer and an experienced physiotherapist can be the best HCPs to promote *PA* and exercises (Giacalone et al., 2019). Further, doctors and nurses are a trusted source of health information for most of the respondents (Hesse et al., 2005; Simou, 2015). However, most women in this study reported receiving no information about PA during their cancer treatment.

Giving verbal information, not in written information sheets or brochures, may suggest women did not recall this information and that HCPs' over-estimate their counselling practices regarding PA. Similar findings have also been reported in other studies and settings (Villarreal-Garza et al., 2016; Lilliehorn et al., 2009). A Swedish study (2013) showed that women who had received information on PA during breast cancer treatment met the guidelines regarding leisure-time PA compared with women who had not received any information (Johnsson et al., 2013). A Danish study of cancer patients also demonstrated that the level of PA might be increased by providing information to women after breast cancer (Midtgaard et al., 2009).

Palestinian women in this study expressed a wish for printed information in Arabic with PA instructions and recommendations. Turkish women shared the same concerns about the lack of information from the health care professions and, instead, gathered information from other patients (Cebeci et al., 2012).

These problems arose where there was limited knowledge of the English language, limited knowledge about breast cancer and a particular cultural view of cancer with a lack of a patient-centred care and involvement in decision-making (Doumit et al. 2010a; O'Callaghan et al., 2015; Saati, 2013). Thus, there is a need for appropriate advice and PA instructions from HCPs to promote PA recommendations in the local language.

Additionally, almost half of the HCPs did not recommend PA to their cancer patients because they did not have enough knowledge to make recommendations. Barriers to oncologists promoting PA included not being aware of the benefits of PA or lack referral opportunities (Jones et al., 2005) and a lack of training to develop individualised PA prescriptions for cancer survivors (Irwin, 2008). HCPs expressed a desire for PA resources and guidelines for cancer patients. A study conducted in Gaza, where 100 HCPs completed a survey, showed almost half did not get opportunities to attend national or international medical conferences addressing breast cancer and only 8% agreed on the need for accreditation with quality assurance programmes (Shaheen, 2017). Guidelines for PA for patients with cancer are written generically without explicit recommendations or guidance regarding roles and responsibilities (IJsbrandy et al., 2019). These responsibilities require continuing education and explicit guidelines for developing PA and survivorship care plans (Virgo et al., 2011). Further, all HCPs highlighted a lack of curriculum content related to PA consistent with other studies of among medical students in the UK (Dunlop & Murray, 2013). This research has found a lack of knowledge among HCPs is reflected globally in a lack of understanding about the WHO's PA guidelines that require immediate attention. For example, an online Delphi study of oncology HCPs (n = 114) in Ireland showed that the majority of recommendations provided to patients did not align with the current PA guidelines (Cantwell et al., 2017). Recently, the results of a cross-sectional online survey in Israel showed only 6.8% of physiotherapists were aware of the WHO-guidelines for PA (Yona et al., 2019). Thus, HCPs involved in cancer care lack knowledge of the current recommendations for PA with cancer patients should be enrolling on more training and workshops on evidence-based medicine and PA guidelines for cancer patients to be able to promote the potential benefits of a physically active lifestyle to cancer survivors (Lynch, 2016).

The final issue identified is the role and responsibilities of HCPs working with cancer patients. Different HCPs can prescribe PA but registered physiotherapists have the tools to provide a multi-faceted approach to cancer patients e.g. combining PA, respiratory exercises and aid in lymphoedema management (Bancroft, 2003). Physiotherapists can identify any impairment that may affect recovery such as muscle weakness, posture issues and pain. Physiotherapy respiratory techniques, pain control techniques, neurological rehabilitation education and lymphedema management are very significant in different kind of illness (Kumar et al., 2016). Oncologists and nurses at both phases said it was not their job to promote PA. At the same time, physiotherapists need a referral from a physician to deal with a cancer patient, according to the Palestinian health system schemes. Physiotherapists were frustrated by their lack of autonomy and status, which affected their role of promoting PA to their cancer patients. This unequal doctor-physiotherapist relationship was reflected in the incomplete and prescriptive medical referrals received by physiotherapists and the lack of communication between the groups. Previous studies reveal that many physicians do not believe that giving a piece of PA advice is part of their role (Haussmann et al., 2018).

Furthermore, there is a lack of knowledge among breast cancer patients in terms of not knowing what to expect after their treatment ends, leaving women unaware and poorly prepared for potential complications which leads to late detection and later possibly, more severe complications. An example from the USA showed that a significant proportion of breast cancer survivors, who last saw a nurse, reported that they had discussed PA (78.6 %) as compared to medical oncologist 54.4 %, surgeon 43.1 %, or radiation oncologist 64.1 % (Kenison et al., 2014). Women in this study reported that they were aware of the lack of time they had with HCPs, in particular physicians and oncologists, and expressed their desire to have more time to discuss. A similar finding shows that patients may refrain from asking questions because some clinicians are not receptive or because patients fear they will be considered difficult and receive worse care (Frosch et al., 2012).

Lack of time, the pressure of work and staff shortages were identified as major barriers to PA promotion by all HCPs participants in the two phases of this study. Similar findings in Qatar showed that the major barriers to physicians promoting PA were lack of time (85%) (Albaker et al., 2020).

Furthermore, the fragmentation of the Palestinian health care system challenges HCPs communication and coordination between each other and thus a barrier for PA referral. This influenced HCPs' roles and responsibilities in promoting PA to their cancer patients and impacts on patient-centred communication and shared decision making. Similarly, in the USA, medical oncologists suggested the need for increased coordination among clinicians in cancer survivorship care delivery (Virgo et al., 2011). Insufficient insurance cover for PA and physiotherapy programmes was a barrier to HCPs referring their cancer patients to these resources consistent with explorative studies from other settings (Jones & Courneya, 2002; GJERSET et al., 2010; Karvinen et al., 2011; Suderman et al., 2017; IJsbrandy et al., 2019a, b). Uncertainty and lack of information on the insurance cover for PA programmes or physiotherapy clinics were also reasons for not promoting PA in the oPt. Women expressed concern for the lack of community-based support programmes in countries such as Lebanon, where breast cancer survivors highlighted their need to have the opportunity to talk with people in similar situations to share their experiences of living with the illness (Doumit et al., 2010a).

Thus, it seems that better promotion of PA programmes would require policy change in the Palestinian Health Ministry that is beyond the scope of this research. However, lessons from around the world suggest that providing education to HCPs and cancer patients regarding the benefits & contraindications of PA may help optimise the referral process to community-based exercise programmes for cancer survivors and help shape a more holistic approach to PA intervention.

Research shows that each woman with breast cancer is different in terms of what support she needs, when she needs support, and how it should be delivered but this should take account of the values and shared cultural norms between women (Moore & Spiegel, 2004). Thus, when finding ways for these women to engage in physical activity, it is necessary to recognise the complex intersection of race, gender, culture and social attitudes to PA in both the family and the community (Dagkas et al., 2011).

Chapter 7: Conclusion and Recommendations

7.1 Introduction

I will begin this chapter by presenting the conclusion, and what the research has achieved as a contribution to the literature Then I will highlight the implications and recommendations for HCPs, as well as suggestions for future research. Finally, I will elaborate on my reflections during this research journey.

7.2 Conclusion

This research provides new knowledge and solutions to increase physical activity participation in women after breast cancer emphasising the importance of cultures. Some of the findings of the most challenging factors affecting PA participation among Palestinian women after breast cancer were seemingly paradoxical.

Findings highlighted that Palestinian women face some similarities with women in other cultures, relative to their daily living with cancer treatment side effects and altruism regarding their position as mothers. However, their experience of female identity, changing identity, body image, their position in society as women after breast cancer as well as the social attitudes to PA are additional characteristics affected by their ethnicity/race and religion. The findings highlight what can be described as Palestinian women's captivity to the consequences of breast cancer, to a culture of shame and pettiness, as well as to an ongoing political situation, which together imposes restrictions on their PA participation.

While religion and the significance of keeping active to protect women position in a patriarchal society may be facilitators for Palestinian women’s physical activity participation and promotion.

These same factors also affected HCPs' attitudes towards promoting PA to their Arab/Muslim cancer patients.

Palestinian women participants were more likely to report decreased PA participation after being diagnosed with breast cancer than women in other cultures. Palestinian culture, maybe unintentionally, negatively affected their PA participation as women but, in particular, as women with breast cancer. The social order of Palestinian/Arab society, its cultural codes regarding expected female behaviour provide the context for Palestinian women's pathways to poor PA participation after breast cancer. The experience of Palestinian women after breast cancer revealed distinctive factors not reported by women from Western cultures. These findings highlight the hidden factors affecting these vulnerable women's PA participation, such as a culture of shame, feeling the need to hide this stigmatising illness and be less sociable in order to accommodate others' expectations and avoid embarrassment or being pitied. This attitude led to them being insecure about their body image as well as its effect on their status as a wife in a patriarchal family culture.

From HCP perspectives, women's roles as mothers and their household responsibilities played a crucial role in being either a barrier or facilitator for PA participation. They need to be aware of these difficulties and challenges that Palestinian women face on a daily basis after breast cancer. HCPs could encourage PA for these women by advising them to increase their level of participation in household chores and outdoor activities and group therapy could be included to support women to manage their family and work priorities and facilitate protected time for PA participation. Delivering PA recommendations to Arab /Muslim women requires an understanding of cultural and spiritual values making it difficult for them to be involved in any outdoor physical activity.

HCPs need to address these topics with women after breast cancer, but in a culturally sensitive way (Rajaram and Rashidi, 2001; Cohen et al., 2010; Ma et al., 2012) not avoiding culturally sensitive topics such as body image, women should be asked about their feelings about their bodies; encouraged to confront the changes in their bodies, talk about this with their husband and family or perhaps consider reconstruction surgery if it is accessible.

HCPs identified that their own concerns and fears, acknowledging they did not provide optimal counselling on PA to their cancer patients because of the shortage of staff, the pressure of work, lack of time or lack of knowledge about PA guidelines. They also reported that fragmentation within the Palestinian health care system impacted on a follow-up of their cancer patients and there is a need for PA education for HCPs to illustrate the benefits and contraindications of PA in the long-term medical issues during and after cancer treatment.

Finally, PA was found to be successfully undertaken when women created their own spaces for walking and other activities, including walking to the mosque. Thus, a multidisciplinary team and more integrated inter-professional collaboration of HCPs, including oncologists, GPs, nurses, PTs and OTs, are needed in the promotion of PA to cancer patients, especially women after breast cancer.

7.3 Contribution of the thesis

To understand women's experience of PA participation after breast cancer treatment, there is a need to pay attention to the time after breast cancer treatment finishes because the public discourse suggests that after treatment a cancer patient is well again when that may not entirely be the case (McCann et al., 2010; Powers et al., 2016). This work has contributed to the identification of the factors affecting PA participation among women after breast cancer and PA promotion by HCPs from both a worldwide perspective and the perspective Palestinian women as an example of Arab/Muslim women living in the Middle East and HCPs who promote, or not, PA.

This thesis provides rich insights and a global view of factors affecting PA participation in women after breast cancer particularly those from Arab ethno-cultural backgrounds. This is original for several reasons:

The themes generated in this research were congruent with and extended through, the two phases of the research developing a deep and meaningful interaction with data to discover meaning in the data that would have been otherwise hard to unpick or explore. The use of this study design has allowed the researcher to authentically interact with and learn from data as it emerged organically.

This study in the oPt allowed Palestinian women to tell their stories and for their experiences of breast cancer diagnosis, treatment and its aftermath and impact on PA participation to be explored. The voices of these Palestinian women and HCPs have made an essential contribution to the understanding of the complex and intersecting factors affecting PA participation among Palestinian women after breast cancer. Arab/Muslim woman face unique barriers to performing physical activity, compared to women from Western culture.

Acknowledging the role of culture in shaping women's PA participation is significant and the overall framework facilitated a progression from an international perspective to a more local perspective, by specifically focusing on the views of women and HCPs in the Palestinian territories. Thus, the first step might be implementing and developing a cultural competency tool (Kagawa-Singer et al. 2010) that could be used to enable HCPs to assess the cultural sensitivity of their cancer patients, in particular women after breast cancer.

7.4 Implication and recommendations

7.4.1 Implications for research

This study provides the experience of a small group of Palestinian women and HCPs, which generated more questions than answers and is an opportunity to broaden the scope of knowledge in this area. Community, faith-based approaches have proven to be successful among African American and Latino communities and have been suggested for the Arab population in Israel (Shuval et al., 2008).

Therefore, future research is needed to explore topics such as spiritual intervention and PA participation in individuals with cancer, especially women after breast cancer, as these are crucial to enhance the quality of life and wellbeing of patients diagnosed with and treated for cancer (Al-Natour et al., 2017). Also, future research is needed to understand the influence of HCP communication and recommendations for PA to cancer patients particularly those women living in the Middle East and oPt.

7.4.2 Implication for practice and health care professionals

Recommendations for HCPs include:

- Despite women's diverse circumstances, women after breast cancer share specific attributes that have continued to affect their PA participation. HCPs should pay more attention to symptom management and the side-effects of cancer treatment, and provide practical guidance to help women overcome these symptoms and side effects. A better knowledge base for health care professionals is needed, particularly regarding patients with more considerable physical deterioration who require more advice on the benefits of exercise and physical activity participation. Thus, HCPs' assessment of women needs to be holistic, taking into consideration the multiple contexts of women's lives. Also, health care professionals should work to improve the physical activity level of women after breast cancer treatment during follow-up and are encouraged to follow the 'Ask-Assess-Advise' structure for discussing PA in the consultation (Haseler et al., 2019).
- Concerns of HCPs, their roles and responsibilities, and the health care system and referral schemes for PA need to be taken into account. Nurse practitioners and physiotherapists may be better placed to engage cancer patients with PA schemes. However, the authority and the impact of the oncologists on patients' life options should not be underestimated.
- Health care professionals involved in cancer control should be undertaking more training on physical activity to be able to promote the potential benefits of a physically active lifestyle to cancer survivors. There is a need for all HCPs working in oncology to recommend PA to their cancer patients. Oncologists, nurses and to inform and support women during and after cancer treatment.

- Health care professionals should encourage women after breast cancer who have undergone surgery to resume their normal daily activities and begin exercising as soon as possible to increase their physical activity.
- Ultimately, work is needed to develop detailed PA programmes that are culturally adapted to different communities that can make PA a part of the daily life routine for women after breast cancer which are affordable, accessible, gender-sensitive and appropriate.
- Health care professionals could use faith as a strategy to promote physical activity participation by encouraging walking to the mosque or church or to practice other religious activities which may increase physical activity among cancer patients.
- Although this thesis was exclusively about women after breast cancer, the results go some way to improving our understanding of the difference in gender perceptions of physical activity participation. Thus, HCPs need to address these topics with all cancer survivors, but in a culturally sensitive way among women after breast cancer.
- PA should take place in an environment in which individuals feel comfortable. Women should be encouraged more to be active, and supportive community programmes and social activities that improve PA participation and provide specific services should be developed and adapted to the culture and norms of the society and meet its specific needs.
- Hospitals may need to support oncology HCPs in promoting PA to their cancer patients by providing better referral schemes and community centre services, where a physiotherapist or exercise physiologist can supervise women after breast cancer.
- Universities can assist HCPs by including the purpose and benefits of PA to cancer patients in their health care curricula.

7.4.3 Implications for the Arab/Muslim world

Although the oPt is in a state of political upheaval, Palestinians share a similar cultural, religious and economic background with other parts of the Arab/Muslim world, especially those in the

Middle East, and these findings may be transferable to other Arab, Islamic communities in the Middle East. The participating women's responses were mainly consistent with and constructed on the basis of, their social interactions with others and existing meaning in their world. The results of this research provide evidence on how PA could be enhanced for women after breast cancer by being shaped by their cultural background, such as in their daily life activities. understanding Middle Eastern, Palestinian Arab, culture, sheds light on interventions provided to women after breast cancer and demonstrates a need to provide culturally competent PA recommendations for Arab / Muslim women after breast cancer within the context of the socio-cultural approach which includes a change in the cultural perceptions of women who exercise (Donnelly et al., 2018).

7.4.4 Implications for women after breast cancer

This thesis has demonstrated the particular importance of family, friends and social attitudes in shaping levels of physical activity participation among women after breast cancer.

Therefore, some suggestions and implication to improve the physical activity levels and participation among women after breast cancer might be:

- Each woman with breast cancer is different in terms of what she needs when she needs support, and how it should be delivered and so, HCPs should take account of the values and shared cultural norms between women when they assess their needs and how they will deliver PA recommendations.
- Addressing the benefits of spirituality seems essential in promoting physical activity, especially to women after breast cancer. Therefore, HCPs need to be aware of the culturally important roles that religion and spirituality play in coping with cancer and should be empowered with the spiritual knowledge and skills to respond to the needs of cancer patients at an intensely stressful time.

- It is necessary to recognise the complex intersection of Islam, gender and PA in both the family and the community and so, there is a need for implementation of culturally sensitive care that will increase PA participation among women after breast cancer.
- There is a need to raise HCPs' awareness of their role in addressing the altered body image and changed identity among women after breast cancer and that PA participation can be one of the strategies to empower them. It is suggested that HCPs should pay attention to the changing identity factor, to altered self-image and self-consciousness among women after breast cancer. Thus, HCPs should be encouraged to discuss what might be useful to motivate their cancer patients and women after breast cancer to be physically active. To do this HCPs need more training about how to discuss these personal choices with women after breast cancer regarding what might be useful to motivate them to be physically active and to encourage women to work on that accordingly.

- HCPs are encouraged to use self-concordance through goal setting and advise women to keep themselves as active and strong as possible to fulfil their female identity and their role as wives and mothers and attain happiness. Therefore, health care professionals should inspire breast cancer patients to work, be active and engage in hobbies. They should steer them towards doing things that matter to them, which they enjoy.
- Social attitudes to physical activity were a significant finding in the factors affecting women's participation in it or health care professionals' promotion of it. Thus, HCPs should recommend women after breast cancer to join socially meaningful activities and PA can be promoted to empower women after breast cancer.
- This work shows the positive influence of the women's group activities, particularly women after cancer groups, beyond that of the family on occasions. Thus, HCPs should recommend women after breast cancer join socially meaningful activities such as walking groups.
- There is a need to develop PA recommendations in the local language (Arabic) to promote HCPs role in providing appropriate advice to cancer patients and survivors according to their health status and gender distinctions.

- Finally, there is a need for a further research in order to understand the influence of the local media, including social media, for promoting physical activity in women particularly those women after breast who lives at Middle East and the oPt.

7.5 Strengths and limitation of the research

Strengths of the research

The research strategy and design used exploratory research methods and combined primary and secondary data. The sequential two phases nature of the studies made it easier to develop holistic research questions.

The systematic review evidence highlighted the gaps in research amongst women from different ethno-cultural backgrounds. The exploratory study facilitated focusing on Arab women and conducting in-depth exploratory qualitative interviews with Palestinian women after breast cancer. This produced new knowledge contributing to understandings of factors affecting PA among women after breast cancer from different ethno-cultural backgrounds.

The diverse sample of women after breast cancer and health care professional participants involved in the study increases the transferability of the results, in line with available evidence from other settings, these perspectives could be fundamental in shaping women's PA participation (Patton, 2002; Hammoudeh et al., 2016; Almuhtaseb et al., 2020).

HCPs participants were recruited from all cancer institutions in the oPt providing the study with a diverse range of perspectives and interactions.

This exploratory study using multiple methods of data collection allowed triangulation of data. The methods used are carefully justified, appropriate for complex research questions and based on sound methodological underpinnings. One benefit of a qualitative interview is that, unlike a fixed survey, questions may be modified to match the knowledge, experience, or comfort level of the participant (Rubin and Rubin, 2012). Follow-up questions helped achieve a high level of completeness, thoroughness, and ultimately helped to facilitate the goal of reaching saturation with each participant. Thus, adopting these methods strengthened its findings, reliability and validity.

This exploratory study is the first study of a particular ethno-cultural group of women providing evidence on PA participation as an example of the unique and specific characteristics of Arab/Muslim women that differs from other women of diverse ethno-cultural and social groups. Finally, the practice of embedding yourself, as a researcher, within this field is acknowledged for both its potential positive and negative impacts. However, there is much controversy about this practice, some of which is highlighted in Chapter 2. The verification process illuminated some obscured aspects of data analysis during the transformation of data to themes. This phase consists of three stages: "immersion and distancing", "relating themes to established knowledge" and "stabilising" (Vaismoradi et al., 2013).

Paradoxically, researchers need to both immerse themselves in the data and distance themselves from the data so as to reveal themes and to assess and examine the accuracy of the coding process (Vaismoradi et al., 2013). Thus, I kept a reflexive diary documenting the development of the study protocol and data collection process, where reflections on the decision-making process and how, and why, decisions may have been altered.

Limitations of the research

There are some of the limitations first, the Palestinian and Arabic literature on breast cancer, in general, is limited and scant on PA participation and it was related to healthy populations only thus, there were few references with which to compare the findings.

Due to the unstable political situation in the occupied Palestinian territories, recruitment had to stop for an extended period (more than 3 weeks) in the north of the West Bank, because it was not safe to travel there, for the researcher or the female participants. In Palestinian society, meeting dates and times are not as rigidly adhered to as in the UK, and sometimes meetings did not happen due to issues such as being delayed by checkpoints. I spent hours at checkpoints each time I went to conduct interviews with participants. Living inside the wall in East Jerusalem, I had to cross the Separation Barrier to enter the West Bank, where the majority of the interviews took place, crossing several checkpoints each time.

It was challenging to break the ice with some interviewees and to encourage them to speak openly about private issues, such as their sex lives, especially with older women in their 60s as in general they are more conservative. Furthermore, it was not possible to openly discuss depression and its consequences with women as Palestinian social norms discourage expressing and sharing certain problems with others, and some women had difficulties doing this or were unwilling to talk about them.

Data analysis was a time-consuming process, especially transcribing and translating data. Because data were collected, transcribed in Arabic and then translated into English, only the local supervisor was able to check the data findings in both languages, and not the supervisors in the UK. The process of translation often results in changes to language as it is not only the literal meaning of the word that gets translated but also how the word relates conceptually in the context. In the field of healthcare, a word or phrase to describe a particular disease or treatment concept might not even exist in the participant's first language (Frederickson et al., 2005). Translation problems arose, as some Arabic words do not have precise meanings in English, and some words lost their sense through the translation process. Therefore, using a translator or back translation might have been helpful, but it was beyond the scope and budget of his research.

As a Palestinian woman, I share some cultural values that could be reflected in my interpretation of the results. Although my position was clarified through the research process, engaging very closely with the data could have generated personal bias, especially in the qualitative exploratory study. Being the primary investigator and at the same time, part of the Arab Muslim community may have resulted in unintended bias interpreting some of the participants' comments. In the analysis, it was sometimes difficult for the researcher to set aside her knowledge and experience. It is possible that interview responses were influenced by the presence of the researcher and/or their perceptions of the responses they may have believed she was hoping to hear.

A final limitation is the lack of generalisability. As a qualitative study, however, this is a limitation that should be expected, as qualitative inquiry cannot be generalised to other populations. Thus, these findings may not be generalised and applied to all Arab/Muslim women with breast cancer.

7.6 Final Thoughts

I believe that the status of being a "Palestinian woman" helped this research. The study dealt with topics sensitive in many Arab societies, including Palestinian society. It can be argued based on this fieldwork experience, that female researchers have more access in the public sphere. Gender plays an important role in the acquisition of data (Antoun, 1989) as interviewees felt protected, rather than threatened when talking to a female in a private closed room. Also, as a woman, it was possible to feel the vulnerability ascribed to the women in the field and this provided insight.

While I was writing up this thesis, over the world COVID-19 began, and in March 2020 lockdown started and this negatively affected PA participation, especially outdoors. This reminded me of March 2002 when the Israeli Defense Force conducted a military operation, and all of West Bank was under curfews for approximately 40 days. These experiences made it clear to me that Palestinian women's experiences of PA cannot be separated from their geopolitical context.

The interviews with Palestinian women after breast cancer were inspiring and provided a clear picture of the complexity of each person’s life. Their willingness to share their very personal stories is acknowledged and appreciated, as is the willingness of HCPs to be honest about the challenges they faced in promoting PA to their patients.

This research has provided significant, new knowledge into the complexity and uniqueness of what Palestinian women after breast cancer face in their society. Those findings explain the cultural impact in the women's life-world: cancer-related to a death sentence in Palestinian culture, being afraid of divorce or becoming a second wife or being abandoned by their husband, having the stigma of breast cancer as well as limited support for doing physical activities. In addition to these factors, the unstable political situation influences women's outdoor physical activity on a daily basis.

Hopefully, these findings present HCPs with the motivation to consider the influence of culture, religion, health and personal characteristics on each woman with breast cancer and on her need for social support and PA participation which hopefully will lead to a better quality of life for Palestinian women after breast cancer treatment. Each woman after breast cancer is different in terms of what she needs and when she needs it, especially regarding PA, but this should take account of the values and shared cultural norms between women (Moore & Spiegel, 2004). Thus, when finding ways for women to engage in physical activity, it is necessary to recognise the complex intersection of gender, cancer as a disease and PA attitudes in both the family the community and the religion (Henderson et al., 2011; Dagkas et al., 2011). Therefore, there is a need for implementation of culturally sensitive care that will increase PA participation among women after breast cancer.

References

1) A., I., Hmeidan, M., & Qaraqra, D. (2011). Models and Systems of Elderly Care: Palestinian Elderly Women's Needs and their Physical and Mental Health. *Middle East Journal of Age And Ageing*, *8*(5), 21-35. https://doi.org/10.5742/mejaa.2011.85096
2) Abdul-Rahim, H., Holmboe-Ottesen, G., Stene, L., Husseini, A., Giacaman, R., Jervell, J., & Bjertness, E. (2003). Obesity in a rural and an urban Palestinian West Bank population. *International Journal Of Obesity*, *27*(1), 140-146. https://doi.org/10.1038/sj.ijo.0802160
3) Abdul-Rahim, H., Sibai, A., Khader, Y., Hwalla, N., Fadhil, I., & Alsiyabi, H. et al. (2014). Non-communicable Diseases in the Arab World. *The Lancet*, *383*(9914), 356-367. Retrieved 28 May 2020, from https://doi.org/10.1016/S0140-6736(13)62383-1.
4) AbdulRazak, M., Omar-fauzee, M., & Abd-Latif, R. (2010). The Perspective of Arabic Muslim Women toward Sport Participation. *Journal Of Asia Pacific Studies*, *1*(2), 364 - 377. Retrieved 3 August 2020, from.
5) Abulkhair, O., Saghir, N., Sedky, L., Saadedin, A., Elzahwary, H., & Siddiqui, N. et al. (2010). Modification and Implementation of NCCN Guidelines™ on Breast Cancer in the Middle East and North Africa Region. *Journal Of The National Comprehensive Cancer Network*, *8*(Suppl 3), S-8-S-15. https://doi.org/10.6004/jnccn.2010.0126
6) Abu-Lughod, L. (1988). *Fieldwork of a dutiful daughter ; Arab Women in the Field: Studying Your Own Society,* (pp. pp. 139-161). Syracuse University Press.
7) Abu-Rmeileh, N., Gianicolo, E., Bruni, A., Mitwali, S., Portaluri, M., & Bitar, J. et al. (2016). Cancer mortality in the West Bank, Occupied Palestinian Territory. *BMC Public Health*, *16*(1). https://doi.org/10.1186/s12889-016-2715-8
8) Adraskela, K., Veisaki, E., Koutsilieris, M., & Philippou, A. (2017). Physical Exercise Positively Influences Breast Cancer Evolution. *Clinical Breast Cancer*, *17*(6), 408-417. https://doi.org/10.1016/j.clbc.2017.05.003
9) Aflakseir, A., & Coleman, P. (2011). Initial Development of the Iranian Religious Coping Scale. *Journal Of Muslim Mental Health*, *6*(1). https://doi.org/10.3998/jmmh.10381607.0006.104
10) Agee, J. (2009). Developing qualitative research questions: a reflective process. *International Journal Of Qualitative Studies In Education*, *22*(4), 431-447. https://doi.org/10.1080/09518390902736512
11) Ahmad, M., Salleh, R., Mohamad Nor, N., Baharuddin, A., Rodzlan Hasani, W., & Omar, A. et al. (2018). Comparison between self-reported physical activity (IPAQ-SF) and pedometer among overweight and obese women in the My BFF at home study. *BMC Women's Health*, *18*(S1). https://doi.org/10.1186/s12905-018-0599-8
12) Alaloul, E., Elshami, M., Khader, E., Abu Nemer, H., Alhelu, A., & Awad, I. et al. (2019). Impact of mastectomy on quality of life in female patients with breast cancer in the Gaza Strip: a cross-sectional study. *The Lancet*, *393*, S5. https://doi.org/10.1016/s0140-6736(19)30591-4
13) Al-Azri, M., Al-Awisi, H., & Al-Moundhri, M. (2009). Coping With a Diagnosis of Breast Cancer-Literature Review and Implications for Developing Countries. *The Breast Journal*, *15*(6), 615-622. https://doi.org/10.1111/j.1524-4741.2009.00812.x

14) Al-Azri, M., Al-Awisi, H., Al-Rasbi, S., & Al-Moundhri, M. (2013). Coping with a diagnosis of breast cancer among Omani women. *Journal Of Health Psychology*, *19*(7), 836-846. https://doi.org/10.1177/1359105313479813
15) Albaker, W., Al-Dahshan, A., Chehab, M., Selim, N., & Eljack, I. (2020). Profile of Physical Activity, Perceived Barriers and Related Counselling Practices of Primary Health Care Physicians in Qatar: Cross-Sectional Study. *Journal Of Community Medicine & Public Health*, *4*(2). https://doi.org/10.29011/2577-2228.100076
16) Albarghouthi, S., & Klempe, S. (2018). “Al-Khabith”—The malignant cunning disease: Sociocultural complexity and social representations of cancer in the occupied Palestinian territory. *Culture & Psychology*, *25*(1), 99-131. https://doi.org/10.1177/1354067x18790025
17) Al-Hazzaa, H. (2007). Health-enhancing physical activity among Saudi adults using the International Physical Activity Questionnaire (IPAQ). *Public Health Nutrition*, *10*(1), 59-64. https://doi.org/10.1017/s1368980007184299
18) Ali, H., & Birley, S. (1999). Integrating deductive and inductive approaches in a study of new ventures and customer perceived risk. *Qualitative Market Research: An International Journal*, *2*(2), 103-110. https://doi.org/10.1108/13522759910270016
19) Ali, S., Mahmood, A., Moel, J., Hudson, C., & Leathers, L. (2008). A qualitative investigation of Muslim and Christian women's views of religion and feminism in their lives. *Cultural Diversity and Ethnic Minority Psychology*, *14*(1), 38-46. https://doi.org/10.1037/1099-9809.14.1.38
20) Allemani, C., Weir, H., Carreira, H., Harewood, R., Spika, D., & Wang, X. et al. (2015). Global surveillance of cancer survival 1995–2009: analysis of individual data for 25 676 887 patients from 279 population-based registries in 67 countries (CONCORD-2). *The Lancet*, *385*(9972), 977-1010. https://doi.org/10.1016/s0140-6736(14)62038-9
21) Allen, J., Pérez, J., Pischke, C., Tom, L., Juarez, A., Ospino, H., & Gonzalez-Suarez, E. (2012). Dimensions of Religiousness and Cancer Screening Behaviors Among Church-Going Latinas. *Journal Of Religion And Health*, *53*(1), 190-203. https://doi.org/10.1007/s10943-012-9606-9
22) Almuhtaseb, M., Alby, F., Zucchermaglio, C., & Fatigante, M. (2020). Religiosity as a Cultural Resource for Arab-Palestinian Women’s Coping with Cancer. *SAGE Open*, *10*(1), 215824401989873. https://doi.org/10.1177/2158244019898730
23) Al-Natour, A., Al Momani, S., & Qandil, A. (2017). The Relationship Between Spirituality and Quality of Life of Jordanian Women Diagnosed with Breast Cancer. *Journal Of Religion And Health*, *56*(6), 2096-2108. https://doi.org/10.1007/s10943-017-0370-8
24) Aloraifi, F., Boland, M., Green, A., & Geraghty, J. (2015). Gene analysis techniques and susceptibility gene discovery in non-BRCA1/BRCA2 familial breast cancer. *Surgical Oncology*, *24*(2), 100-109. https://doi.org/10.1016/j.suronc.2015.04.003
25) Alqaissi, N., & Dickerson, S. (2010). Exploring Common Meanings of Social Support as Experienced by Jordanian Women With Breast Cancer. *Cancer Nursing*, *33*(5), 353-361. https://doi.org/10.1097/ncc.0b013e3181d55d33
26) AlQuaiz, A., & Tayel, S. (2009). Barriers to a healthy lifestyle among patients attending primary care clinics at a university hospital in Riyadh. *Annals Of Saudi Medicine*, *29*(1), 30-35. https://doi.org/10.4103/0256-4947.51818
27) Al-Ramahi, R., Nazzal, D., Mustafa, D., Halabi, E., Gnimat, S., & Gayada, S. (2019). Evaluation of types and treatment protocols for breast cancer among Palestinian women: a retrospective study. *The Lancet*, *393*, S42. https://doi.org/10.1016/s0140-6736(19)30628-2

28) al-Shahri, M. (2002). Culturally Sensitive Caring for Saudi Patients. *Journal of Transcultural Nursing*, *13*(2), 133-138. https://doi.org/10.1177/104365960201300206
29) Alshenqeeti, H. (2014). Interviewing as a Data Collection Method: A Critical Review. *English Linguistics Research*, *3*(1). https://doi.org/10.5430/elr.v3n1p39
30) Al-Tannir, M., Kobrosly, S., Itani, T., El-Rajab, M., & Tannir, S. (2009). Prevalence of Physical Activity Among Lebanese Adults: A Cross-Sectional Study. *Journal Of Physical Activity And Health*, *6*(3), 315-320. https://doi.org/10.1123/jpah.6.3.315
31) AlWaheidi, S. (2019). Breast cancer in Gaza—a public health priority in search of reliable data. *Ecancermedicalscience*, *13*. https://doi.org/10.3332/ecancer.2019.964
32) Amara, M. (2012). *Sport, politics and society in the Arab world* (pp. 115-132). Palgrave Macmillan.
33) Amer, M., & Awad, G. (2016). *Handbook of Arab American psychology* (1st ed.). Routledge.
34) American Cancer Society, Inc. (2017). *American Cancer Society. (2017). Breast Cancer Facts & Figures: 2017-2018 American Cancer Society, Inc.*. .Atlanta:.
35) Amro, A., Hamdan, E., Dhaidel, H., Amer, M., Qassis, H., Hilal, R., & Jarayse, I. (2018). QUALITY OF LIFE, PAIN, AND DISABILITY POST-SURGICAL MANAGEMENT OF BREAST CANCER. *International Journal Of Development Research*, *08*(12), 4556-24560,. Retrieved 9 October 2019, from https://www.journalijdr.com/quality-life-pain-and-disability-post-surgical-management-breast-cancer.
36) Antoun, R. (1989). : Arab Women in the Field: Studying Your Own Society . Soraya Altorki, Camillia Fawzi El-Solh. *American Anthropologist*, *91*(3), 807-808. https://doi.org/10.1525/aa.1989.91.3.02a00650
37) Aquino, V., & Zago, M. (2007). The meaning of religious beliefs for a group of cancer patients during rehabilitation. *Revista Latino-Americana De Enfermagem*, *15*(1), 42-47. https://doi.org/10.1590/s0104-11692007000100007
38) *Arab world*. En.wikipedia.org. (2020). Retrieved 2 July 2020, from https://en.wikipedia.org/wiki/Arab_world.
39) Ashing-Giwa, K., Padilla, G., Bohorquez, D., Tejero, J., & Garcia, M. (2006). Understanding the Breast Cancer Experience of Latina Women. *Journal Of Psychosocial Oncology*, *24*(3), 19-52. https://doi.org/10.1300/j077v24n03_02
40) Aslam, S., & Emmanuel, P. (2010). Formulating a researchable question: A critical step for facilitating good clinical research. *Indian Journal Of Sexually Transmitted Diseases And AIDS*, *31*(1), 47. https://doi.org/10.4103/0253-7184.69003
41) Austin, Z., & Sutton, J. (2014). Qualitative Research: Getting Started. *The Canadian Journal Of Hospital Pharmacy*, *67*(6). https://doi.org/10.4212/cjhp.v67i6.1406
42) Aveyard, H., & Sharp, P. (2011). *A beginner's guide to evidence-based practice in health and social care* (3rd ed.). McGraw Open Press University.
43) Azaiza, F. (2012). Processes of conservation and change in Arab society in Israel: Implications for the health and welfare of the Arab population. *International Journal Of Social Welfare*, *22*(1), 15-24. https://doi.org/10.1111/j.1468-2397.2011.00866.x
44) Azaiza, F., & Cohen, M. (2007). Between traditional and modern perceptions of breast and cervical cancer screenings: a qualitative study of Arab women in Israel. *Psycho-Oncology*, *17*(1), 34-41. https://doi.org/10.1002/pon.1180
45) Azaiza, F., Cohen, M., Daoud, F., & Awad, M. (2010). Traditional-Westernizing continuum of change in screening behaviors: comparison between Arab women in Israel and the West Bank.

Breast Cancer Research And Treatment, *128*(1), 219-227. https://doi.org/10.1007/s10549-010-1321-1

46) Backman, M., Brovall, M., Sundberg, C., & Wengström, Y. (2015). Experience of physical activity during adjuvant chemotherapy treatment for women with breast cancer - an interview study. *European Journal Of Cancer*, *51*, S300. https://doi.org/10.1016/s0959-8049(16)30851-6
47) Balneaves, L., Van Patten, C., Truant, T., Kelly, M., Neil, S., & Campbell, K. (2014). Breast cancer survivors' perspectives on a weight loss and physical activity lifestyle intervention. *Supportive Care In Cancer*. https://doi.org/10.1007/s00520-014-2185-4
48) Bancroft, M. (2003). Physiotherapy in Cancer Rehabilitation. *Physiotherapy*, *89*(12), 729-733. https://doi.org/10.1016/s0031-9406(05)60498-1
49) Banning, M. (2011). Employment and breast cancer: a meta-ethnography. *European Journal Of Cancer Care*, *20*(6), 708-719. https://doi.org/10.1111/j.1365-2354.2011.01291.x
50) Banning, M., & Tanzeem, T. (2013). Managing the illness experience of women with advanced breast cancer: hopes and fears of cancer-related insecurity. *European Journal Of Cancer Care*, *22*(2), 253-260. https://doi.org/10.1111/ecc.12026
51) Barber, F. (2012). Social Support and Physical Activity Engagement by Cancer Survivors. *Clinical Journal Of Oncology Nursing*, *16*(3), E84-E98. https://doi.org/10.1188/12.cjon.e84-e98
52) Barnett-Page, E., & Thomas, J. (2009). Methods for the synthesis of qualitative research: a critical review. *BMC Medical Research Methodology*, *9*(1). https://doi.org/10.1186/1471-2288-9-59
53) Baron-Epel, O., Haviv, A., Garty, N., Tamir, D., & Green, M. (2005). Who are the Sedentary People in Israel? a Public Health Indicator. *Israel Med Assoc J*, *7*(11). Retrieved 19 April 2020, from.
54) Barrow, G. (1996). *Instructor's manual to accompany aging, the individual and society* (p. 69). West Pub. Co.
55) Barry, E., Greenhalgh, T., & Fahy, N. (2018). How are health-related behaviours influenced by a diagnosis of pre-diabetes? A meta-narrative review. *BMC Medicine*, *16*(1). https://doi.org/10.1186/s12916-018-1107-6
56) Bates, K., Leone, T., Ghandour, R., Mitwalli, S., Nasr, S., Coast, E., & Giacaman, R. (2017). Women's health in the occupied Palestinian territories: Contextual influences on subjective and objective health measures. *PLOS ONE*, *12*(10), e0186610. https://doi.org/10.1371/journal.pone.0186610
57) Batniji, R., Rabaia, Y., Nguyen–Gillham, V., Giacaman, R., Sarraj, E., & Punamaki, R. et al. (2009). Health as human security in the occupied Palestinian territory. *The Lancet*, *373*(9669), 1133-1143. https://doi.org/10.1016/s0140-6736(09)60110-0
58) Battaglini, C. (2014). Twenty-five years of research on the effects of exercise training in breast cancer survivors: A systematic review of the literature. *World Journal Of Clinical Oncology*, *5*(2), 177. https://doi.org/10.5306/wjco.v5.i2.177
59) Bauman, A., Bull, F., Chey, T., Craig, C., Ainsworth, B., & Sallis, J. et al. (2009). The International Prevalence Study on Physical Activity: results from 20 countries. *International Journal Of Behavioral Nutrition And Physical Activity*, *6*(1), 21. https://doi.org/10.1186/1479-5868-6-21
60) Behling, O., & Law, K. (2000). *Translating questionnaires and other research instruments*. Sage Publications.
61) Bell, J., & Waters, S. (2014). *Doing your research project*. McGraw-Hill Education.
62) Beltaïfa, L., Traissac, P., El Ati, J., Lefèvre, P., Romdhane, H., & Delpeuch, F. (2009). Prevalence of obesity and associated socioeconomic factors among Tunisian women from different living

environments. *Obesity Reviews*, *10*(2), 145-153. https://doi.org/10.1111/j.1467-789x.2008.00543.x

63) Ben-Arye, E., Popper-Giveon, A., Samuels, N., Mutafoglu, K., Schiff, E., & Omran, S. et al. (2016). Communication and integration: a qualitative analysis of perspectives among Middle Eastern oncology healthcare professionals on the integration of complementary medicine in supportive cancer care. *Journal of Cancer Research and Clinical Oncology*, *142*(5), 1117-1126. https://doi.org/10.1007/s00432-016-2120-9
64) Ben-Arye, E., Samuels, N., Goldstein, L., Mutafoglu, K., Omran, S., & Schiff, E. et al. (2016). Potential risks associated with traditional herbal medicine use in cancer care: A study of Middle Eastern oncology health care professionals. *Cancer*, *122*(4), 598-610. https://doi.org/10.1002/cncr.29796
65) Bener, A. (2011). Colon cancer in rapidly developing countries: review of the lifestyle, dietary, consanguinity and hereditary risk factors. *Oncology Reviews*, *5*(1), 5. https://doi.org/10.4081/oncol.2011.5
66) Bener, A., Moore, M., Ali, R., & El Ayoubi, H. (2010). Impacts of Family History and Lifestyle Habits on Colorectal Cancer Risk: A Case-Control Study in Qatar. *Asian Pacific Journal Of Cancer Prevention*, *11*(4), 963-968. Retrieved 17 June 2020, from.
67) Berge, J., Larson, N., Bauer, K., & Neumark-Sztainer, D. (2011). Are Parents of Young Children Practicing Healthy Nutrition and Physical Activity Behaviors?.*PEDIATRICS*, *127*(5), 881-887. https://doi.org/10.1542/peds.2010-3218
68) Berger, A., Gerber, L., & Mayer, D. (2012). Cancer-related fatigue. *Cancer*, *118*(S8), 2261-2269. https://doi.org/10.1002/cncr.27475
69) Berke, E., Koepsell, T., Moudon, A., Hoskins, R., & Larson, E. (2007). Association of the Built Environment With Physical Activity and Obesity in Older Persons. *American Journal Of Public Health*, *97*(3), 486-492. https://doi.org/10.2105/ajph.2006.085837
70) Bettany-Saltikov, J., & McSherry, R. (2016). *How to do a systematic literature review in nursing*.
71) Binkley, J., Harris, S., Levangie, P., Pearl, M., Guglielmino, J., Kraus, V., & Rowden, D. (2012). Patient perspectives on breast cancer treatment side effects and the prospective surveillance model for physical rehabilitation for women with breast cancer. *Cancer*, *118*(S8), 2207-2216. https://doi.org/10.1002/cncr.27469
72) Blanchard, C., Courneya, K., & Stein, K. (2008). Cancer Survivors’ Adherence to Lifestyle Behavior Recommendations and Associations With Health-Related Quality of Life: Results From the American Cancer Society's SCS-II. *Journal Of Clinical Oncology*, *26*(13), 2198-2204. https://doi.org/10.1200/jco.2007.14.6217
73) Blaney, J., Lowe-Strong, A., Rankin, J., Campbell, A., Allen, J., & Gracey, J. (2010). The Cancer Rehabilitation Journey: Barriers to and Facilitators of Exercise Among Patients With Cancer-Related Fatigue. *Physical Therapy*, *90*(8), 1135-1147. https://doi.org/10.2522/ptj.20090278
74) Bluethmann, S., Vernon, S., Gabriel, K., Murphy, C., & Bartholomew, L. (2015). Taking the next step: a systematic review and meta-analysis of physical activity and behavior change interventions in recent post-treatment breast cancer survivors. *Breast Cancer Research And Treatment*, *149*(2), 331-342. https://doi.org/10.1007/s10549-014-3255-5
75) Bodai, B. (2015). Breast Cancer Survivorship: A Comprehensive Review of Long-Term Medical Issues and Lifestyle Recommendations. *The Permanente Journal*, *19*(2). https://doi.org/10.7812/tpp/14-241

76) Boland, A., Cherry, M., & Dickson, R. (2017). *Doing a systematic review* (2nd ed.).

77) Bolderston, A. (2012). Conducting a Research Interview. *Journal Of Medical Imaging And Radiation Sciences*, *43*(1), 66-76. https://doi.org/10.1016/j.jmir.2011.12.002

78) Boyle, T., Vallance, J., Ransom, E., & Lynch, B. (2015). How sedentary and physically active are breast cancer survivors, and which population subgroups have higher or lower levels of these behaviors?.*Supportive Care In Cancer*, *24*(5), 2181-2190. https://doi.org/10.1007/s00520-015-3011-3

79) Bradshaw, C., Atkinson, S., & Doody, O. (2017). Employing a Qualitative Description Approach in Health Care Research. *Global Qualitative Nursing Research*, *4*, 233339361774228. https://doi.org/10.1177/2333393617742282

80) Bradshaw, M., & Kent, B. (2017). Prayer, Attachment to God, and Changes in Psychological Well-Being in Later Life. *Journal Of Aging And Health*, *30*(5), 667-691. https://doi.org/10.1177/0898264316688116

81) Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research In Psychology*, *3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

82) *Breast Cancer - Statistics*. Cancer.Net. (2019). Retrieved 2 December 2019, from https://www.cancer.net/cancer-types/breast-cancer/statistics.

83) *Breast cancer statistics*. World Cancer Research Fund. (2019). Retrieved 15 October 2019, from https://www.wcrf.org/dietandcancer/cancer-trends/breast-cancer-statistics.

84) Broderick, J., Hussey, J., & O'Donnell, D. (2014). Comment on 'Interventions to improve exercise behaviour in sedentary people living with and beyond cancer: a systematic review'. *British Journal Of Cancer*, *111*(12), 2377-2378. https://doi.org/10.1038/bjc.2014.248

85) Broderick, J., Ryan, J., O'Donnell, D., & Hussey, J. (2014). A guide to assessing physical activity using accelerometry in cancer patients. *Supportive Care In Cancer*, *22*(4), 1121-1130. https://doi.org/10.1007/s00520-013-2102-2

86) Browall, M., Mijwel, S., Rundqvist, H., & Wengström, Y. (2016). Physical Activity During and After Adjuvant Treatment for Breast Cancer: An Integrative Review of Women's Experiences. *Integrative Cancer Therapies*, *17*(1), 16-30. https://doi.org/10.1177/1534735416683807

87) Brown, J., Byers, T., Doyle, C., Courneya, K., Demark-Wahnefried, W., & Kushi, L. et al. (2003). Nutrition and Physical Activity During and After Cancer Treatment: An American Cancer Society Guide for Informed Choices. *CA: A Cancer Journal For Clinicians*, *53*(5), 268-291. https://doi.org/10.3322/canjclin.53.5.268

88) Brown, J., Winters-Stone, B., Lee, A., & Schmitz, K. (2012). Cancer, Physical Activity, and Exercise. *Comprehensive Physiology*, *2*(4). https://doi.org/https://doi.org/10.1002/cphy.c120005

89) Brown, M., Ramirez, J., & Farquhar-Smith, P. (2014). Pain in cancer survivors. *British Journal Of Pain*, *8*(4), 139-153. https://doi.org/10.1177/2049463714542605

90) Brown, P., Brown, W., Miller, Y., & Hansen, V. (2001). Perceived Constraints and Social Support for Active Leisure among Mothers with Young Children. *Leisure Sciences*, *23*(3), 131-144. https://doi.org/10.1080/014904001316896837

91) Brown, W., Mishra, G., Lee, C., & Bauman, A. (2000). Leisure Time Physical Activity in Australian Women: Relationship with Well Being and Symptoms. *Research Quarterly for Exercise and Sport*, *71*(3), 206-216. https://doi.org/10.1080/02701367.2000.10608901

92) Brunet, J., Amireault, S., Chaiton, M., & Sabiston, C. (2014). Identification and prediction of physical activity trajectories in women treated for breast cancer. *Annals Of Epidemiology*, *24*(11), 837-842. https://doi.org/10.1016/j.annepidem.2014.07.004

93) Brunet, J., Burke, S., & Sabiston, C. (2013). The benefits of being self-determined in promoting physical activity and affective well-being among women recently treated for breast cancer. *Psycho-Oncology*, n/a-n/a. https://doi.org/10.1002/pon.3287

94) Brunet, J., Sabiston, C., & Burke, S. (2013). Surviving breast cancer: Women's experiences with their changed bodies. *Body Image*, *10*(3), 344-351. https://doi.org/10.1016/j.bodyim.2013.02.002

95) Brunet, J., Taran, S., Burke, S., & Sabiston, C. (2013). A qualitative exploration of barriers and motivators to physical activity participation in women treated for breast cancer. *Disability And Rehabilitation*, *35*(24), 2038-2045. https://doi.org/10.3109/09638288.2013.802378

96) Brunet, J., Wurz, A., Nader, P., & Bélanger, M. (2020). A systematic review summarizing the effect of health care provider-delivered physical activity interventions on physical activity behaviour in cancer survivors. *Patient Education And Counseling*. https://doi.org/10.1016/j.pec.2020.02.002

97) Buetow, S. (2010). Thematic Analysis and Its Reconceptualization as 'Saliency Analysis'. *Journal Of Health Services Research & Policy*, *15*(2), 123-125. https://doi.org/10.1258/jhsrp.2009.009081

98) Buetow, S. (2010). Thematic Analysis and Its Reconceptualization as 'Saliency Analysis'. *Journal Of Health Services Research & Policy*, *15*(2), 123-125. https://doi.org/10.1258/jhsrp.2009.009081

99) Buffart, L., Galvão, D., Brug, J., Chinapaw, M., & Newton, R. (2014). Evidence-based physical activity guidelines for cancer survivors: Current guidelines, knowledge gaps and future research directions. *Cancer Treatment Reviews*, *40*(2), 327-340. https://doi.org/10.1016/j.ctrv.2013.06.007

100) Burke, N., Villero, O., & Guerra, C. (2012). Passing Through: Meanings of Survivorship and Support Among Filipinas With Breast Cancer. *Qualitative Health Research*, *22*(2), 189-198. https://doi.org/10.1177/1049732311420577

101) Bushnaq, M. (2008). Palliative Care in Jordan: Culturally Sensitive Practice. *Journal Of Palliative Medicine*, *11*(10), 1292-1293. https://doi.org/10.1089/jpm.2008.0166

102) Byrne, M. (2001). Interviewing as a data collection method. *AORN Journal*, *74*(2), 233-235. https://doi.org/10.1016/s0001-2092(06)61533-0

103) Cameron, R. (2009). A sequential mixed model research design: Design, analytical and display issues. *International Journal Of Multiple Research Approaches*, *3*(2), 140-152. https://doi.org/10.5172/mra.3.2.140

104) Campbell, A., Stevinson, C., & Crank, H. (2012). The BASES Expert Statement on Exercise and Cancer Survivorship. *Journal of Sports Sciences*, *30*(9), 949-952. https://doi.org/10.1080/02640414.2012.671953

105) CAMPBELL, K., WINTERS-STONE, K., WISKEMANN, J., MAY, A., SCHWARTZ, A., & COURNEYA, K. et al. (2019). Exercise Guidelines for Cancer Survivors. *Medicine & Science In Sports & Exercise*, *51*(11), 2375-2390. https://doi.org/10.1249/mss.0000000000002116

106) Campbell-Enns, H., & Woodgate, R. (2016). The psychosocial experiences of women with breast cancer across the lifespan: a systematic review. *Psycho-Oncology*, *26*(11), 1711-1721. https://doi.org/10.1002/pon.4281

107) *Cancer - ACRM*. ACRM. (2019). Retrieved 24 October 2019, from https://acrm.org/acrm-communities/cancer/.

108) Cancer.org. (2019). Retrieved 21 October 2019, from https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/breast-cancer-facts-and-figures/breast-cancer-facts-and-figures-2017-2018.pdf.

109) Cantwell, M., Walsh, D., Furlong, B., Moyna, N., McCaffrey, N., & Boran, L. et al. (2017). Healthcare professionals' knowledge and practice of physical activity promotion in cancer care: Challenges and solutions. *European Journal Of Cancer Care*, *27*(2), e12795. https://doi.org/10.1111/ecc.12795

110) Caperchione, C., Kolt, G., & Mummery, W. (2009). Physical Activity in Culturally and Linguistically Diverse Migrant Groups to Western Society. *Sports Medicine*, *39*(3), 167-177. https://doi.org/10.2165/00007256-200939030-00001

111) Caperchione, C., Kolt, G., Tennent, R., & Mummery, W. (2011). Physical activity behaviours of Culturally and Linguistically Diverse (CALD) women living in Australia: A qualitative study of socio-cultural influences. *BMC Public Health*, *11*(1). https://doi.org/10.1186/1471-2458-11-26

112) Casellas-Grau, A., Vives, J., Font, A., & Ochoa, C. (2016). Positive psychological functioning in breast cancer: An integrative review. *The Breast*, *27*, 136-168. https://doi.org/10.1016/j.breast.2016.04.001

113) Caspersen, C., Powell, K., & Christenson, G. (1985). Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. *Public Health Rep.*, *100*(2), 126-131. https://doi.org/PMC1424733

114) Cebeci, F., Yangın, H., & Tekeli, A. (2012). Life experiences of women with breast cancer in south western Turkey: A qualitative study. *European Journal Of Oncology Nursing*, *16*(4), 406-412. https://doi.org/10.1016/j.ejon.2011.09.003

115) Chalmers, I., Bracken, M., Djulbegovic, B., Garattini, S., Grant, J., & Gülmezoglu, A. et al. (2014). How to increase value and reduce waste when research priorities are set. *The Lancet*, *383*(9912), 156-165. https://doi.org/10.1016/s0140-6736(13)62229-1

116) Charlier, C., Van Hoof, E., Pauwels, E., Lechner, L., Spittaels, H., Bourgois, J., & De Bourdeaudhuij, I. (2012). Treatment-related and psychosocial variables in explaining physical activity in women three weeks to six months post-treatment of breast cancer. *Patient Education and Counseling*, *89*(1), 171-177. https://doi.org/10.1016/j.pec.2012.06.029

117) Chastin, S., Culhane, B., & Dall, P. (2014). Comparison of self-reported measure of sitting time (IPAQ) with objective measurement (activPAL). *Physiological Measurement*, *35*(11), 2319-2328. https://doi.org/10.1088/0967-3334/35/11/2319

118) Cheema, B., Kilbreath, S., Fahey, P., Delaney, G., & Atlantis, E. (2014). Safety and efficacy of progressive resistance training in breast cancer: a systematic review and meta-analysis. *Breast Cancer Research And Treatment*, *148*(2), 249-268. https://doi.org/10.1007/s10549-014-3162-9

119) Chen, X., Lu, W., Zheng, W., Gu, K., Matthews, C., & Chen, Z. et al. (2011). Exercise After Diagnosis of Breast Cancer in Association with Survival. *Cancer Prevention Research*, *4*(9), 1409-1418. https://doi.org/10.1158/1940-6207.capr-10-0355

120) Chetty, P. (2016). Projectguru.in. Retrieved 10 December 2019, from https://www.projectguru.in/publications/choosing-appropriate-research-philosophy/.

121) Cho, J., & Trent, A. (2006). Validity in qualitative research revisited. *Qualitative Research*, *6*(3), 319-340. https://doi.org/10.1177/1468794106065006

122) Chopra, I., & Chopra, A. (2014). Follow-up care for breast cancer survivors: improving patient outcomes. *Patient Related Outcome Measures*, 71. https://doi.org/10.2147/prom.s49586

123) Choumanova, I., Wanat, S., Barrett, R., & Koopman, C. (2006). Religion and Spirituality in Coping with Breast Cancer: Perspectives of Chilean Women. *The Breast Journal*, *12*(4), 349-352. https://doi.org/10.1111/j.1075-122x.2006.00274.x

124) Clarke, J. (2011). What is a systematic review?.*Evidence-Based Nursing*, *14*(3), 64-64. https://doi.org/10.1136/ebn.2011.0049

125) Cleeland, C., Zhao, F., Chang, V., Sloan, J., O'Mara, A., & Gilman, P. et al. (2013). The symptom burden of cancer: Evidence for a core set of cancer-related and treatment-related symptoms from the Eastern Cooperative Oncology Group Symptom Outcomes and Practice Patterns study. *Cancer*, *119*(24), 4333-4340. https://doi.org/10.1002/cncr.28376

126) Clifford, B., Mizrahi, D., Sandler, C., Barry, B., Simar, D., Wakefield, C., & Goldstein, D. (2017). Barriers and facilitators of exercise experienced by cancer survivors: a mixed methods systematic review. *Supportive Care In Cancer*, *26*(3), 685-700. https://doi.org/10.1007/s00520-017-3964-5

127) CLINE, K., & FERRARO, K. (2006). Does Religion Increase the Prevalence and Incidence of Obesity in Adulthood?.*Journal For The Scientific Study Of Religion*, *45*(2), 269-281. https://doi.org/10.1111/j.1468-5906.2006.00305.x

128) Cohen, M., & Numa, M. (2010). Posttraumatic growth in breast cancer survivors: a comparison of volunteers and non-volunteers. *Psycho-Oncology*, *20*(1), 69-76. https://doi.org/10.1002/pon.1709

129) Cohen, M., Abdallah Mabjish, A., & Zidan, J. (2010). Comparison of Arab breast cancer survivors and healthy controls for spousal relationship, body image, and emotional distress. *Quality Of Life Research*, *20*(2), 191-198. https://doi.org/10.1007/s11136-010-9747-9

130) Corbett, T., Cheetham, T., Müller, A., Slodkowska-Barabasz, J., Wilde, L., & Krusche, A. et al. (2018). Exploring cancer survivors' views of health behaviour change: “Where do you start, where do you stop with everything?”.*Psycho-Oncology*, *27*(7), 1816-1824. https://doi.org/10.1002/pon.4732

131) Cormie, P., Atkinson, M., Bucci, L., Cust, A., Eakin, E., & Hayes, S. et al. (2018). Clinical Oncology Society of Australia position statement on exercise in cancer care. *Medical Journal Of Australia*, *209*(4), 184-187. https://doi.org/10.5694/mja18.00199

132) Cornish, F., & Gillespie, A. (2009). A Pragmatist Approach to the Problem of Knowledge in Health Psychology. *Journal Of Health Psychology*, *14*(6), 800-809. https://doi.org/10.1177/1359105309338974

133) Corrigan, P., Markowitz, F., & Watson, A. (2004). Structural Levels of Mental Illness Stigma and Discrimination. *Schizophrenia Bulletin*, *30*(3), 481-491. https://doi.org/10.1093/oxfordjournals.schbul.a007096

134) Courneya, K. (2014). Physical Activity and Cancer Survivorship. *Exercise And Sport Sciences Reviews*, *42*(3), 102-109. https://doi.org/10.1249/jes.0000000000000011

135) Courneya, K. (2017). Exercise guidelines for cancer survivors: are fitness and quality-of-life benefits enough to change practice?.*Current Oncology*, *24*(1), 8. https://doi.org/10.3747/co.24.3545

136) Courneya, K., & Friedenreich, C. (2007). Physical Activity and Cancer Control. *Seminars In Oncology Nursing*, *23*(4), 242-252. https://doi.org/10.1016/j.soncn.2007.08.002

137) CRAIG, C., MARSHALL, A., SSTM, M., BAUMAN, A., BOOTH, M., & AINSWORTH, B. et al. (2003). International Physical Activity Questionnaire: 12-Country Reliability and Validity. *Medicine & Science In Sports & Exercise*, *35*(8), 1381-1395. https://doi.org/10.1249/01.mss.0000078924.61453.fb

138) Cramer, H., Lange, S., Klose, P., Paul, A., & Dobos, G. (2012). Yoga for breast cancer patients and survivors: a systematic review and meta-analysis. *BMC Cancer*, *12*(1). https://doi.org/10.1186/1471-2407-12-412

139) Creswell, J., & Plano Clark, V. (2011). *Designing & Conducting Mixed Methods Research 2nd Ed + the Mixed Methods Reader*. Sage Pubns.

140) Creswell,, J. (2013). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications Ltd.

141) Creswell., J. (2007). *Qualitative inquiry & research design : choosing among five approaches* (2nd ed.). SAGE Publications.

142) Cruickshank, S., & Barber, M. (2019). Breast cancer follow-up after a primary diagnosis: A confused picture. *The Breast*, *46*, 97-100. https://doi.org/10.1016/j.breast.2019.05.010

143) Dagkas, S., Benn, T., & Jawad, H. (2011). Multiple voices: improving participation of Muslim girls in physical education and school sport. *Sport, Education And Society*, *16*(2), 223-239. https://doi.org/10.1080/13573322.2011.540427

144) Daley, A., Bowden, S., Rea, D., Billingham, L., & Carmicheal, A. (2008). What advice are oncologists and surgeons in the United Kingdom giving to breast cancer patients about physical activity?.*International Journal Of Behavioral Nutrition And Physical Activity*, *5*(1), 46. https://doi.org/10.1186/1479-5868-5-46

145) Davey, S., Davey, A., & Singh, J. (2013). Metanarrative review: Current status and opportunities for public health research. *International Journal Of Health System And Disaster Management*, *1*(2), 59. https://doi.org/10.4103/2347-9019.128111

146) Day, K. (2018). Physical Environment Correlates of Physical Activity in Developing Countries: A Review. *Journal Of Physical Activity And Health*, *15*(4), 303-314. https://doi.org/10.1123/jpah.2017-0184

147) Day, S., Bevers, T., Palos, G., & Rodriguez, M. (2016). American Cancer Society/American Society of Clinical Oncology Breast Cancer Survivorship Care Guideline. *Breast Diseases: A Year Book Quarterly*, *27*(4), 327-329. https://doi.org/10.1016/j.breastdis.2016.09.010

148) de Boer, M., Wörner, E., Verlaan, D., & van Leeuwen, P. (2017). The Mechanisms and Effects of Physical Activity on Breast Cancer. *Clinical Breast Cancer*, *17*(4), 272-278. https://doi.org/10.1016/j.clbc.2017.01.006

149) De Groef, A., Geraerts, I., Demeyer, H., Van der Gucht, E., Dams, L., & de Kinkelder, C. et al. (2018). Physical activity levels after treatment for breast cancer: Two-year follow-up. *The Breast*, *40*, 23-28. https://doi.org/10.1016/j.breast.2018.04.009

150) de Jong, N., Candel, M., Schouten, H., Abu-Saad, H., & Courtens, A. (2006). Course of the Fatigue Dimension "Activity Level" and the Interference of Fatigue With Daily Living Activities for Patients With Breast Cancer Receiving Adjuvant Chemotherapy. *Cancer Nursing*, *29*(5), E1-E13. https://doi.org/10.1097/00002820-200609000-00013

151) Debnam, K., Holt, C., Clark, E., Roth, D., & Southward, P. (2011). Relationship between religious social support and general social support with health behaviors in a national sample of African Americans. *Journal Of Behavioral Medicine*, *35*(2), 179-189. https://doi.org/10.1007/s10865-011-9338-4

152) Demark-Wahnefried, W., & Jones, L. (2008). Promoting a Healthy Lifestyle Among Cancer Survivors. *Hematology/Oncology Clinics Of North America*, *22*(2), 319-342. https://doi.org/10.1016/j.hoc.2008.01.012

153) Désiron, H., Donceel, P., de Rijk, A., & Van Hoof, E. (2013). A Conceptual-Practice Model for Occupational Therapy to Facilitate Return to Work in Breast Cancer Patients. *Journal Of Occupational Rehabilitation*, *23*(4), 516-526. https://doi.org/10.1007/s10926-013-9427-z

154) Devoogdt, N., Van Kampen, M., Geraerts, I., Coremans, T., Fieuws, S., & Lefevre, J. et al. (2010). Physical activity levels after treatment for breast cancer: one-year follow-up. *Breast Cancer Research And Treatment*, *123*(2), 417-425. https://doi.org/10.1007/s10549-010-0997-6

155) Ding, D., Sallis, J., Kerr, J., Lee, S., & Rosenberg, D. (2011). Neighborhood Environment and Physical Activity Among Youth. *American Journal Of Preventive Medicine*, *41*(4), 442-455. https://doi.org/10.1016/j.amepre.2011.06.036

156) DiSipio, T., Rye, S., Newman, B., & Hayes, S. (2013). Incidence of unilateral arm lymphoedema after breast cancer: a systematic review and meta-analysis. *The Lancet Oncology*, *14*(6), 500-515. https://doi.org/10.1016/s1470-2045(13)70076-7

157) Dixon-Woods, M., Agarwal, S., Jones, D., Young, B., & Sutton, A. (2005). Synthesising qualitative and quantitative evidence: A review of possible methods. *Journal Of Health Services Research & Policy*, *10*(1), 45-53. https://doi.org/10.1177/135581960501000110

158) Donnelly, T., Al Khater, A., Al-Bader, S., Al Kuwari, M., Al-Meer, N., & Malik, M. et al. (2013). Beliefs and attitudes about breast cancer and screening practices among Arab women living in Qatar: a cross-sectional study. *BMC Women's Health*, *13*(1). https://doi.org/10.1186/1472-6874-13-49

159) Donnelly, T., Al Khater, A., Al-Bader, S., Al Kuwari, M., Abdulmalik, M., Al-Meer, N., & Singh, R. (2015). Promoting screening to reduce breast cancer mortality among Arab women: What do healthcare professionals need to do?.*Avicenna*, *2015*(1), 3. https://doi.org/10.5339/avi.2015.3

160) Donnelly, T., Al Khater, A., Al-Bader, S., Al Kuwari, M., Al-Meer, N., & Malik, M. et al. (2013). Arab Women's Breast Cancer Screening Practices: A Literature Review. *Asian Pacific Journal Of Cancer Prevention*, *14*(8), 4519-4528. https://doi.org/10.7314/apjcp.2013.14.8.4519

161) Donnelly, T., Al Suwaidi, J., Al Bulushi, A., Al Enazi, N., Yassin, K., & Rehman, A. et al. (2011). The influence of cultural and social factors on healthy lifestyle of Arabic women. *Avicenna*, (2011), 3. https://doi.org/10.5339/avi.2011.3

162) Donnelly, T., Al-Thani, A., Benjamin, K., Al-Khater, A., Fung, T., Ahmedna, M., & Welch, A. (2018). Arab female and male perceptions of factors facilitating and inhibiting their physical activity: Findings from a qualitative study in the Middle East. *PLOS ONE*, *13*(7), e0199336. https://doi.org/10.1371/journal.pone.0199336

163) Donnelly, T., Fung, T., & Al-Thani, A. (2018). Fostering active living and healthy eating through understanding physical activity and dietary behaviours of Arabic-speaking adults: a cross-sectional study from the Middle East. *BMJ Open*, *8*(4), e019980. https://doi.org/10.1136/bmjopen-2017-019980

164) Doody, O., & Bailey, M. (2016). Setting a research question, aim and objective. *Nurse Researcher*, *23*(4), 19-23. https://doi.org/10.7748/nr.23.4.19.s5

165) Doughty, K. (2013). Walking together: The embodied and mobile production of a therapeutic landscape. *Health & Place*, *24*, 140-146. https://doi.org/10.1016/j.healthplace.2013.08.009

166) Doumit, M., El Saghir, N., Abu-Saad Huijer, H., Kelley, J., & Nassar, N. (2010). Living with breast cancer, a Lebanese experience. *European Journal Of Oncology Nursing*, *14*(1), 42-48. https://doi.org/10.1016/j.ejon.2009.08.003

167) Downing, A., Morris, E., Richards, M., Corner, J., Wright, P., & Sebag-Montefiore, D. et al. (2015). Health-Related Quality of Life After Colorectal Cancer in England: A Patient-Reported Outcomes Study of Individuals 12 to 36 Months After Diagnosis. *Journal Of Clinical Oncology*, *33*(6), 616-624. https://doi.org/10.1200/jco.2014.56.6539

168) Doyle, C., Kushi, L., Byers, T., Courneya, K., Demark-Wahnefried, W., & Grant, B. et al. (2006). Nutrition and Physical Activity During and After Cancer Treatment: An American Cancer Society Guide for Informed Choices. *CA: A Cancer Journal For Clinicians*, *56*(6), 323-353. https://doi.org/10.3322/canjclin.56.6.323

169) Drisko, J. (2019). Qualitative research synthesis: An appreciative and critical introduction. *Qualitative Social Work*, 147332501984880. https://doi.org/10.1177/1473325019848808

170) Dunlop, M., & Murray, A. (2013). Major limitations in knowledge of physical activity guidelines among UK medical students revealed: implications for the undergraduate medical curriculum: Table 1. *British Journal Of Sports Medicine*, *47*(11), 718-720. https://doi.org/10.1136/bjsports-2012-091891

171) *EBP | Joanna Briggs Institute*. Joannabriggs.org. (2019). Retrieved 11 November 2019, from http://joannabriggs.org/assets/docs/critical-appraisal-tools/JBI_Critical_Appraisal-Checklist_for_Systematic_Reviews2017.

172) Edwards, R., & Holland, J. (2013). *What is qualitative interviewing?* Bloomsbury.

173) Egger, M., Davey-Smith, G., & Altman, D. (2013). *Systematic Reviews in Health Care*. Wiley.

174) Eldoumi, H., & Gates, G. (2019). Physical Activity of Arab Muslim Mothers of Young Children Living in the United States: Barriers and Influences. *Ethnicity & Disease*, *29*(3), 469-476. https://doi.org/10.18865/ed.29.3.469

175) Ellegaard, M., Grau, C., Zachariae, R., & Bonde Jensen, A. (2017). Fear of cancer recurrence and unmet needs among breast cancer survivors in the first five years. A cross-sectional study. *Acta Oncologica*, *56*(2), 314-320. https://doi.org/10.1080/0284186x.2016.1268714

176) Elobaid, Y., Aw, T., Grivna, M., & Nagelkerke, N. (2014). Breast Cancer Screening Awareness, Knowledge, and Practice among Arab Women in the United Arab Emirates: A Cross-Sectional Survey. *Plos ONE*, *9*(9), e105783. https://doi.org/10.1371/journal.pone.0105783

177) Emilee, G., Ussher, J., & Perz, J. (2010). Sexuality after breast cancer: A review. *Maturitas*, *66*(4), 397-407. https://doi.org/10.1016/j.maturitas.2010.03.027

178) Erol Ursavaş, F., & Karayurt, Ö. (2015). Adaptation of the Sexual Adjustment and Body Image Scale in Turkish Breast Cancer Women. *International Journal Of Nursing Knowledge*, *27*(3), 162-169. https://doi.org/10.1111/2047-3095.12087

179) *Exercise is Medicine*. Exerciseismedicine.org. (2020). Retrieved 17 April 2020, from https://exerciseismedicine.org/.

180) *Exercising During Cancer Treatment*. Nccn.org. (2019). Retrieved 24 October 2019, from https://www.nccn.org/patients/resources/life_with_cancer/exercise.aspx.

181) Falba, T., & Sindelar, J. (2007). Spousal Concordance in Health Behavior Change. *Health Services Research*, *43*(1p1), 96-116. https://doi.org/10.1111/j.1475-6773.2007.00754.x

182) Fang, S., Shu, B., & Chang, Y. (2012). The effect of breast reconstruction surgery on body image among women after mastectomy: a meta-analysis. *Breast Cancer Research And Treatment*, *137*(1), 13-21. https://doi.org/10.1007/s10549-012-2349-1

183) Fathi Aghdam, G. (2018). The Comparison of Sexual Satisfaction and Body Image between Women with Breast Cancer after Treatment and Healthy Women. *Iranian Journal Of Breast Disease*, *11*(02), 46-55. https://doi.org/10.30699/acadpub.ijbd..11.2.46

184) Fawkes, C., Ward, E., & Carnes, D. (2015). What evidence is good evidence? A Masterclass in critical appraisal. *International Journal Of Osteopathic Medicine*, *18*(2), 116-129. https://doi.org/10.1016/j.ijosm.2015.01.002

185) Fearon, D., Hughes, S., & Brearley, S. (2019). Experiences of breast cancer in Arab countries. A thematic synthesis. *Quality Of Life Research*, *29*(2), 313-324. https://doi.org/10.1007/s11136-019-02328-0

186) Feldman, Z. (2013). Health in the occupied Palestinian territory. *The Lancet*, *382*(9887), 126. https://doi.org/10.1016/s0140-6736(13)61560-3

187) Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development. *International Journal Of Qualitative Methods*, *5*(1), 80-92. https://doi.org/10.1177/160940690600500107

188) Fisher, A., Wardle, J., Beeken, R., Croker, H., Williams, K., & Grimmett, C. (2016). Perceived barriers and benefits to physical activity in colorectal cancer patients. *Supportive Care In Cancer*, *24*(2), 903-910. https://doi.org/10.1007/s00520-015-2860-0

189) Fisher, A., Williams, K., Beeken, R., & Wardle, J. (2015). Recall of physical activity advice was associated with higher levels of physical activity in colorectal cancer patients. *BMJ Open*, *5*(4), e006853-e006853. https://doi.org/10.1136/bmjopen-2014-006853

190) Flick, U., Kardorff, E., & Steinke, I. (2004). *A companion to qualitative research.* (4th ed.). SAGE Publications Ltd.

191) Fobair, P., & Spiegel, D. (2009). Concerns About Sexuality After Breast Cancer. *The Cancer Journal*, *15*(1), 19-26. https://doi.org/10.1097/ppo.0b013e31819587bb

192) Fobair, P., Stewart, S., Chang, S., D'Onofrio, C., Banks, P., & Bloom, J. (2006). Body image and sexual problems in young women with breast cancer. *Psycho-Oncology*, *15*(7), 579-594. https://doi.org/10.1002/pon.991

193) Fong, A., Faulkner, G., Jones, J., & Sabiston, C. (2018). A qualitative analysis of oncology clinicians’ perceptions and barriers for physical activity counseling in breast cancer survivors. *Supportive Care In Cancer*, *26*(9), 3117-3126. https://doi.org/10.1007/s00520-018-4163-8

194) Forbes, C., Blanchard, C., Mummery, W., & Courneya, K. (2015). A Comparison of Physical Activity Preferences Among Breast, Prostate, and Colorectal Cancer Survivors in Nova Scotia, Canada. *Journal Of Physical Activity And Health*, *12*(6), 823-833. https://doi.org/10.1123/jpah.2014-0119

195) Fram, S. (2013). The Constant Comparative Analysis Method Outside of Grounded Theory. *The Qualitative Report*, *18*(1), 1-25. https://doi.org/https://nsuworks.nova.edu/tqr/vol18/iss1/1/

196) Frederickson, K., Acuña, V., Whetsell, M., & Tallier, P. (2005). Cross-Cultural Analysis for Conceptual Understanding: English and Spanish Perspectives. *Nursing Science Quarterly*, *18*(4), 286-292. https://doi.org/10.1177/0894318405280380

197) Frosch, D., May, S., Rendle, K., Tietbohl, C., & Elwyn, G. (2012). Authoritarian Physicians and Patients' Fear Of Being Labeled 'Difficult' Among Key Obstacles To Shared Decision Making. *Health Affairs*, *31*(5), 1030-1038. https://doi.org/10.1377/hlthaff.2011.0576

198) Furmaniak, A., Menig, M., & Markes, M. (2016). Exercise for women receiving adjuvant therapy for breast cancer. *Cochrane Database Of Systematic Reviews*. https://doi.org/10.1002/14651858.cd005001.pub3

199) Gal, R., Monninkhof, E., Peeters, P., van Gils, C., van den Bongard, D., & Wendel-Vos, G. et al. (2019). Physical activity levels of women with breast cancer during and after treatment, a comparison with the Dutch female population. *Acta Oncologica*, *58*(5), 673-681. https://doi.org/10.1080/0284186x.2018.1563712

200) Galantino, M., & Stout, N. (2013). Exercise Interventions for Upper Limb Dysfunction Due to Breast Cancer Treatment. *Physical Therapy*, *93*(10), 1291-1297. https://doi.org/10.2522/ptj.20120049

201) Galiano-Castillo, N., Ariza-García, A., Cantarero-Villanueva, I., Fernández-Lao, C., Díaz-Rodríguez, L., & Arroyo-Morales, M. (2014). Depressed mood in breast cancer survivors: Associations with physical activity, cancer-related fatigue, quality of life, and fitness level. *European Journal Of Oncology Nursing*, *18*(2), 206-210. https://doi.org/10.1016/j.ejon.2013.10.008

202) Ganeshkumar, P., & Gopalakrishnan, S. (2013). Systematic reviews and meta-analysis: Understanding the best evidence in primary healthcare. *Journal Of Family Medicine And Primary Care*, *2*(1), 9. https://doi.org/10.4103/2249-4863.109934

203) Garcia, D., & Thomson, C. (2014). Physical Activity and Cancer Survivorship. *Nutrition In Clinical Practice*, *29*(6), 768-779. https://doi.org/10.1177/0884533614551969

204) Gebauer, S., Schootman, M., Xian, H., & Xaverius, P. (2020). Neighborhood built and social environment and meeting physical activity recommendations among mid to older adults with joint pain. *Preventive Medicine Reports*, *18*, 101063. https://doi.org/10.1016/j.pmedr.2020.101063

205) Gegechkori, N., Haines, L., & Lin, J. (2017). Long-Term and Latent Side Effects of Specific Cancer Types. *Medical Clinics Of North America*, *101*(6), 1053-1073. https://doi.org/10.1016/j.mcna.2017.06.003

206) Gemmill, R., Williams, A., Cooke, L., & Grant, M. (2012). Challenges and strategies for recruitment and retention of vulnerable research participants: Promoting the benefits of participation. *Applied Nursing Research*, *25*(2), 101-107. https://doi.org/10.1016/j.apnr.2010.02.003

207) George, S., Irwin, M., Matthews, C., Mayne, S., Gail, M., & Moore, S. et al. (2010). Beyond Recreational Physical Activity: Examining Occupational and Household Activity, Transportation Activity, and Sedentary Behavior in Relation to Postmenopausal Breast Cancer Risk. *American Journal Of Public Health*, *100*(11), 2288-2295. https://doi.org/10.2105/ajph.2009.180828

208) George, T., & Rail, G. (2006). Barbie Meets the Bindi: Discursive Constructions of Health among Young South-Asian Canadian Women. *Women'S Health And Urban Life*, *4*(2), 44–66. Retrieved 18 June 2020, from.

209) Ghazal, K. (2018). Physical benefits of (Salah) prayer - Strengthen the faith & fitness. *Journal Of Novel Physiotherapy And Rehabilitation*, 043-053. https://doi.org/10.29328/journal.jnpr.1001020

210) Ghose, A., Kundu, R., Toumeh, A., Hornbeck, C., & Mohamed, I. (2015). A Review of Obesity, Insulin Resistance, and the Role of Exercise in Breast Cancer Patients. *Nutrition And Cancer*, *67*(2), 197-202. https://doi.org/10.1080/01635581.2015.990569

211) Giacalone, A., Alessandria, P., & Ruberti, E. (2019). The Physiotherapy Intervention for Shoulder Pain in Patients Treated for Breast Cancer: Systematic Review. *Cureus*. https://doi.org/10.7759/cureus.6416

212) Giacaman, R. (2010). *No Palestinian is Safe: Population Dynamics and the Wellbeing of Men, Women, and Children Through Objective Measures and Subjective Indicators.*. Palestine: Institute of Community and Public Health, Birzeit University.

213) Giacaman, R., Khatib, R., Shabaneh, L., Ramlawi, A., Sabri, B., & Sabatinelli, G. et al. (2019). *Health status and health services in the occupied Palestinian territory*. Retrieved 9 October 2019, from.

214) Glaser, B. (1965). The Constant Comparative Method of Qualitative Analysis. *Social Problems*, *12*(4), 436-445. https://doi.org/10.1525/sp.1965.12.4.03a00070

215) *Global Health Expenditure Database*. Apps.who.int. (2020). Retrieved 7 June 2020, from https://apps.who.int/nha/database/ViewData/Indicators/en.

216) Goldblatt, H., Cohen, M., Azaiza, F., & Manassa, R. (2012). Being within or being between? The cultural context of Arab women's experience of coping with breast cancer in Israel. *Psycho-Oncology*, *22*(4), 869-875. https://doi.org/10.1002/pon.3078

217) Gough, D. (2013). Meta-narrative and realist reviews: guidance, rules, publication standards and quality appraisal. *BMC Medicine*, *11*(1). https://doi.org/10.1186/1741-7015-11-22

218) Green, J., & Thorogood, N. (2018). *Qualitative methods for health research* (3rd ed., p. 56). SAGE Publications.

219) Green, J., Willis, K., Hughes, E., Small, R., Welch, N., Gibbs, L., & Daly, J. (2007). Generating best evidence from qualitative research: the role of data analysis. *Australian And New Zealand Journal Of Public Health*, *31*(6), 545-550. https://doi.org/10.1111/j.1753-6405.2007.00141.x

220) Greene, J., Caracelli, V., & Graham, W. (1989). Toward a Conceptual Framework for Mixed-Method Evaluation Designs. *Educational Evaluation and Policy Analysis*, *11*(3), 255-274. https://doi.org/10.3102/01623737011003255

221) Greenhalgh, T., & O'Riordan, L. (2018). *The complete guide to breast cancer* (1st ed.). Vermilion.

222) Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., Kyriakidou, O., & Peacock, R. (2005). Storylines of research in diffusion of innovation: a meta-narrative approach to systematic review. *Social Science & Medicine*, *61*(2), 417-430. https://doi.org/10.1016/j.socscimed.2004.12.001

223) Gubrium, J. (2012). *The Sage handbook of interview research* (2nd ed., p. 105). Sage.

224) Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are Enough?.*Field Methods*, *18*(1), 59-82. https://doi.org/10.1177/1525822x05279903

225) *Guidelines for Data Processing and Analysis of the International Physical Activity Questionnaire (IPAQ)*. https://sites.google.com/site/theipaq/scoring-protocol. (2005). Retrieved 12 June 2020, from https://sites.google.com/site/theipaq/scoring-protocol.

226) GUNTHORPE, W., & LYONS, K. (2004). A Predictive Model of Chronic Time Pressure in the Australian Population: Implications for Leisure Research. *Leisure Sciences*, *26*(2), 201-213. https://doi.org/10.1080/01490400490432127

227) Guthold, R., Ono, T., Strong, K., Chatterji, S., & Morabia, A. (2008). Worldwide Variability in Physical Inactivity. *American Journal Of Preventive Medicine*, *34*(6), 486-494. https://doi.org/10.1016/j.amepre.2008.02.013

228) Guz, H., Gursel, B., & Ozbek, N. (2010). Religious and Spiritual Practices Among Patients with Cancer. *Journal Of Religion And Health*, *51*(3), 763-773. https://doi.org/10.1007/s10943-010-9377-0

229) Haddou Rahou, B., El Rhazi, K., Ouasmani, F., Nejjari, C., Bekkali, R., Montazeri, A., & Mesfioui, A. (2016). Quality of life in Arab women with breast cancer: a review of the literature. *Health and Quality of Life Outcomes*, *14*(1). https://doi.org/10.1186/s12955-016-0468-9

230) Hair, B., Hayes, S., Tse, C., Bell, M., & Olshan, A. (2014). Racial differences in physical activity among breast cancer survivors: Implications for breast cancer care. *Cancer*, *120*(14), 2174-2182. https://doi.org/10.1002/cncr.28630

231) Halahleh, K., & Gale, R. (2018). Cancer care in the Palestinian territories. *The Lancet Oncology*, *19*(7), e359-e364. https://doi.org/10.1016/s1470-2045(18)30323-1

232) Halligan, P. (2006). Caring for patients of Islamic denomination: critical care nurses' experiences in Saudi Arabia. *Journal Of Clinical Nursing*, *15*(12), 1565-1573. https://doi.org/10.1111/j.1365-2702.2005.01525.x

233) Hamdam Saliba, H. (2014). Urban planning and the everyday experience of Palestinian women in Jaffa. *Documents D'anàlisi Geogràfica*, *60*(1), 115. https://doi.org/10.5565/rev/dag.74

234) Hamer, J., & Warner, E. (2017). Lifestyle modifications for patients with breast cancer to improve prognosis and optimize overall health. *Canadian Medical Association Journal*, *189*(7), E268-E274. https://doi.org/10.1503/cmaj.160464

235) Hamilton, M., Healy, G., Dunstan, D., Zderic, T., & Owen, N. (2008). Too little exercise and too much sitting: Inactivity physiology and the need for new recommendations on sedentary behavior. *Current Cardiovascular Risk Reports*, *2*(4), 292-298. https://doi.org/10.1007/s12170-008-0054-8

236) Hammoud, M., White, C., & Fetters, M. (2005). Opening cultural doors: Providing culturally sensitive healthcare to Arab American and American Muslim patients. *American Journal Of Obstetrics And Gynecology*, *193*(4), 1307-1311. https://doi.org/10.1016/j.ajog.2005.06.065

237) Hammoudeh, W., Hogan, D., & Giacaman, R. (2016). From a Death Sentence to a Disrupted Life. *Qualitative Health Research*, *27*(4), 487-496. https://doi.org/10.1177/1049732316628833

238) Hannah Rought-Brooks, H., Duaibis, S., & Hussein, S. (2010). Palestinian Women: Caught in the Cross Fire Between Occupation and Patriarchy. *Feminist Formations*, *22*(3), 124-145. https://doi.org/10.1353/ff.2010.0018

239) Hanson, S., Guell, C., & Jones, A. (2016). Walking groups in socioeconomically deprived communities: A qualitative study using photo elicitation. *Health & Place*, *39*, 26-33. https://doi.org/10.1016/j.healthplace.2016.02.007

240) Harcourt, D., & Frith, H. (2008). Women's Experiences of an Altered Appearance during Chemotherapy. *Journal Of Health Psychology*, *13*(5), 597-606. https://doi.org/10.1177/1359105308090932

241) Hardcastle, S., Kane, R., Chivers, P., Hince, D., Dean, A., Higgs, D., & Cohen, P. (2018). Knowledge, attitudes, and practice of oncologists and oncology health care providers in promoting physical activity to cancer survivors: an international survey. *Supportive Care In Cancer*, *26*(11), 3711-3719. https://doi.org/10.1007/s00520-018-4230-1

242) Harrison, J., Reid, J., Quinn, T., & Shenkin, S. (2016). Using quality assessment tools to critically appraise ageing research: a guide for clinicians. *Age And Ageing*, *46*(3), 359-365. https://doi.org/10.1093/ageing/afw223

243) Haseler, C., Crooke, R., & Haseler, T. (2019). Promoting physical activity to patients. *BMJ*, l5230. https://doi.org/10.1136/bmj.l5230

244) Hashemi, S., Balouchi, A., Al-Mawali, A., Rafiemanesh, H., Rezaie-Keikhaie, K., & Bouya, S. et al. (2019). Health-related quality of life of breast cancer patients in the Eastern Mediterranean region: a systematic review and meta-analysis. *Breast Cancer Research And Treatment*, *174*(3), 585-596. https://doi.org/10.1007/s10549-019-05131-0

245) Hasso, F. (2011). *Consuming desires* (1st ed.). Stanford Univ. Press.

246) Haug, S., DeMarinis, V., Danbolt, L., & Kvigne, K. (2016). The illness reframing process in an ethnic-majority population of older people with incurable cancer: variations of cultural- and existential meaning-making adjustments. *Mental Health, Religion & Culture*, *19*(2), 150-163. https://doi.org/10.1080/13674676.2015.1126705

247) Haussmann, A., Gabrian, M., Ungar, N., Jooß, S., Wiskemann, J., Sieverding, M., & Steindorf, K. (2018). What hinders healthcare professionals in promoting physical activity towards cancer patients? The influencing role of healthcare professionals' concerns, perceived patient characteristics and perceived structural factors. *European Journal Of Cancer Care*, *27*(4), e12853. https://doi.org/10.1111/ecc.12853

248) Haussmann, A., Ungar, N., Tsiouris, A., Sieverding, M., Wiskemann, J., & Steindorf, K. (2019). The Influence of Cancer Patient Characteristics on the Recommendation of Physical Activity by Healthcare Professionals. *International Journal Of Behavioral Medicine*, *27*(1), 65-78. https://doi.org/10.1007/s12529-019-09833-z

249) Hayes, S., Johansson, K., Stout, N., Prosnitz, R., Armer, J., Gabram, S., & Schmitz, K. (2012). Upper-body morbidity after breast cancer. *Cancer*, *118*(S8), 2237-2249. https://doi.org/10.1002/cncr.27467

250) Hayes, S., Rye, S., Battistutta, D., DiSipio, T., & Newman, B. (2010). Upper-body morbidity following breast cancer treatment is common, may persist longer-term and adversely influences quality of life. *Health And Quality Of Life Outcomes*, *8*(1), 92. https://doi.org/10.1186/1477-7525-8-92

251) Health.gov. (2019). Retrieved 23 October 2019, from https://health.gov/paguidelines/second-edition/pdf/Physical_Activity_Guidelines_2nd_edition.pdf.

252) Hébert, E., Caughy, M., & Shuval, K. (2012). Primary care providers' perceptions of physical activity counselling in a clinical setting: a systematic review. *British Journal Of Sports Medicine*, *46*(9), 625-631. https://doi.org/10.1136/bjsports-2011-090734

253) Hebert, R., Zdaniuk, B., Schulz, R., & Scheier, M. (2009). Positive and Negative Religious Coping and Well-Being in Women with Breast Cancer. *Journal Of Palliative Medicine*, *12*(6), 537-545. https://doi.org/10.1089/jpm.2008.0250

254) Hefferon, K., Murphy, H., McLeod, J., Mutrie, N., & Campbell, A. (2013). Understanding barriers to exercise implementation 5-year post-breast cancer diagnosis: a large-scale qualitative study. *Health Education Research*, *28*(5), 843-856. https://doi.org/10.1093/her/cyt083

255) Helou, K., El Helou, N., Mahfouz, M., Mahfouz, Y., Salameh, P., & Harmouche-Karaki, M. (2017). Validity and reliability of an adapted arabic version of the long international physical activity questionnaire. *BMC Public Health*, *18*(1). https://doi.org/10.1186/s12889-017-4599-7

256) Henderson, S., Kendall, E., & See, L. (2011). The effectiveness of culturally appropriate interventions to manage or prevent chronic disease in culturally and linguistically diverse communities: a systematic literature review. *Health & Social Care In The Community*, *19*(3), 225-249. https://doi.org/10.1111/j.1365-2524.2010.00972.x

257) Hennink, M., Hutter, I., & Bailey, A. (2010). *Qualitative research methods*. SAGE Publications Ltd.

258) Hesse, B., Nelson, D., Kreps, G., Croyle, R., Arora, N., Rimer, B., & Viswanath, K. (2005). Trust and Sources of Health Information. *Archives Of Internal Medicine*, *165*(22), 2618. https://doi.org/10.1001/archinte.165.22.2618

259) Hesse-Biber, S. (2012). *Handbook of feminist research*. SAGE.

260) Hewison, J., & Haines, A. (2006). Overcoming barriers to recruitment in health research. *BMJ*, *333*(7562), 300-302. https://doi.org/10.1136/bmj.333.7562.300

261) Hewitt, M., & Ganz, P. (2006). *From cancer patient to cancer survivor*. National Academies Press.

262) Hewitt-Taylor, J. (2001). Use of constant comparative analysis in qualitative research. *Nursing Standard*, *15*(42), 39-42. https://doi.org/10.7748/ns2001.07.15.42.39.c3052

263) Hidding, J., Beurskens, C., van der Wees, P., van Laarhoven, H., & Nijhuis-van der Sanden, M. (2014). Treatment Related Impairments in Arm and Shoulder in Patients with Breast Cancer: A Systematic Review. *Plos ONE*, *9*(5), e96748. https://doi.org/10.1371/journal.pone.0096748

264) *History of Palestine*. En.wikipedia.org. (2020). Retrieved 28 May 2020, from https://en.wikipedia.org/wiki/History_of_Palestine.

265) Hofstede, G. (2011). Dimensionalizing Cultures: The Hofstede Model in Context. *Online Readings in Psychology and Culture*, *2*(1). https://doi.org/10.9707/2307-0919.1014

266) Holland, F., Archer, S., & Montague, J. (2016). Younger women's experiences of deciding against delayed breast reconstruction post-mastectomy following breast cancer: An interpretative phenomenological analysis. *Journal of Health Psychology*, *21*(8), 1688-1699. https://doi.org/10.1177/1359105314562085

267) Holloway, I. (2007). *Qualitative Research in Health Care*. McGraw-Hill International (UK) Ltd.

268) Holmes, M. (2005). Physical Activity and Survival After Breast Cancer Diagnosis. *JAMA*, *293*(20), 2479. https://doi.org/10.1001/jama.293.20.2479

269) Hourani, A., & Ruthven, M. (2013). *A history of the arab peoples*. Faber and Faber.

270) Howard, A., Balneaves, L., & Bottorff, J. (2007). Ethnocultural Women's Experiences of Breast Cancer. *Cancer Nursing*, *30*(4), E27-E35. https://doi.org/10.1097/01.ncc.0000281737.33232.3c

271) Howard, A., Bottorff, J., Balneaves, L., & Grewal, S. (2007). Punjabi Immigrant Women's Breast Cancer Stories. *Journal of Immigrant and Minority Health*, *9*(4), 269-279. https://doi.org/10.1007/s10903-007-9044-z

272) *http://pcbs.gov.ps/Portals/_Rainbow/Documents/health-2018-05E.html*. Pcbs.gov.ps. (2020). Retrieved 20 June 2020, from http://pcbs.gov.ps/Portals/_Rainbow/Documents/health-2018-02E.html.

273) Huang, H., Chen, M., Liang, J., & Miaskowski, C. (2014). Changes in and predictors of severity of fatigue in women with breast cancer: A longitudinal study. *International Journal Of Nursing Studies*, *51*(4), 582-592. https://doi.org/10.1016/j.ijnurstu.2013.09.003

274) Hudson, M. (1997). Palestinians and Lebanon: the common story. *Journal Of Refugee Studies*, *10*(3), 243-260. https://doi.org/10.1093/jrs/10.3.243

275) Hughes, D., & Mojica, C. (2011). Weight Lifting for Women at Risk for Breast Cancer–Related Lymphedema: A Randomized Trial. *Yearbook Of Oncology*, *2011*, 3-5. https://doi.org/10.1016/j.yonc.2011.10.008

276) Hughes, D., Tirado-Gomez, M., Vallejo, L., Gonzalez, V., Treviño-Whitaker, R., Villanueva, G., & Basen-Engquist, K. (2015). Comparing determinants of physical activity in Puerto Rican, Mexican-American, and non-Hispanic white breast cancer survivors. *Springerplus*, *4*(1). https://doi.org/10.1186/s40064-015-1190-5

277) Hughes, S., Jaremka, L., Alfano, C., Glaser, R., Povoski, S., & Lipari, A. et al. (2014). Social support predicts inflammation, pain, and depressive symptoms: Longitudinal relationships among breast cancer survivors. *Psychoneuroendocrinology*, *42*, 38-44. https://doi.org/10.1016/j.psyneuen.2013.12.016

278) Huijg, J., Gebhardt, W., Verheijden, M., van der Zouwe, N., de Vries, J., Middelkoop, B., & Crone, M. (2014). Factors Influencing Primary Health Care Professionals' Physical Activity Promotion Behaviors: A Systematic Review. *International Journal Of Behavioral Medicine*, *22*(1), 32-50. https://doi.org/10.1007/s12529-014-9398-2

279) Husebø, A., Karlsen, B., Allan, H., Søreide, J., & Bru, E. (2014). Factors perceived to influence exercise adherence in women with breast cancer participating in an exercise programme during adjuvant chemotherapy: a focus group study. *Journal Of Clinical Nursing*, *24*(3-4), 500-510. https://doi.org/10.1111/jocn.12633

280) Husson, O., Mols, F., Fransen, M., van de Poll-Franse, L., & Ezendam, N. (2014). Low subjective health literacy is associated with adverse health behaviors and worse health-related quality of life among colorectal cancer survivors: results from the profiles registry. *Psycho-Oncology*, *24*(4), 478-486. https://doi.org/10.1002/pon.3678

281) Ibrahim, E., & Al-Homaidh, A. (2010). Physical activity and survival after breast cancer diagnosis: meta-analysis of published studies. *Medical Oncology*, *28*(3), 753-765. https://doi.org/10.1007/s12032-010-9536-x

282) Ijaz, S., Khalily, M., & Ahmad, I. (2017). Mindfulness in Salah Prayer and its Association with Mental Health. *Journal Of Religion And Health*, *56*(6), 2297-2307. https://doi.org/10.1007/s10943-017-0413-1

283) IJsbrandy, C., Hermens, R., Boerboom, L., Gerritsen, W., van Harten, W., & Ottevanger, P. (2019). Implementing physical activity programs for patients with cancer in current practice: patients' experienced barriers and facilitators. *Journal Of Cancer Survivorship*, *13*(5), 703-712. https://doi.org/10.1007/s11764-019-00789-3

284) IJsbrandy, C., van Harten, W., Gerritsen, W., Hermens, R., & Ottevanger, P. (2019). Healthcare professionals’ perspectives of barriers and facilitators in implementing physical activity programmes delivered to cancer survivors in a shared-care model: a qualitative study. *Supportive Care In Cancer*. https://doi.org/10.1007/s00520-019-05108-1

285) İMAMOĞLU, O. (2016). Benefits of Prayer as a Physical Activity. *International Journal Of Science Culture And Sport*, *4*(17), 306-306. https://doi.org/10.14486/intjscs559

286) *IPAQ scoring protocol - International Physical Activity Questionnaire*. www.ipaq.ki.se. (2005). Retrieved 12 June 2020, from https://sites.google.com/site/theipaq/scoring-protocol.

287) Ireland, A., Finnegan-John, J., Hubbard, G., Scanlon, K., & Kyle, R. (2019). Walking groups for women with breast cancer: Mobilising therapeutic assemblages of walk, talk and place. *Social Science & Medicine*, *231*, 38-46. https://doi.org/10.1016/j.socscimed.2018.03.016

288) Irwin, M. (2008). Physical activity interventions for cancer survivors. *British Journal Of Sports Medicine*, *43*(1), 32-38. https://doi.org/10.1136/bjsm.2008.053843

289) Irwin, M., McTiernan, A., Manson, J., Thomson, C., Sternfeld, B., & Stefanick, M. et al. (2011). Physical Activity and Survival in Postmenopausal Women with Breast Cancer: Results from the Women's Health Initiative. *Cancer Prevention Research*, *4*(4), 522-529. https://doi.org/10.1158/1940-6207.capr-10-0295

290) *Israel Central Bureau of Statistics*. Cbs.gov.il. (2016). Retrieved 22 August 2018, from https://www.cbs.gov.il/he/pages/default.aspx.

291) *Israeli-Palestinian Conflict | Global Conflict Tracker*. Global Conflict Tracker. (2020). Retrieved 23 February 2020, from https://www.cfr.org/interactive/global-conflict-tracker/conflict/israeli-palestinian-conflict.

292) Jabak, O., Abdullah, S., & Talif, R. (2016). Translation Shifts in Regard to Translation from English into Arabic and Vice Versa. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3444613

293) Jahan, N., Naveed, S., Zeshan, M., & Tahir, M. (2016). How to Conduct a Systematic Review: A Narrative Literature Review. *Cureus*. https://doi.org/10.7759/cureus.864

294) Jassim, G., & Whitford, D. (2013). Quality of life of Bahraini women with breast cancer: a cross sectional study. *BMC Cancer*, *13*(1). https://doi.org/10.1186/1471-2407-13-212

295) *JBI Reviewer's Manual - JBI Reviewer's Manual - JBI GLOBAL WIKI*. Reviewersmanual.joannabriggs.org. (2019). Retrieved 11 November 2019, from https://reviewersmanual.joannabriggs.org/.

296) Jim, H., Pustejovsky, J., Park, C., Danhauer, S., Sherman, A., & Fitchett, G. et al. (2015). Religion, spirituality, and physical health in cancer patients: A meta-analysis. *Cancer*, *121*(21), 3760-3768. https://doi.org/10.1002/cncr.29353

297) Jiwani, N., & Rail, G. (2010). Islam, Hijab and Young Shia Muslim Canadian Women’s Discursive Constructions of Physical Activity. *Sociology Of Sport Journal*, *27*(3), 251-267. https://doi.org/10.1123/ssj.27.3.251

298) Johnson, B., & Christensen, L. (2017). *Educational research* (5th ed.). SAGE Publications, Inc.

299) Johnson, B., & Christensen, L. (2019). *Educational research* (7th ed.). SAGE Publications.

300) Johnsson, A., Johnsson, A., & Johansson, K. (2013). Physical activity during and after adjuvant chemotherapy in patients with breast cancer. *Physiotherapy*, *99*(3), 221-227. https://doi.org/10.1016/j.physio.2012.05.012

301) Jones, A., & Paxton, R. (2015). Neighborhood disadvantage, physical activity barriers, and physical activity among African American breast cancer survivors. *Preventive Medicine Reports*, *2*, 622-627. https://doi.org/10.1016/j.pmedr.2015.07.010

302) Jones, L., & Courneya, K. (2002). Exercise Counseling and Programming Preferences of Cancer Survivors. *Cancer Practice*, *10*(4), 208-215. https://doi.org/10.1046/j.1523-5394.2002.104003.x

303) Jones, L., Courneya, K., Fairey, A., & Mackey, J. (2004). Effects of an oncologist's recommendation to exercise on self-reported exercise behavior in newly diagnosed breast cancer survivors: a single-blind, randomized controlled trial. *Annals Of Behavioral Medicine*, *28*(2), 105-113. https://doi.org/10.1207/s15324796abm2802_5

304) Jones, L., Courneya, K., Mackey, J., Muss, H., Pituskin, E., & Scott, J. et al. (2012). Cardiopulmonary Function and Age-Related Decline Across the Breast Cancer Survivorship Continuum. *Journal Of Clinical Oncology*, *30*(20), 2530-2537. https://doi.org/10.1200/jco.2011.39.9014

305) Jones, L., Courneya, K., Peddle, C., & Mackey, J. (2005). Oncologists' opinions towards recommending exercise to patients with cancer: a Canadian national survey. *Supportive Care In Cancer*, *13*(11), 929-937. https://doi.org/10.1007/s00520-005-0805-8

306) Jones, L., Habel, L., Weltzien, E., Castillo, A., Gupta, D., & Kroenke, C. et al. (2016). Exercise and Risk of Cardiovascular Events in Women With Nonmetastatic Breast Cancer. *Journal Of Clinical Oncology*, *34*(23), 2743-2749. https://doi.org/10.1200/jco.2015.65.6603

307) *Jordan | UNRWA*. UNRWA. (2019). Retrieved 8 October 2019, from https://www.unrwa.org/where-we-work/jordan.

308) Jørgensen, C., Thomsen, T., Ross, L., Dietz, S., Therkildsen, S., & Groenvold, M. et al. (2017). What Facilitates "Patient Empowerment" in Cancer Patients During Follow-Up: A Qualitative Systematic Review of the Literature.*Qualitative Health Research*, *28*(2), 292-304. https://doi.org/10.1177/1049732317721477

309) Joulaee, A., Joolaee, S., Kadivar, M., & Hajibabaee, F. (2012). Living with breast cancer: Iranian women's lived experiences. *International Nursing Review*, *59*(3), 362-368. https://doi.org/10.1111/j.1466-7657.2012.00979.x

310) Kagawa-Singer, M., Valdez Dadia, A., Yu, M., & Surbone, A. (2010). Cancer, Culture, and Health Disparities: Time to Chart a New Course?.*CA: A Cancer Journal For Clinicians*, *60*(1), 12-39. https://doi.org/10.3322/caac.20051

311) Kahan, D. (2003). Islam and Physical Activity: Implications for American Sport and Physical Educators. *Journal of Physical Education, Recreation & Dance*, *74*(3), 48-54. https://doi.org/10.1080/07303084.2003.10608470

312) Kahan, D. (2011). Arab American College Students' Physical Activity and Body Composition: Reconciling Middle East-West Differences Using the Socioecological Model. *Research Quarterly for Exercise And Sport*, *82*(1). https://doi.org/10.5641/027013611x13098902482058

313) Kahan, D. (2015). Adult physical inactivity prevalence in the Muslim world: Analysis of 38 countries. *Preventive Medicine Reports*, *2*, 71-75. https://doi.org/10.1016/j.pmedr.2014.12.007

314) Kalder, M., & Hadji, P. (2014). Breast Cancer and Osteoporosis - Management of Cancer Treatment-Induced Bone Loss in Postmenopausal Women with Breast Cancer. *Breast Care*, *9*(5), 9-9. https://doi.org/10.1159/000368843

315) Kalter-Leibovici, O. (2010). Lifestyle Intervention in Obese Arab Women. *Archives Of Internal Medicine*, *170*(11), 970. https://doi.org/10.1001/archinternmed.2010.103

316) Kampshoff, C., Stacey, F., Short, C., van Mechelen, W., Chinapaw, M., & Brug, J. et al. (2016). Demographic, clinical, psychosocial, and environmental correlates of objectively assessed physical activity among breast cancer survivors. *Supportive Care In Cancer*, *24*(8), 3333-3342. https://doi.org/10.1007/s00520-016-3148-8

317) Kang, D., Chung, J., Lee, M., Lee, J., Park, J., & Kim, D. et al. (2014). Exercise Barriers in Korean Colorectal Cancer Patients. *Asian Pacific Journal Of Cancer Prevention*, *15*(18), 7539-7545. https://doi.org/10.7314/apjcp.2014.15.18.7539

318) Kapila, A., Hamdi, M., & Patel, A. (2018). Clinicians Should Actively Promote Exercise in Survivors of Breast Cancer. *Clinical Breast Cancer*, *18*(5), e747-e749. https://doi.org/10.1016/j.clbc.2018.06.008

319) Karvinen, K., McGourty, S., Parent, T., & Walker, P. (2012). Physical Activity Promotion Among Oncology Nurses. *Cancer Nursing*, *35*(3), E41-E48. https://doi.org/10.1097/ncc.0b013e31822d9081

320) Karvinen, K., Raedeke, T., Arastu, H., & Allison, R. (2011). Exercise Programming and Counseling Preferences of Breast Cancer Survivors During or After Radiation Therapy. *Oncology Nursing Forum*, *38*(5), E326-E334. https://doi.org/10.1188/11.onf.e326-e334

321) Kaushik, V., & Walsh, C. (2019). Pragmatism as a Research Paradigm and Its Implications for Social Work Research. *Social Sciences*, *8*(9), 255. https://doi.org/10.3390/socsci8090255

322) Kelly, P., Murphy, M., Oja, P., Murtagh, E., & Foster, C. (2011). Estimates of the number of people in England who attain or exceed vigorous intensity exercise by walking at 3 mph. *Journal Of Sports Sciences*, *29*(15), 1629-1634. https://doi.org/10.1080/02640414.2011.609897

323) Kenison, T., Silverman, P., Sustin, M., & Thompson, C. (2014). Differences between nurse practitioner and physician care providers on rates of secondary cancer screening and discussion of lifestyle changes among breast cancer survivors. *Journal Of Cancer Survivorship*, *9*(2), 223-229. https://doi.org/10.1007/s11764-014-0405-z

324) Keogh, J., Olsen, A., Climstein, M., Sargeant, S., & Jones, L. (2015). Benefits and Barriers of Cancer Practitioners Discussing Physical Activity with their Cancer Patients. *Journal Of Cancer Education*, *32*(1), 11-15. https://doi.org/10.1007/s13187-015-0893-1

325) Keogh, J., Pühringer, P., Olsen, A., Jones, L., Climstein, M., & Sargeant, S. (2017). Physical Activity Promotion, Beliefs, and Barriers Among Australasian Oncology Nurses. *Oncology Nursing Forum*. https://doi.org/10.1188/17.onf.235-245

326) Khalidi, R. (1991). Arab Nationalism: Historical Problems in the Literature. *The American Historical Review*, *96*(5), 1363. https://doi.org/10.2307/2165275

327) Khan, K., Kunz, R., Kleijnen, J., & Antes, G. (2003). Five steps to conducting a systematic review. *JRSM*, *96*(3), 118-121. https://doi.org/10.1258/jrsm.96.3.118

328) Kharroubi, A., & Abu Seir, R. (2016). *Cancer Care in Palestine. In: Silbermann M. (eds) Cancer Care in Countries and Societies in Transition.* Springer, Cham.

329) Khleif, M., & Imam, A. (2013). Quality of life for Palestinian patients with cancer in the absence of a palliative-care service: a triangulated study. *The Lancet*, *382*, S23. https://doi.org/10.1016/s0140-6736(13)62595-7

330) Kielhofner, G. (2006). *Research in occupational therapy*. F.A. Davis.

331) Kilpela, L., Becker, C., Wesley, N., & Stewart, T. (2015). Body image in adult women: moving beyond the younger years. *Advances in Eating Disorders*, *3*(2), 144-164. https://doi.org/10.1080/21662630.2015.1012728

332) King, N., & Horrocks, C. (2010). *Interviews in qualitative research.* Sage Publications Ltd;.

333) Knight, P. (2002). *Small-Scale Research: Pragmatic Inquiry in Social Science and the Caring Professions,* SAGE Publications Ltd.

334) Kocan, S., & Gursoy, A. (2016). Body Image of Women with Breast Cancer After Mastectomy: A Qualitative Research. *Journal Of Breast Health*, *12*(4), 145-150. https://doi.org/10.5152/tjbh.2016.2913

335) Koch, A., & Nafziger, J. (2011). Self-regulation through Goal Setting*. *Scandinavian Journal Of Economics*, *113*(1), 212-227. doi: 10.1111/j.1467-9442.2010.01641.x

336) Kopec, J., Colangelo, L., Land, S., Julian, T., Brown, A., & Anderson, S. et al. (2012). Relationship Between Arm Morbidity and Patient-Reported Outcomes Following Surgery in Women with Node-Negative Breast Cancer: NSABP Protocol B-32. *The Journal Of Supportive Oncology*. https://doi.org/10.1016/j.suponc.2012.05.003

337) Koutoukidis, D., Lopes, S., Fisher, A., Williams, K., Croker, H., & Beeken, R. (2018). Lifestyle advice to cancer survivors: a qualitative study on the perspectives of health professionals. *BMJ Open*, *8*(3), e020313. https://doi.org/10.1136/bmjopen-2017-020313

338) Kumar, D., Kumar, V., & Savarna. (2016). The role of physiotherapy for the management of breast cancer and enhancing lifestyle for breast cancer survivors through physical activity and exercises. *International Journal Of Medicine Research*, *1*(1), 124-128. Retrieved 3 August 2020, from.

339) Kushi, L., Doyle, C., McCullough, M., Rock, C., Demark-Wahnefried, W., & Bandera, E. et al. (2012). American Cancer Society guidelines on nutrition and physical activity for cancer prevention. *CA: A Cancer Journal For Clinicians*, *62*(1), 30-67. https://doi.org/10.3322/caac.20140

340) Kuzari, D., Biderman, A., & Cwikel, J. (2013). Attitudes of women with breast cancer regarding the doctor-patient relationship. *European Journal Of Cancer Care*, *22*(5), 589-596. https://doi.org/10.1111/ecc.12063

341) Kwon, S., Hou, N., & Wang, M. (2011). Comparison of physical activity levels between cancer survivors and non-cancer participants in the 2009 BRFSS. *Journal Of Cancer Survivorship*, *6*(1), 54-62. https://doi.org/10.1007/s11764-011-0204-8

342) Lahart, I., Metsios, G., Nevill, A., & Carmichael, A. (2015). Physical activity, risk of death and recurrence in breast cancer survivors: A systematic review and meta-analysis of epidemiological studies. *Acta Oncologica*, *54*(5), 635-654. https://doi.org/10.3109/0284186x.2014.998275

343) Lavallée, J., Abdin, S., Faulkner, J., & Husted, M. (2019). Barriers and facilitators to participating in physical activity for adults with breast cancer receiving adjuvant treatment: A qualitative metasynthesis. *Psycho-Oncology*, *28*(3), 468-476. https://doi.org/10.1002/pon.4980

344) Lawler, S., Spathonis, K., Masters, J., Adams, J., & Eakin, E. (2010). Follow-up care after breast cancer treatment: experiences and perceptions of service provision and provider interactions in rural Australian women. *Supportive Care In Cancer*, *19*(12), 1975-1982. https://doi.org/10.1007/s00520-010-1041-4

345) Lawton, J., Ahmad, N., Hanna, L., Douglas, M., & Hallowell, N. (2005). ‘I can't do any serious exercise’: barriers to physical activity amongst people of Pakistani and Indian origin with Type 2 diabetes. *Health Education Research*, *21*(1), 43-54. https://doi.org/10.1093/her/cyh042

346) Lee, P., Macfarlane, D., Lam, T., & Stewart, S. (2011). Validity of the international physical activity questionnaire short form (IPAQ-SF): A systematic review. *International Journal Of Behavioral Nutrition And Physical Activity*, *8*(1), 115. https://doi.org/10.1186/1479-5868-8-115

347) Lee, T., Kilbreath, S., Sullivan, G., Refshauge, K., Beith, J., & Harris, L. (2009). Factors That Affect Intention to Avoid Strenuous Arm Activity After Breast Cancer Surgery. *Oncology Nursing Forum*, *36*(4), 454-462. https://doi.org/10.1188/09.onf.454-462

348) Leung, L. (2015). Validity, reliability, and generalizability in qualitative research. *Journal Of Family Medicine And Primary Care*, *4*(3), 324. https://doi.org/10.4103/2249-4863.161306

349) Levett-Jones, T., & Jones, M. (2018). Physical activity for women diagnosed with breast cancer after adjuvant therapy: A Cochrane review summary. *International Journal Of Nursing Studies*. https://doi.org/10.1016/j.ijnurstu.2018.12.002

350) Lewis-Smith, H., Diedrichs, P., Rumsey, N., & Harcourt, D. (2018). Efficacy of psychosocial and physical activity-based interventions to improve body image among women treated for breast cancer: A systematic review. *Psycho-Oncology*, *27*(12), 2687-2699. https://doi.org/10.1002/pon.4870

351) Leydon, G. (2000). Cancer patients' information needs and information seeking behaviour: in depth interview study. *BMJ*, *320*(7239), 909-913. https://doi.org/10.1136/bmj.320.7239.909

352) Liamputtong, P. (2013). *Stigma, Discrimination and Living with HIV/AIDS*. Springer Netherlands.

353) Liberati, A., Altman, D., Tetzlaff, J., Mulrow, C., Gotzsche, P., & Ioannidis, J. et al. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration. *BMJ*, *339*(jul21 1), b2700-b2700. https://doi.org/10.1136/bmj.b2700

354) Lilliehorn, S., Hamberg, K., Kero, A., & Salander, P. (2009). ‘Admission into a helping plan’: a watershed between positive and negative experiences in breast cancer. *Psycho-Oncology*, *19*(8), 806-813. https://doi.org/10.1002/pon.1619

355) Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry* (1st ed.). Sage Publications.

356) Lindbohm, M., Kuosma, E., Taskila, T., Hietanen, P., Carlsen, K., Gudbergsson, S., & Gunnarsdottir, H. (2013). Early retirement and non-employment after breast cancer. *Psycho-Oncology*, *23*(6), 634-641. https://doi.org/10.1002/pon.3459

357) Link, B., & Phelan, J. (2001). Conceptualizing Stigma. *Annual Review Of Sociology*, *27*(1), 363-385. https://doi.org/10.1146/annurev.soc.27.1.363

358) Link, B., & Phelan, J. (2006). Stigma and its public health implications. *The Lancet*, *367*(9509), 528-529. https://doi.org/10.1016/s0140-6736(06)68184-1

359) Lipka, M., & Hackett, C. (2020). *Why Muslims are the world’s fastest-growing religious group*. Pew Research Center. Retrieved 19 March 2020, from https://www.pewresearch.org/fact-tank/2017/04/06/why-muslims-are-the-worlds-fastest-growing-religious-group/.

360) Lipson, J., & Meleis, A. (1983). Issues in health care of Middle Eastern patients. *The Western Journal Of Medicine*, *139*(6), 854-861. Retrieved 26 April 2020, from.

361) Livsey, L., & Lewis, K. (2017). Breast cancer survivors’ perceptions of participating in a supervised exercise intervention: An exploratory review of the literature. *Women & Health*, *58*(9), 1017-1036. https://doi.org/10.1080/03630242.2017.1372844

362) Lobelo, F., Stoutenberg, M., & Hutber, A. (2014). The Exercise is Medicine Global Health Initiative: a 2014 update. *British Journal Of Sports Medicine*, *48*(22), 1627-1633. https://doi.org/10.1136/bjsports-2013-093080

363) Loh, S., Chew, S., & Lee, S. (2011). Physical activity and women with breast cancer: insights from expert patients. *Asian Pacific Journal Of Cancer Prevention.*,*12*(1), 87-94. Retrieved 15 November 2019, from.

364) Long, K., McDermott, F., & Meadows, G. (2018). Being pragmatic about healthcare complexity: our experiences applying complexity theory and pragmatism to health services research. *BMC Medicine*, *16*(1). https://doi.org/10.1186/s12916-018-1087-6

365) Loprinzi, P., Cardinal, B., Winters-Stone, K., Smit, E., & Loprinzi, C. (2012). Physical Activity and the Risk of Breast Cancer Recurrence: A Literature Review. *Oncology Nursing Forum*, *39*(3), 269-274. https://doi.org/10.1188/12.onf.269-274

366) Lowe, A., Gee, M., McLean, S., Littlewood, C., Lindsay, C., & Everett, S. (2016). Physical activity promotion in physiotherapy practice: a systematic scoping review of a decade of literature. *British Journal Of Sports Medicine*, *52*(2), 122-127. https://doi.org/10.1136/bjsports-2016-096735

367) Lucas, A., Levine, B., & Avis, N. (2017). Posttreatment trajectories of physical activity in breast cancer survivors. *Cancer*, *123*(14), 2773-2780. https://doi.org/10.1002/cncr.30641

368) Luoma, M., Hakamies-Blomqvist, L., Blomqvist, C., Nikander, R., Gustavsson-Lilius, M., & Saarto, T. (2014). Experiences of breast cancer survivors participating in a tailored exercise intervention: a qualitative study. *Anticancer Research*, *34*(3), 1193-9. Retrieved 22 June 2020, from.

369) Lynch, B. (2016). Taking steps to improve quality of life after cancer: the role of physical activity. *Expert Review Of Quality Of Life In Cancer Care*, *1*(4), 261-262. https://doi.org/10.1080/23809000.2016.1195690

370) Lynn Gall, T., & Cornblat, M. (2002). Breast cancer survivors give voice: a qualitative analysis of spiritual factors in long-term adjustment. *Psycho-Oncology*, *11*(6), 524-535. https://doi.org/10.1002/pon.613

371) Lyons, K., Lambert, L., Balan, S., Hegel, M., & Bartels, S. (2012). Changes in Activity Levels of Older Adult Cancer Survivors. *OTJR: Occupation, Participation And Health*, *33*(1), 31-39. https://doi.org/10.3928/15394492-20120607-02

372) Ma, G., Gao, Lee, S., Wang, Tan, & Shive. (2012). Health seeking behavioral analysis associated with breast cancer screening among Asian American women. *International Journal Of Women's Health*, 235. https://doi.org/10.2147/ijwh.s30738

373) Maajani, K., Khodadost, M., Fattahi, A., & Pirouzi, A. (2020). Survival rates of patients with breast cancer in countries in the Eastern Mediterranean Region: a systematic review and meta-analysis. *Eastern Mediterranean Health Journal*, *26*(2), 219-232. https://doi.org/10.26719/2020.26.2.219

374) Mackenzie, C. (2014). ‘It is hard for mums to put themselves first’: How mothers diagnosed with breast cancer manage the sociological boundaries between paid work, family and

caring for the self. *Social Science & Medicine*, *117*, 96-106. https://doi.org/10.1016/j.socscimed.2014.07.043

375) Mackenzie, C. (2015). Breast cancer survivors' experiences of partner support and physical activity participation. *Psycho-Oncology*, *24*(9), 1197-1203. https://doi.org/10.1002/pon.3808

376) Mackereth, P., Farrell, C., Bardy, J., Molassiotis, A., & Finnegan-John, J. (2015). Legitimising fatigue after breast-cancer treatment. *British Journal Of Nursing*, *24*(Sup4), S4-S12. https://doi.org/10.12968/bjon.2015.24.sup4.s4

377) Macmillan.org.uk. (2019). Retrieved 7 October 2019, from https://www.macmillan.org.uk/documents/aboutus/health_professionals/physicalactivityevidencebasedguidance.pdf.

378) Madanat, H., Hawks, S., & Angeles, H. (2010). Obesity and Body Size Preferences of Jordanian Women. *Health Education & Behavior*, *38*(1), 91-98. https://doi.org/10.1177/1090198110376351

379) Madkhali, N., Santin, O., Noble, H., & Reid, J. (2019). Breast health awareness in an Arabic culture: A qualitative exploration. *Journal Of Advanced Nursing*. https://doi.org/10.1111/jan.14003

380) Majaj, L., Nassar, M., & De Allegri, M. (2013). “It’s not easy to acknowledge that I’m ill”: a qualitative investigation into the health seeking behavior of rural Palestinian women. *BMC Women's Health*, *13*(1). https://doi.org/10.1186/1472-6874-13-26

381) Malterud, K., Siersma, V., & Guassora, A. (2016). Sample Size in Qualitative Interview Studies. *Qualitative Health Research*, *26*(13), 1753-1760. https://doi.org/10.1177/1049732315617444

382) Maltser, S., Cristian, A., Silver, J., Morris, G., & Stout, N. (2017). A Focused Review of Safety Considerations in Cancer Rehabilitation. *PM&R*, *9*, S415-S428. https://doi.org/10.1016/j.pmrj.2017.08.403

383) Mangen, S. (1999). Qualitative research methods in cross-national settings. *International Journal of Social Research Methodology*, *2*(2), 109-124. https://doi.org/10.1080/136455799295087

384) Manneville, F., Rotonda, C., Conroy, T., Bonnetain, F., Guillemin, F., & Omorou, A. (2017). The impact of physical activity on fatigue and quality of life during and after adjuvant treatment for breast cancer. *Cancer*, *124*(4), 797-806. https://doi.org/10.1002/cncr.31108

385) Marrone, S. (2008). Factors That Influence Critical Care Nurses' Intentions to Provide Culturally Congruent Care to Arab Muslims. *Journal Of Transcultural Nursing*, *19*(1), 8-15. https://doi.org/10.1177/1043659607309143

386) Martin, E., Bulsara, C., Battaglini, C., Hands, B., & Naumann, F. (2015). Breast and Prostate Cancer Survivor Responses to Group Exercise and Supportive Group Psychotherapy. *Journal Of Psychosocial Oncology*, *33*(6), 620-634. https://doi.org/10.1080/07347332.2015.1082166

387) Martin, W., & Mason, S. (2003). Leisure in three Middle Eastern countries. *World Leisure Journal*, *45*(1), 35-44. https://doi.org/10.1080/04419057.2003.9674303

388) Martínez-Mesa, J., González-Chica, D., Duquia, R., Bonamigo, R., & Bastos, J. (2016). Sampling: how to select participants in my research study?.*Anais Brasileiros De Dermatologia*, *91*(3), 326-330. https://doi.org/10.1590/abd1806-4841.20165254

389) Masmoudi, S., Ellouze, F., Abidi, S., Boussen, H., & M'rad, M. (2016). Cancer du sein et sexualité chez des couples tunisiens confrontés au poids de l'incertitude vitale. *Psycho-Oncologie*, *10*(4), 281-283. https://doi.org/10.1007/s11839-016-0600-4

390) Mason, C., Alfano, C., Smith, A., Wang, C., Neuhouser, M., & Duggan, C. et al. (2013). Long-Term Physical Activity Trends in Breast Cancer Survivors. *Cancer Epidemiology Biomarkers & Prevention*, *22*(6), 1153-1161. https://doi.org/10.1158/1055-9965.epi-13-0141

391) Mason, J. (2002). *Qualitative researching* (2nd ed., p. 33). Sage Publications,.

392) Mathew, A. (2018). Global Survey of Clinical Oncology Workforce. *Journal Of Global Oncology*, (4), 1-12. https://doi.org/10.1200/jgo.17.00188

393) Maxwell, J. (2013). *Qualitative research design*. SAGE Publications.

394) McCann, L., Illingworth, N., Wengström, Y., Hubbard, G., & Kearney, N. (2010). Transitional experiences of women with breast cancer within the first year following diagnosis. *Journal Of Clinical Nursing*, *19*(13-14), 1969-1976. https://doi.org/10.1111/j.1365-2702.2009.03134.x

395) McCorkle, R., Ercolano, E., Lazenby, M., Schulman-Green, D., Schilling, L., Lorig, K., & Wagner, E. (2011). Self-management: Enabling and empowering patients living with cancer as a chronic illness. *CA: A Cancer Journal For Clinicians*, *61*(1), 50-62. https://doi.org/10.3322/caac.20093

396) McCoy, K., Hopkins-Price, P., & Rogers, L. (2011). Factors Influencing Long Term Physical Activity Adherence in Breast Cancer Survivors. *Medicine & Science In Sports & Exercise*, *43*(Suppl 1), 146. https://doi.org/10.1249/01.mss.0000403112.21514.d9

397) McNeely, M., Peddle, C., Parliament, M., & Courneya, K. (2006). Cancer Rehabilitation: Recommendations for Integrating Exercise Programming in the Clinical Practice Setting. *Current Cancer Therapy Reviews*, *2*(4), 351-360. https://doi.org/10.2174/157339406778699187

398) MELEIS, A., & SORRELL, L. (1981). Arab American Women and Their Birth Experiences. *MCN, The American Journal Of Maternal/Child Nursing*, *6*(3), 171-176. https://doi.org/10.1097/00005721-198105000-00009

399) Melnyk, B., & Fineout-Overholt, E. (2015). *Evidence-based Practice in Nursing & Healthcare: A Guide to Best Practice* (3rd ed., pp. 3–23). PA: Wolters Kluwer.

400) Melzer, K., Heydenreich, J., Schutz, Y., Renaud, A., Kayser, B., & Mäder, U. (2016). Metabolic Equivalent in Adolescents, Active Adults and Pregnant Women. *Nutrients*, *8*(7), 438. https://doi.org/10.3390/nu8070438

401) Meltzer, A., & McNulty, J. (2010). Body image and marital satisfaction: Evidence for the mediating role of sexual frequency and sexual satisfaction. *Journal Of Family Psychology*, *24*(2), 156-164. https://doi.org/10.1037/a0019063

402) Merom, D., Sinnreich, R., Aboudi, V., Kark, J., & Nassar, H. (2012). Lifestyle physical activity among urban Palestinians and Israelis: a cross-sectional comparison in the Palestinian-Israeli Jerusalem risk factor study. *BMC Public Health*, *12*(1). https://doi.org/10.1186/1471-2458-12-90

403) Merriam, S., & Tisdell, E. (2009). *Qualitative research: A guide to design and implementation* (2nd ed.). Jossey-Bass.

404) Merriam, S., Johnson-Bailey, J., Lee, M., Kee, Y., Ntseane, G., & Muhamad, M. (2001). Power and positionality: negotiating insider/outsider status within and across cultures. *International Journal Of Lifelong Education*, *20*(5), 405-416. https://doi.org/10.1080/02601370120490

405) *Middle East | Countries & Facts*. Encyclopedia Britannica. (2020). Retrieved 2 May 2020, from https://www.britannica.com/place/Middle-East.

406) Midtgaard, J., Baadsgaard, M., Møller, T., Rasmussen, B., Quist, M., & Andersen, C. et al. (2009). Self-reported physical activity behaviour; exercise motivation and information among Danish adult cancer patients undergoing chemotherapy. *European Journal Of Oncology Nursing*, *13*(2), 116-121. https://doi.org/10.1016/j.ejon.2009.01.006

407) Midtgaard, J., Hammer, N., Andersen, C., Larsen, A., Bruun, D., & Jarden, M. (2015). Cancer survivors' experience of exercise-based cancer rehabilitation – a meta-synthesis of qualitative research. *Acta Oncologica*, *54*(5), 609-617. https://doi.org/10.3109/0284186x.2014.995777

408) Miedema, B., & Easley, J. (2011). Barriers to rehabilitative care for young breast cancer survivors: a qualitative understanding. *Supportive Care In Cancer*, *20*(6), 1193-1201. https://doi.org/10.1007/s00520-011-1196-7

409) Miller, K., Nogueira, L., Mariotto, A., Rowland, J., Yabroff, K., & Alfano, C. et al. (2019). Cancer treatment and survivorship statistics, 2019. *CA: A Cancer Journal For Clinicians*, *69*(5), 363-385. https://doi.org/10.3322/caac.21565

410) Miller, S., & Forrest, J. (2001). Enhancing your practice through evidence-based decision making: PICO, learning how to ask good questions. *The Journal Of Evidenced-Based Dental Practice*, *1*(2), 136-141. https://doi.org/10.1067/med.2001.118720

411) Miller, W., Bakas, T., Buelow, J., & Habermann, B. (2013). Research Involving Participants With Chronic Diseases. *Clinical Nurse Specialist*, *27*(6), 307-313. https://doi.org/10.1097/nur.0b013e3182a8725a

412) *Minister of Health of the Palestinian National Authority. Registry Pc*. http://www.moh.gov.ps/portal/. (2016). Retrieved 2 July 2020, from http://www.moh.gov.ps/portal/.

413) Moghadam, V. (2004). Patriarchy in Transition: Women and the Changing Family in the Middle East. *Journal Of Comparative Family Studies*, *35*(2), 137-162. https://doi.org/10.3138/jcfs.35.2.137

414) Moher, D. (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *Annals Of Internal Medicine*, *151*(4), 264. https://doi.org/10.7326/0003-4819-151-4-200908180-00135

415) Monteiro, S., Jancey, J., & Howat, P. (2014). Physical activity and nutrition intervention for mothers of young children: Process evaluation. *Health*, *06*(03), 223-230. https://doi.org/10.4236/health.2014.63033

416) Moo, T., Sanford, R., Dang, C., & Morrow, M. (2018). Overview of Breast Cancer Therapy. *PET Clin .*, *13*(3), 339–354. https://doi.org/10.1016/j.cpet.2018.02.006.

417) Moore, R., & Spiegel, D. (2004). *Cancer, Culture and Communication*. Springer.

418) Moran-Ellis, J., Alexander, V., Cronin, A., Dickinson, M., Fielding, J., Sleney, J., & Thomas, H. (2006). Triangulation and integration: processes, claims and implications. *Qualitative Research*, *6*(1), 45-59. https://doi.org/10.1177/1468794106058870

419) Moreira, H., & Canavarro, M. (2010). A longitudinal study about the body image and psychosocial adjustment of breast cancer patients during the course of the disease. *European Journal Of Oncology Nursing*, *14*(4), 263-270. https://doi.org/10.1016/j.ejon.2010.04.001

420) Morris, M., Crank, H., Loosemore, M., & Stevinson, C. (2020). Identification of Research Priorities in Exercise Oncology: A Consensus Study. *Journal Of Cancer*, *11*(9), 2702-2707. https://doi.org/10.7150/jca.42992

421) Morris, S., Guell, C., & Pollard, T. (2019). Group walking as a "lifeline": Understanding the place of outdoor walking groups in women's lives. *Social Science & Medicine*, *238*, 112489. https://doi.org/10.1016/j.socscimed.2019.112489

422) Morse, J. (2016). *Essentials of qualitatively-driven mixed-method designs* (1st ed.). Routledge.

423) Moule, P., Aveyard, H., & Goodman, M. (2017). *Nursing research an introduction* (3rd ed., pp. 302-303). Sage.

424) Mullings, B. (1999). Insider or outsider, both or neither: some dilemmas of interviewing in a cross-cultural setting. *Geoforum*, *30*(4), 337-350. https://doi.org/10.1016/s0016-7185(99)00025-1

425) Muniz da Costa Vargens, O., & Berterö, C. (2007). Living With Breast Cancer. *Cancer Nursing*, *30*(6), 471-478. https://doi.org/10.1097/01.ncc.0000300157.83144.fb

426) Munn, Z., Moola, S., Riitano, D., & Lisy, K. (2014). The development of a critical appraisal tool for use in systematic reviews addressing questions of prevalence. *International Journal Of Health Policy And Management*, *3*(3), 123-128. https://doi.org/10.15171/ijhpm.2014.71

427) Musaiger, A. (2011). Overweight and Obesity in Eastern Mediterranean Region: Prevalence and Possible Causes. *Journal Of Obesity*, *2011*, 1-17. https://doi.org/10.1155/2011/407237

428) Musaiger, A., Al-Awadi, A., & Al-Mannai, M. (2000). Lifestyle and social factors associated with obesity among the Bahraini adult population. *Ecology Of Food And Nutrition*, *39*(2), 121-133. https://doi.org/10.1080/03670244.2000.9991610

429) MUSAIGER, A., SHAHBEEK, N., & AL-MANNAI, M. (2004). THE ROLE OF SOCIAL FACTORS AND WEIGHT STATUS IN IDEAL BODY-SHAPE PREFERENCES AS PERCEIVED BY ARAB WOMEN. *Journal Of Biosocial Science*, *36*(6), 699-707. https://doi.org/10.1017/s0021932003006412

430) Nadler, M., Bainbridge, D., Tomasone, J., Cheifetz, O., Juergens, R., & Sussman, J. (2017). Oncology care provider perspectives on exercise promotion in people with cancer: an examination of knowledge, practices, barriers, and facilitators. *Supportive Care In Cancer*, *25*(7), 2297-2304. https://doi.org/10.1007/s00520-017-3640-9

431) Nasiri, A., Taleghani, F., & Irajpour, A. (2012). Men's Sexual Issues After Breast Cancer in Their Wives. *Cancer Nursing*, *35*(3), 236-244. https://doi.org/10.1097/ncc.0b013e31822d48e5

432) Nasser, M., van Weel, C., van Binsbergen, J., & van de Laar, F. (2012). Generalizability of systematic reviews of the effectiveness of health care interventions to primary health care: concepts, methods and future research. *Family Practice*, *29*(suppl 1), i94-i103. https://doi.org/10.1093/fampra/cmr129

433) *NCCN Clinical Practice Guidelines in Oncology*. Nccn.org. (2018). Retrieved 2 August 2020, from https://www.nccn.org/professionals/physician_gls/default.aspx#site.

434) Neergaard, M., Olesen, F., Andersen, R., & Sondergaard, J. (2009). Qualitative description – the poor cousin of health research?.*BMC Medical Research Methodology*, *9*(1). https://doi.org/10.1186/1471-2288-9-52

435) Nilsson, M., Olsson, M., Wennman-Larsen, A., Petersson, L., & Alexanderson, K. (2012). Women's reflections and actions regarding working after breast cancer surgery - a focus group study. *Psycho-Oncology*, *22*(7), 1639-1644. https://doi.org/10.1002/pon.3192

436) Noeres, D., Park-Simon, T., Grabow, J., Sperlich, S., Koch-Gießelmann, H., Jaunzeme, J., & Geyer, S. (2013). Return to work after treatment for primary breast cancer over a 6-year period: results from a prospective study comparing patients with the general population. *Supportive Care In Cancer*, *21*(7), 1901-1909. https://doi.org/10.1007/s00520-013-1739-1

437) Noeres, D., Park-Simon, T., Grabow, J., Sperlich, S., Koch-Gießelmann, H., Jaunzeme, J., & Geyer, S. (2013). Return to work after treatment for primary breast cancer over a 6-year period: results from a prospective study comparing patients with the general population. *Supportive Care In Cancer*, *21*(7), 1901-1909. https://doi.org/10.1007/s00520-013-1739-1

438) Nowell, L., Norris, J., White, D., & Moules, N. (2017). Thematic Analysis. *International Journal Of Qualitative Methods*, *16*(1), 160940691773384. https://doi.org/10.1177/1609406917733847

439) Noyes, J., Booth, A., Moore, G., Flemming, K., Tunçalp, Ö., & Shakibazadeh, E. (2019). Synthesising quantitative and qualitative evidence to inform guidelines on complex interventions: clarifying the purposes, designs and outlining some methods. *BMJ Global Health*, *4*(Suppl 1), e000893. https://doi.org/10.1136/bmjgh-2018-000893

440) Nyrop, K., Deal, A., Williams, G., Guerard, E., Pergolotti, M., & Muss, H. (2016). Physical activity communication between oncology providers and patients with early stage breast, colon or prostate cancer. *Journal of Clinical Oncology*, *34*(3_suppl), 171-171. https://doi.org/10.1200/jco.2016.34.3_suppl.171

441) O'Callaghan, C., Schofield, P., Butow, P., Nolte, L., Price, M., & Tsintziras, S. et al. (2015). "I might not have cancer if you didn't mention it": a qualitative study on information needed by culturally diverse cancer survivors. *Supportive Care In Cancer*, *24*(1), 409-418. https://doi.org/10.1007/s00520-015-2811-9

442) Obeidat, N., Habashneh, M., Shihab, R., & Hawari, F. (2017). Are Jordanian primary healthcare practitioners fulfilling their potential in cancer prevention and community health? Findings from a cross-sectional survey. *BMJ Open*, *7*(4), e015269. https://doi.org/10.1136/bmjopen-2016-015269

443) Obeidat, R., Dickerson, S., Homish, G., Alqaissi, N., & Lally, R. (2013). Controlling Fear. *Cancer Nursing*, *36*(6), 484-492. https://doi.org/10.1097/ncc.0b013e31826fc9b4

444) Odeh Yosef, A. (2008). Health Beliefs, Practice, and Priorities for Health Care of Arab Muslims in the United States. *Journal Of Transcultural Nursing*, *19*(3), 284-291. https://doi.org/10.1177/1043659608317450

445) Ogce, F., & Ozkan, S. (2008). Changes in Functional Status and Physical and Psychological Symptoms in Women Receiving Chemotherapy for Breast Cancer. *Asian Pac J Cancer Prev*, *9*(3), 449-52. https://doi.org/PMID: 18990020

446) Oh, P., & Cho, J. (2020). Changes in Fatigue, Psychological Distress, and Quality of Life After Chemotherapy in Women with Breast Cancer. *Cancer Nursing*, *43*(1), E54-E60. https://doi.org/10.1097/ncc.0000000000000689

447) O'Hanlon, É.,& Kennedy, N. (2014). Exercise in cancer care in Ireland: a survey of oncology nurses and physiotherapists. *European Journal Of Cancer Care*, *23*(5), 630-639. https://doi.org/10.1111/ecc.12206

448) Olsson Möller, U., Beck, I., Rydén, L., & Malmström, M. (2019). A comprehensive approach to rehabilitation interventions following breast cancer treatment - a systematic review of systematic reviews. *BMC Cancer*, *19*(1). https://doi.org/10.1186/s12885-019-5648-7

449) Omran, S., & Al-Hassan, M. (2006). Gender differences in signs and symptoms presentation and treatment of Jordanian myocardial infarction patients. *International Journal Of Nursing Practice*, *12*(4), 198-204. https://doi.org/10.1111/j.1440-172x.2006.00572.x

450) Osoba, D. (1994). Lessons learned from measuring health-related quality of life in oncology. *Rehabilitation Oncology*, *12*(2), 18. https://doi.org/10.1097/01893697-199412020-00018

451) Ottenbacher, A., Day, R., Taylor, W., Sharma, S., Sloane, R., & Snyder, D. et al. (2011). Exercise among breast and prostate cancer survivors—what are their barriers?.*Journal Of Cancer Survivorship*, *5*(4), 413-419. https://doi.org/10.1007/s11764-011-0184-8

452) Owen, N., Healy, G., Matthews, C., & Dunstan, D. (2010). Too Much Sitting. *Exercise And Sport Sciences Reviews*, *38*(3), 105-113. https://doi.org/10.1097/jes.0b013e3181e373a2

453) Owen, N., Humpel, N., Leslie, E., Bauman, A., & Sallis, J. (2004). Understanding environmental influences on walking. *American Journal Of Preventive Medicine*, *27*(1), 67-76. https://doi.org/10.1016/j.amepre.2004.03.006

454) Owusu, C., Antognoli, E., Nock, N., Hergenroeder, P., Austin, K., & Bennet, E. et al. (2018). Perspective of older African-American and Non-Hispanic white breast cancer survivors from diverse socioeconomic backgrounds toward physical activity: A qualitative study. *Journal Of Geriatric Oncology*, *9*(3), 235-242. https://doi.org/10.1016/j.jgo.2017.12.003

455) Oyekanmi, G., & Paxton, R. (2014). Barriers to physical activity among African American breast cancer survivors. *Psycho-Oncology*, *23*(11), 1314-1317. https://doi.org/10.1002/pon.3527

456) Palestine refugees | UNRWA. UNRWA. (2020). Retrieved 3 August 2020, from https://www.unrwa.org/palestine-refugees.

457) Palestine | History, People, & Religion. Encyclopedia Britannica. (2020). Retrieved 1 March 2020, from https://www.britannica.com/place/Palestine.

458) Palestinian Health Information Center (PHIC) -MOH. (2018). *Health Status, Palestine, 2018,* (p. 93). Palestine: Ministry of Health, PHIC. Retrieved from http://healthclusteropt.org/admin/file_manager/uploads/files/1/Health%20Annual%20Report%20Palestine%202018.pdf

459) Palinkas, L., Horwitz, S., Green, C., Wisdom, J., Duan, N., & Hoagwood, K. (2013). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration And Policy In Mental Health And Mental Health Services Research*, *42*(5), 533-544. https://doi.org/10.1007/s10488-013-0528-y

460) Palmer, D. (2010). *Teaching with technology: A multiple-case study of teachers' perspectives on the use of technology-based instruction* (Ph.D. thesis). Walden University.

461) Pan, Y., Yang, K., Wang, Y., Zhang, L., & Liang, H. (2015). Could yoga practice improve

462) Park, J., Kim, N., & Kang, S. (2015). Analysis of Physical Activity Measured by International Physical Activity Questionnaire and Actigraph Accelerometer, and Participation Intention for Physical Activity of Breast Cancer Survivors. *Journal Of Korean Biological Nursing Science*, *17*(2), 104-113. https://doi.org/10.7586/jkbns.2015.17.2.104

463) Park, J., Lee, J., Oh, M., Park, H., Chae, J., & Kim, D. et al. (2015). The effect of oncologists' exercise recommendations on the level of exercise and quality of life in survivors of breast and

colorectal cancer: A randomized controlled trial. *Cancer*, *121*(16), 2740-2748. https://doi.org/10.1002/cncr.29400

464) Park, J., Oh, M., Yoon, Y., Lee, C., Jones, L., & Kim, S. et al. (2015). Characteristics of attitude and recommendation of oncologists toward exercise in South Korea: a cross sectional survey study. *BMC Cancer*, *15*(1). https://doi.org/10.1186/s12885-015-1250-9

465) PATEL, A., FRIEDENREICH, C., MOORE, S., HAYES, S., SILVER, J., & CAMPBELL, K. et al. (2019). American College of Sports Medicine Roundtable Report on Physical Activity, Sedentary Behavior, and Cancer Prevention and Control. *Medicine & Science In Sports & Exercise*, *51*(11), 2391-2402. https://doi.org/10.1249/mss.0000000000002117

466) Paterson, C., Lengacher, C., Donovan, K., Kip, K., & Tofthagen, C. (2015). Body Image in Younger Breast Cancer Survivors. *Cancer Nursing*, 1. https://doi.org/10.1097/ncc.0000000000000251

467) Patton, M. (2002). *Qualitative Research & Evaluation Methods* (3rd ed.). SAGE Publications.

468) Patton, M. (2015). *Qualitative Research & Evaluation Methods: Integrating Theory and Practice* (5th ed., p. 157). SAGE Publications.

469) Paxton, R., Nayak, P., Taylor, W., Chang, S., Courneya, K., & Schover, L. et al. (2013). African-American breast cancer survivors' preferences for various types of physical activity interventions: a Sisters Network Inc. web-based survey. *Journal Of Cancer Survivorship*, *8*(1), 31-38. https://doi.org/10.1007/s11764-013-0307-5

470) *PCBS | Education*. Pcbs.gov.ps. (2016). Retrieved 20 June 2020, from http://pcbs.gov.ps/site/lang__en/708/default.aspx.

471) *PCBS | Statistics*. Pcbs.gov.ps. (2019). Retrieved 25 October 2019, from http://www.pcbs.gov.ps/site/507/default.aspx.

472) Pcbs.gov.ps. (2020). Retrieved 20 June 2020, from http://pcbs.gov.ps/Portals/_Rainbow/Documents/health-2018-02E.html.

473) Pennington, K., & McTiernan, A. (2018). The role of physical activity in breast and gynecologic cancer survivorship. *Gynecologic Oncology*, *149*(1), 198-204. https://doi.org/10.1016/j.ygyno.2018.01.020

474) Penttinen, H., Saarto, T., Kellokumpu-Lehtinen, P., Blomqvist, C., Huovinen, R., & Kautiainen, H. et al. (2010). Quality of life and physical performance and activity of breast cancer patients after adjuvant treatments. *Psycho-Oncology*, *20*(11), 1211-1220. https://doi.org/10.1002/pon.1837

475) Pew Research Center. (2016). *Restrictions on Women's Religious Attire*. Retrieved from http:///www.pewforum.org/2016/04/05/restrictions-on-womens-religious-attire/

476) Phillips, S., & McAuley, E. (2012). Social cognitive influences on physical activity participation in long-term breast cancer survivors. *Psycho-Oncology*, *22*(4), 783-791. https://doi.org/10.1002/pon.3074

477) Phillips, S., Dodd, K., Steeves, J., McClain, J., Alfano, C., & McAuley, E. (2015). Physical activity and sedentary behavior in breast cancer survivors: New insight into activity patterns and potential intervention targets. *Gynecologic Oncology*, *138*(2), 398-404. https://doi.org/10.1016/j.ygyno.2015.05.026

478) *Physical activity*. Who.int. (2019). Retrieved 31 July 2020, from https://www.who.int/health-topics/physical-activity#tab=tab_1.

479) *Physical Activity*. World Health Organization. (2019). Retrieved 23 October 2019, from https://www.who.int/dietphysicalactivity/pa/en/.

480) Pinto, B., & Ciccolo, J. (2011). *Physical Activity Motivation and Cancer Survivorship* [Ebook] (pp. pp 367-387). Springer, Berlin, Heidelberg. Retrieved 20 June 2020, from https://doi.org/10.1007/978-3-642-04231-7_16.

481) Pitman, A., Suleman, S., Hyde, N., & Hodgkiss, A. (2018). Depression and anxiety in patients with cancer. *BMJ*, k1415. https://doi.org/10.1136/bmj.k1415

482) Polit, D., & Beck, C. (2014). *Essentials of nursing research: Appraising evidence for nursing practice* (8th ed.). Wolters Kluwer.

483) Polkinghorne, D. (2005). Language and meaning: Data collection in qualitative research. *Journal Of Counseling Psychology*, *52*(2), 137-145. https://doi.org/10.1037/0022-0167.52.2.137

484) Polkinghorne, D. (2007). Validity Issues in Narrative Research. *Qualitative Inquiry*, *13*(4), 471-486. https://doi.org/10.1177/1077800406297670

485) Pope, C., & Mays, N. (1995). Qualitative Research: Reaching the parts other methods cannot reach: an introduction to qualitative methods in health and health services research. *BMJ*, *311*(6996), 42-45. https://doi.org/10.1136/bmj.311.6996.42

486) Porritt, K., Gomersall, J., & Lockwood, C. (2014). JBI's Systematic Reviews. *AJN, American Journal of Nursing*, *114*(6), 47-52. https://doi.org/10.1097/01.naj.0000450430.97383.64

487) Portaluri, M., Abu-Rmeileh, N., & Gianicolo, E. (2017). Radiation Therapy in Palestine: Not Only Money, But Also Real Accessibility. *International Journal Of Radiation Oncology*Biology*Physics*, *98*(3), 504-505. https://doi.org/10.1016/j.ijrobp.2017.03.038

488) Post, S. (2002). *Altruism & altruistic love* (pp. 51-64). Oxford University Press.

489) Powell, K., Paluch, A., & Blair, S. (2011). Physical Activity for Health: What Kind? How Much? How Intense? On Top of What?.*Annual Review Of Public Health*, *32*(1), 349-365. https://doi.org/10.1146/annurev-publhealth-031210-101151

490) Powers, N., Gullifer, J., & Shaw, R. (2016). When the treatment stops: A qualitative study of life post breast cancer treatment. *Journal Of Health Psychology*, *21*(7), 1371-1382. https://doi.org/10.1177/1359105314553963

491) Prigozin, A., Uziely, B., & Musgrave, C. (2010). The Relationship Between Symptom Severity and Symptom Interference, Education, Age, Marital Status, and Type of Chemotherapy Treatment in Israeli Women With Early-Stage Breast Cancer. *Oncology Nursing Forum*, *37*(6), E411-E418. https://doi.org/10.1188/10.onf.e411-e418

492) Prince, S., Adamo, K., Hamel, M., Hardt, J., Connor Gorber, S., & Tremblay, M. (2008). A comparison of direct versus self-report measures for assessing physical activity in adults: a systematic review. *International Journal Of Behavioral Nutrition And Physical Activity*, *5*(1), 56. https://doi.org/10.1186/1479-5868-5-56

493) Profile of Physical Activity, Perceived Barriers and Related Counselling Practices of Primary Health Care Physicians in Qatar: Cross-Sectional Study. (2020), *4*(2). https://doi.org/10.29011/2577-2228.100076

494) *Projected Changes in the Global Muslim Population*. Pew Research Center's Religion & Public Life Project. (2015). Retrieved 2 July 2020, from https://www.pewforum.org/2015/04/02/muslims/.

495) *Public health in Palestine*. Pniph.org. (2017). Retrieved 2 July 2020, from https://www.pniph.org/en/about/overview-of-public-health-in-palestine.

496) *Public health in Palestine*. Pniph.org. (2018). Retrieved 28 July 2020, from https://www.pniph.org/en/about/overview-of-public-health-in-palestine.

497) *Public health in Palestine*. Pniph.org. (2019). Retrieved 25 October 2019, from https://www.pniph.org/en/about/overview-of-public-health-in-palestine.

498) Queen, M., Karatzaferi, C., Bloxham, S., Panwar, U., Drew, P., & Barton, A. et al. (2016). How Can Physical Activity Referral Rates for Breast Cancer Patients be Increased?.*Frontiers In Oncology*, *6*. https://doi.org/10.3389/fonc.2016.00198

499) Rabbani, S., Salem Khalaf Al Marzooqi, A., Mousa Srouji, A., Hamad, E., & Mahtab, A. (2019). Impact of community-based educational intervention on breast cancer and its screening awareness among Arab women in the United Arab Emirates. *Clinical Epidemiology And Global Health*. https://doi.org/10.1016/j.cegh.2019.01.008

500) Rabin, C. (2009). Promoting Lifestyle Change Among Cancer Survivors: When Is the Teachable Moment?.*American Journal Of Lifestyle Medicine*, *3*(5), 369-378. https://doi.org/10.1177/1559827609338148

501) Rahnama, M., Khoshknab, M., Maddah, S., & Ahmadi, F. (2012). Iranian cancer patients' perception of spirituality: a qualitative content analysis study. *BMC Nursing*, *11*(1). https://doi.org/10.1186/1472-6955-11-19

502) Rajaram, S., & Rashidi, A. (2001). Asian-Islamic women and breast cancer screening: a sociocultural analysis. *Rehabilitation Oncology*, *19*(2), 33. https://doi.org/10.1097/01893697-200119020-00042

503) Ranjitha, G., & Unnithan, A. (2017). Self and Identity of Being an Ideal Woman: An Exploratory Qualitative Study. *IIM Kozhikode Society & Management Review*, *7*(1), 33-44. https://doi.org/10.1177/2277975217733883

504) Rapport, F., Hogden, A., Faris, M., Bierbaum, M., Clay-Williams, R., & Long, J. et al. (2018). *Qualitative Research in Healthcare MODERN METHODS, CLEAR TRANSLATION A WHITE PAPER*. Sydney, Australia.: Australian Institute of Health Innovation, Macquarie University.

505) Report of the Secretary-General. (2014). *Situation of and assistance to Palestinian women*. United Nations. Retrieved from https://www.un.org/unispal/document/auto-insert-180574/

506) *Report of the Special Rapporteur on violence against women, its causes and consequences, on her mission to the Occupied Palestinian Territory/State of Palestine**. (2017).

507) Rice, C. (2002). *Between body and culture: beauty, ability, and growing up female In V. Dhruvarajan & J. Vickers (Eds.), Gender, Race & Nation: AGlobal Perspective.* (p. 147). University of Toronto Press.

508) Richards, M., Corner, J., & Maher, J. (2011). The National Cancer Survivorship Initiative: new and emerging evidence on the ongoing needs of cancer survivors. *British Journal Of Cancer*, *105*(S1), S1-S4. https://doi.org/10.1038/bjc.2011.416

509) Riebe, D., Ehrman, J., Liguori, G., & Magal, M. (2018). *ACSM's guidelines for exercise testing and prescription*. Wolters Kluwer.

510) Roald, A. (2013). "Benevolent Patriarchy": Palestinian Women between "Ideal" and "Reality". *Islam And Christian–Muslim Relations*, *24*(3), 333-347. https://doi.org/10.1080/09596410.2013.788275

511) Robertson, L., Richards, R., Egan, R., & Szymlek-Gay, E. (2012). Promotion and support of physical activity among cancer survivors: a service provider perspective. *Psycho-Oncology*, n/a-n/a. https://doi.org/10.1002/pon.3032

512) Roberts, K., Dowell, A., & Nie, J. (2019). Attempting rigour and replicability in thematic analysis of qualitative research data; a case study of codebook development. *BMC Medical Research Methodology*, *19*(1). doi: 10.1186/s12874-019-0707-y

513)

514) Robinson, O. (2013). Sampling in Interview-Based Qualitative Research: A Theoretical and Practical Guide. *Qualitative Research In Psychology*, *11*(1), 25-41. https://doi.org/10.1080/14780887.2013.801543

515) Rodgers, M., Sowden, A., Petticrew, M., Arai, L., Roberts, H., Britten, N., & Popay, J. (2009). Testing Methodological Guidance on the Conduct of Narrative Synthesis in Systematic Reviews. *Evaluation*, *15*(1), 49-73. https://doi.org/10.1177/1356389008097871

516) ROGERS, L., COURNEYA, K., OSTER, R., ANTON, P., ROBBS, R., FORERO, A., & MCAULEY, E. (2017). Physical Activity and Sleep Quality in Breast Cancer Survivors. *Medicine & Science in Sports & Exercise*, *49*(10), 2009-2015. https://doi.org/10.1249/mss.0000000000001327

517) ROGERS, L., COURNEYA, K., SHAH, P., DUNNINGTON, G., & HOPKINS-PRICE, P. (2007). Exercise stage of change, barriers, expectations, values and preferences among breast cancer patients during treatment: a pilot study. *European Journal Of Cancer Care*, *16*(1), 55-66. https://doi.org/10.1111/j.1365-2354.2006.00705.x

518) Rogers, L., Courneya, K., Verhulst, S., Markwell, S., & McAuley, E. (2008). Factors Associated With Exercise Counseling and Program Preferences Among Breast Cancer Survivors. *Journal Of Physical Activity And Health*, *5*(5), 688-705. https://doi.org/10.1123/jpah.5.5.688

519) Rogers, L., Markwell, S., Verhulst, S., McAuley, E., & Courneya, K. (2009). Rural breast cancer survivors: exercise preferences and their determinants. *Psycho-Oncology*, *18*(4), 412-421. https://doi.org/10.1002/pon.1497

520) Rought-Brooks, H., Duaibis, S., & Hussein, S. (2010). Palestinian Women: Caught in the Cross Fire Between Occupation and Patriarchy. *Feminist Formations*, *22*(3), 124-145. https://doi.org/10.1353/ff.2010.0018

521) Roulston, K. (2014). *Reflective interviewing*. SAGE.

522) Rubenberg, C. (2001). *Palestinian Women: Patriarchy and Resistance in the West*. Lynne Rienner.

523) Rubin, H., & Rubin, I. (2012). *Qualitative interviewing*. Sage Publications.

524) Runowicz, C., Leach, C., Henry, N., Henry, K., Mackey, H., & Cowens-Alvarado, R. et al. (2016). American Cancer Society/American Society of Clinical Oncology Breast Cancer Survivorship Care Guideline. *Journal Of Clinical Oncology*, *34*(6), 611-635. https://doi.org/10.1200/jco.2015.64.3809

525) Ryan, G., & Bernard, H. (2003). Techniques to Identify Themes. *Field Methods*, *15*(1), 85-109. https://doi.org/10.1177/1525822x02239569

526) Saati, H. (2013). Saudi Arabian women’s experiences of breast cancer treatment. *Cancer Nursing Practice*, *12*(7), 34-39. https://doi.org/10.7748/cnp2013.09.12.7.34.e920

527) Sabiston, C., & Brunet, J. (2011). Reviewing the Benefits of Physical Activity During Cancer Survivorship. *American Journal Of Lifestyle Medicine*, *6*(2), 167-177. https://doi.org/10.1177/1559827611407023

528) Sabiston, C., Brunet, J., Vallance, J., & Meterissian, S. (2014). Prospective Examination of Objectively Assessed Physical Activity and Sedentary Time after Breast Cancer Treatment: Sitting on the Crest of the Teachable Moment. *Cancer Epidemiology Biomarkers & Prevention*, *23*(7), 1324-1330. https://doi.org/10.1158/1055-9965.epi-13-1179

529) Saca-Hazboun, H., & Glennon, C. (2011). Cultural Influences on Health Care in Palestine. *Clinical Journal Of Oncology Nursing*, *15*(3), 281-286. https://doi.org/10.1188/11.cjon.281-286

530) Saleh Al Mutair, A., Plummer, V., Paul O’Brien, A., & Clerehan, R. (2014). Providing culturally congruent care for Saudi patients and their families. *Contemporary Nurse*, *46*(2), 254-258. https://doi.org/10.5172/conu.2014.46.2.254

531) Sallis, J., Cervero, R., Ascher, W., Henderson, K., Kraft, M., & Kerr, J. (2006). AN ECOLOGICAL APPROACH TO CREATING ACTIVE LIVING COMMUNITIES. *Annual Review Of Public Health*, *27*(1), 297-322. https://doi.org/10.1146/annurev.publhealth.27.021405.102100

532) Salzman, P. (2007). Arab Culture and Postcolonial Theory. *Israel Affairs*, *13*(4), 837-843. https://doi.org/10.1080/13537120701445281

533) Sandelowski, M. (1995). Sample size in qualitative research. *Research In Nursing & Health*, *18*(2), 179-183. https://doi.org/10.1002/nur.4770180211

534) Sandelowski, M. (2000). Whatever happened to qualitative description?.*Research In Nursing & Health*, *23*(4), 334-340. https://doi.org/10.1002/1098-240x(200008)23:4<334::aid-nur9>3.0.co;2-g

535) Sandelowski, M. (2009). What's in a name? Qualitative description revisited. *Research In Nursing & Health*, n/a-n/a. https://doi.org/10.1002/nur.20362

536) Sandelowski, M., Voils, C., Leeman, J., & Crandell, J. (2011). Mapping the Mixed Methods–Mixed Research Synthesis Terrain. *Journal Of Mixed Methods Research*, *6*(4), 317-331. https://doi.org/10.1177/1558689811427913

537) Sander, A., Wilson, J., Izzo, N., Mountford, S., & Hayes, K. (2011). Factors That Affect Decisions About Physical Activity and Exercise in Survivors of Breast Cancer: A Qualitative Study. *Physical Therapy*, *92*(4), 525-536. https://doi.org/10.2522/ptj.20110115

538) Santa Mina, D., Sabiston, C., Au, D., Fong, A., Capozzi, L., & Langelier, D. et al. (2018). Connecting people with cancer to physical activity and exercise programs: a pathway to create accessibility and engagement. *Current Oncology*, *25*(2), 149. https://doi.org/10.3747/co.25.3977

539) Saran, A. (2014). *What is a systematic review?*. Campbellcollaboration.org. Retrieved 24 July 2020, from https://campbellcollaboration.org/what-is-a-systematic-review.html.

540) Sayeed, S., & Prakash, A. (2013). The Islamic prayer (Salah/Namaaz) and yoga togetherness in mental health. *Indian Journal Of Psychiatry*, *55*(6), 224. https://doi.org/10.4103/0019-5545.105537

541) Schmidt, M., Wiskemann, J., Ulrich, C., Schneeweiss, A., & Steindorf, K. (2017). Self-reported physical activity behavior of breast cancer survivors during and after adjuvant therapy: 12 months follow-up of two randomized exercise intervention trials. *Acta Oncologica*, *56*(4), 618-627. https://doi.org/10.1080/0284186x.2016.1275776

542) Schmitz, K. (2005). Controlled Physical Activity Trials in Cancer Survivors: A Systematic Review and Meta-analysis. *Cancer Epidemiology Biomarkers & Prevention*, *14*(7), 1588-1595. https://doi.org/10.1158/1055-9965.epi-04-0703

543) Schmitz, K., Ahmed, R., Troxel, A., Cheville, A., Lewis-Grant, L., & Smith, R. et al. (2010). Weight Lifting for Women at Risk for Breast Cancer–Related Lymphedema. *JAMA*, *304*(24), 2699. https://doi.org/10.1001/jama.2010.1837

544) Schmitz, K., Campbell, A., Stuiver, M., Pinto, B., Schwartz, A., & Morris, G. et al. (2019). Exercise is medicine in oncology: Engaging clinicians to help patients move through cancer. *CA: A Cancer Journal For Clinicians*. https://doi.org/10.3322/caac.21579

545) Schmitz, K., Courneya, K., Matthews, C., Demark-Wahnefried, W., GALVÃO, D., & Pinto, B. et al. (2010). American College of Sports Medicine Roundtable on Exercise Guidelines for Cancer Survivors. *Medicine & Science In Sports & Exercise*, *42*(7), 1409-1426. https://doi.org/10.1249/mss.0b013e3181e0c112

546) Schmitz, K., Speck, R., Rye, S., DiSipio, T., & Hayes, S. (2012). Prevalence of breast cancer treatment sequelae over 6 years of follow-up. *Cancer*, *118*(S8), 2217-2225. https://doi.org/10.1002/cncr.27474

547) Sebiany, A. (2013). Primary care physicians' knowledge and perceived barriers in the management of overweight and obesity. *Journal Of Family And Community Medicine*, *20*(3), 147. https://doi.org/10.4103/2230-8229.121972

548) Seir, R., & Kharroubi, A. (2017). Implementation of Palliative Care in Palestine: Cultural and Religious Perspectives. *Palliative Medicine And Hospice Care - Open Journal*, *SE*(1), S4-S9. https://doi.org/10.17140/pmhcoj-se-1-102

549) Shaheen, R. (2017). Barriers and Opportunities for Early Detection of Breast Cancer in Gaza. *Prehospital And Disaster Medicine*, *32*(S1), S191-S192. https://doi.org/10.1017/s1049023x17005040

550) Shaheen, R., Slanetz, P., Raza, S., & Rosen, M. (2011). Barriers and opportunities for early detection of breast cancer in Gaza women. *The Breast*, *20*, S30-S34. https://doi.org/10.1016/j.breast.2011.01.010

551) Shandley, L., Spencer, J., Fothergill, A., Mertens, A., Paplomata, E., & Howards, P. (2016). Impact of tamoxifen on fertility in breast cancer survivors. *Fertility And Sterility*, *106*(3), e130. https://doi.org/10.1016/j.fertnstert.2016.07.388

552) Shaw, R. (2010). Embedding Reflexivity Within Experiential Qualitative Psychology. *Qualitative Research In Psychology*, *7*(3), 233-243. https://doi.org/10.1080/14780880802699092

553)

554) Sheldon, K., & Elliot, A. (1999). Goal striving, need satisfaction, and longitudinal well-being: The self-concordance model. *Journal Of Personality And Social Psychology*, *76*(3), 482-497. doi: 10.1037/0022-3514.76.3.482

555)

556) Sheldon, K., & Houser-Marko, L. (2001). Self-concordance, goal attainment, and the pursuit of happiness: Can there be an upward spiral?.*Journal Of Personality And Social Psychology*, *80*(1), 152-165. https://doi.org/10.1037/0022-3514.80.1.152

557)

558) Shenton, A. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education For Information*, *22*(2), 63-75. https://doi.org/10.3233/efi-2004-22201

559) Shi, J., MacInnis, R., Boyle, T., Vallance, J., Winkler, E., & Lynch, B. (2017). Physical Activity and Sedentary Behavior in Breast and Colon Cancer Survivors Relative to Adults Without Cancer. *Mayo Clinic Proceedings*, *92*(3), 391-398. https://doi.org/10.1016/j.mayocp.2016.12.015

560) Shuval, K., Weissblueth, E., Amira, A., Brezis, M., Faridi, Z., Ali, A., & Katz, D. (2008). The role of culture, environment, and religion in the promotion of physical activity among Arab Israelis. *Prev Chronic Dis.*, *5*(3), A88. Retrieved 25 May 2020, from.

561) Silver, J., & Baima, J. (2013). Cancer Prehabilitation. *American Journal Of Physical Medicine & Rehabilitation*, *92*(8), 715-727. https://doi.org/10.1097/phm.0b013e31829b4afe

562) Silver, J., Baima, J., Newman, R., Galantino, M., & Shockney, L. (2013). Cancer rehabilitation may improve function in survivors and decrease the economic burden of cancer to individuals and society. *Work*, *46*(4), 455-472. https://doi.org/10.3233/wor-131755

563) Silverman, D. (2010). *Doing qualitative research* (3rd ed.). Sage.

564) Simou, E. (2015). Health information sources: trust and satisfaction. *International Journal Of Healthcare*, *2*(1). https://doi.org/10.5430/ijh.v2n1p38

565) Smith, L., Croker, H., Fisher, A., Williams, K., Wardle, J., & Beeken, R. (2017). Cancer survivors’ attitudes towards and knowledge of physical activity, sources of information, and barriers and facilitators of engagement: A qualitative study. *European Journal Of Cancer Care*, *26*(4), e12641. https://doi.org/10.1111/ecc.12641

566) Smith, T., & Hillner, B. (2010). Concrete Options and Ideas for Increasing Value in Oncology Care: The View from One Trench. *The Oncologist*, *15*(Supplement 1), 65-72. https://doi.org/10.1634/theoncologist.2010-s1-65

567) Smith-Turchyn, J., Richardson, J., Tozer, R., McNeely, M., & Thabane, L. (2016). Physical Activity and Breast Cancer: A Qualitative Study on the Barriers to and Facilitators of Exercise Promotion from the Perspective of Health Care Professionals. *Physiotherapy Canada*, *68*(4), 383-390. https://doi.org/10.3138/ptc.2015-84

568) Smoot, B., Wong, J., Cooper, B., Wanek, L., Topp, K., Byl, N., & Dodd, M. (2010). Upper extremity impairments in women with or without lymphedema following breast cancer treatment. *Journal Of Cancer Survivorship*, *4*(2), 167-178. https://doi.org/10.1007/s11764-010-0118-x

569) Sousa, C., Kemp, S., & El-Zuhairi, M. (2014). Dwelling within political violence: Palestinian women’s narratives of home, mental health, and resilience. *Health & Place*, *30*, 205-214. https://doi.org/10.1016/j.healthplace.2014.09.005

570) Sparano,, J., & Lee, M. (2019). *Breast Cancer Staging: TNM Classification for Breast Cancer*. Emedicine.medscape.com. Retrieved 1 October 2019, from https://emedicine.medscape.com/article/2007112-overview.

571) Speck, R., Gross, C., Hormes, J., Ahmed, R., Lytle, L., Hwang, W., & Schmitz, K. (2009). Changes in the Body Image and Relationship Scale following a one-year strength training trial for breast cancer survivors with or at risk for lymphedema. *Breast Cancer Research And Treatment*, *121*(2), 421-430. https://doi.org/10.1007/s10549-009-0550-7

572) Spector, D., Battaglini, C., & Groff, D. (2013). Perceived Exercise Barriers and Facilitators Among Ethnically Diverse Breast Cancer Survivors. *Oncology Nursing Forum*, *40*(5), 472-480. https://doi.org/10.1188/13.onf.472-480

573) Spence, J., & Lee, R. (2003). Toward a comprehensive model of physical activity. *Psychology Of Sport And Exercise*, *4*(1), 7-24. https://doi.org/10.1016/s1469-0292(02)00014-6

574) Speri, A. (2018). *How the Oslo Accords Betrayed the Palestinian Women Behind the First Intifada*. The Intercept. Retrieved 23 February 2020, from https://theintercept.com/2018/09/13/oslo-accords-palestinian-women-first-intifada-naila-and-the-uprising/.

575) Stefani, L., Galanti, G., & Klika, R. (2017). Clinical Implementation of Exercise Guidelines for Cancer Patients: Adaptation of ACSM's Guidelines to the Italian Model. *Journal Of Functional Morphology And Kinesiology*, *2*(1), 4. https://doi.org/10.3390/jfmk2010004

576) Stelmach, M. (2018). Physical activity assessment tools in monitoring physical activity: the Global Physical Activity Questionnaire (GPAQ), the International Physical Activity Questionnaire (IPAQ) or accelerometers – choosing the best tools. *Health Problems Of Civilization*, *12*(1), 57-63. https://doi.org/10.5114/hpc.2018.74189

577) Stevinson, C., Campbell, A., Cavill, N., & Foster, J. (2017). *Physical activity and cancer A concise evidence review*. Retrieved from https://www.macmillan.org.uk/_images/the-importance-physical-activity-for-people-living-with-and-beyond-cancer_tcm9-290123.pdf

578) Stout, N., Silver, J., Raj, V., Rowland, J., Gerber, L., & Cheville, A. et al. (2016). Toward a National Initiative in Cancer Rehabilitation: Recommendations from a Subject Matter Expert Group. *Archives of Physical Medicine and Rehabilitation*, *97*(11), 2006-2015. https://doi.org/10.1016/j.apmr.2016.05.002

579) Strath, S., Kaminsky, L., Ainsworth, B., Ekelund, U., Freedson, P., & Gary, R. et al. (2013). Guide to the Assessment of Physical Activity: Clinical and Research Applications. *Circulation*, *128*(20), 2259-2279. https://doi.org/10.1161/01.cir.0000435708.67487.da

580) Stubblefield, M., & Keole, N. (2013). Upper Body Pain and Functional Disorders in Patients With Breast Cancer. *PM&R*, *6*(2), 170-183. https://doi.org/10.1016/j.pmrj.2013.08.605

581) Stuiver, M., ten Tusscher, M., Agasi-Idenburg, C., Lucas, C., Aaronson, N., & Bossuyt, P. (2015). Conservative interventions for preventing clinically detectable upper-limb lymphoedema in patients who are at risk of developing lymphoedema after breast cancer therapy. *Cochrane Database Of Systematic Reviews*. https://doi.org/10.1002/14651858.cd009765.pub2

582) Suderman, K., Nishimura, K., Culos-Reed, N., Yurick, J., & McNeely, M. (2017). Cancer Survivor Preferences, Barriers, And Facilitators to Exercise After Participation in A Cancer-specific Community Exercise Program. *Medicine & Science In Sports & Exercise*, *49*(5S), 674. https://doi.org/10.1249/01.mss.0000518779.94012.c1

583) Suh, E. (2013). Cultural models of female breasts and breast cancer among Korean women. *Open Journal Of Nursing*, *03*(05), 404-413. https://doi.org/10.4236/ojn.2013.35055

584) Sultana, A. (2012). Patriarchy and Womens Subordination: A Theoretical Analysis. *Arts Faculty Journal*, 1-18. https://doi.org/10.3329/afj.v4i0.12929

585) Sun, H. (2011). On Cultural Differences and Translation Methods. *Journal Of Language Teaching And Research*, *2*(1). https://doi.org/10.4304/jltr.2.1.160-163

586) Sun, L., Ang, E., Ang, W., & Lopez, V. (2017). Losing the breast: A meta-synthesis of the impact in women breast cancer survivors. *Psycho-Oncology*, *27*(2), 376-385. https://doi.org/10.1002/pon.4460

587) Sunnah.com, n.d; Volume 7, Book 71, Number 58.

588) Sunnah.com, n.d; Volume 7, Book 70, Number 544.

589) Surbone, A. (2008). Cultural aspects of communication in cancer care. *Supportive Care In Cancer*, *16*(3), 235-240. https://doi.org/10.1007/s00520-007-0366-0

590) Surbone, A., Kagawa-Singer, M., Terret, C., & Baider, L. (2006). The illness trajectory of elderly cancer patients across cultures: SIOG position paper. *Annals of Oncology*, *18*(4), 633-638. https://doi.org/10.1093/annonc/mdl178

591) Sweileh, W., Zyoud, S., Al-Jabi, S., & Sawalha, A. (2015). Contribution of Arab countries to breast cancer research: comparison with non-Arab Middle Eastern countries. *BMC Women's Health*, *15*(1). https://doi.org/10.1186/s12905-015-0184-3

592) Swihart, D., & Martin, R. (2020). *Cultural Religious Competence In Clinical Practice*. Treasure Island (FL): StatPearls Publishing;.

593) Swisher, A., Davison, C., Aranda, R., Eye, D., & Erickson, M. (2010). Frequency and Severity of Self-Reported Upper Extremity Impairments, Activity Limitations, and Participation Restrictions Following Breast Cancer Treatment. *Rehabilitation Oncology*, *28*(1), 3-9. https://doi.org/10.1097/01893697-201028010-00001

594) Sygna, K., Johansen, S., & Ruland, C. (2015). Recruitment challenges in clinical research including cancer patients and caregivers. *Trials*, *16*(1). https://doi.org/10.1186/s13063-015-0948-y

595) Sylvia, L., Bernstein, E., Hubbard, J., Keating, L., & Anderson, E. (2014). Practical Guide to Measuring Physical Activity. *Journal Of The Academy Of Nutrition And Dietetics*, *114*(2), 199-208. https://doi.org/10.1016/j.jand.2013.09.018

596) Taha, H., Al-Qutob, R., Nyström, L., Wahlström, R., & Berggren, V. (2013). “Would a man smell a rose then throw it away?” Jordanian men’s perspectives on women's breast cancer and breast health. *BMC Women's Health*, *13*(1). https://doi.org/10.1186/1472-6874-13-41

597) Taha, H., Al-Qutob, R., Nyström, L., Wahlström, R., & Berggren, V. (2012). “Voices of Fear and Safety” Women’s ambivalence towards breast cancer and breast health: a qualitative study from Jordan. *BMC Women's Health*, *12*(1). https://doi.org/10.1186/1472-6874-12-21

598) Tawfik, G., Dila, K., Mohamed, M., Tam, D., Kien, N., Ahmed, A., & Huy, N. (2019). A step by step guide for conducting a systematic review and meta-analysis with simulation data. *Tropical Medicine and Health*, *47*(1). https://doi.org/10.1186/s41182-019-0165-6

599) Taylor, E., Dinger, M., & Oman, R. (2001). RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND SELF-REPORTED PHYSICAL FUNCTIONING IN OLDER ADULTS. *Medicine &Science In Sports & Exercise*, *33*(5), S124. https://doi.org/10.1097/00005768-200105001-00706

600) te Boveldt, N., Vernooij-Dassen, M., Leppink, I., Samwel, H., Vissers, K., & Engels, Y. (2014). Patient empowerment in cancer pain management: an integrative literature review. *Psycho-Oncology*, *23*(11), 1203-1211. https://doi.org/10.1002/pon.3573

601) Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioral Sciences*. SAGE.

602) The Israeli Information Center for Human Rights in the Occupied Territories. (2013). *Annual Report*.

603) *The Linguistic Approach to Translation | One Hour Translation*. Onehourtranslation.com. (2009). Retrieved 15 April 2020, from https://www.onehourtranslation.com/translation/blog/linguistic-approach-translation.

604) *The Typical Weather Anywhere on Earth - Weather Spark*. Weatherspark.com. (2020). Retrieved 4 July 2020, from https://weatherspark.com/countries/PS/WE.

605) The WHO Director-General. (2019). *Health conditions in the occupied Palestinian territory, including east Jerusalem, and in the occupied Syrian Gola*. Retrieved from http://apps.who.int/gb/ebwha/pdf_files/WHA72/A72_33-en.pdf

606) Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*, *8*(1). https://doi.org/10.1186/1471-2288-8-45

607) Thorne, S., Jensen, L., Kearney, M., Noblit, G., & Sandelowski, M. (2004). Qualitative Metasynthesis: Reflections on Methodological Orientation and Ideological Agenda. *Qualitative Health Research*, *14*(10), 1342-1365. https://doi.org/10.1177/1049732304269888

608) Thuné-Boyle, I., Stygall, J., Keshtgar, M., Davidson, T., & Newman, S. (2012). Religious/spiritual coping resources and their relationship with adjustment in patients newly diagnosed with breast cancer in the UK. *Psycho-Oncology*, *22*(3), 646-658. https://doi.org/10.1002/pon.3048

609) Tobin, G., & Begley, C. (2004). Methodological rigour within a qualitative framework. *Journal Of Advanced Nursing*, *48*(4), 388-396. https://doi.org/10.1111/j.1365-2648.2004.03207.x

610) Tonosaki, A., & Ishikawa, M. (2014). Physical activity intensity and health status perception of breast cancer patients undergoing adjuvant chemotherapy. *European Journal Of Oncology Nursing*, *18*(2), 132-139. https://doi.org/10.1016/j.ejon.2013.11.008

611) Torre, L., Islami, F., Siegel, R., Ward, E., & Jemal, A. (2017). Global Cancer in Women: Burden and Trends. *Cancer Epidemiology Biomarkers & Prevention*, *26*(4), 444-457. https://doi.org/10.1158/1055-9965.epi-16-0858

612) Troeschel, A., Leach, C., Shuval, K., Stein, K., & Patel, A. (2018). Physical Activity in Cancer Survivors During "Re-Entry" Following Cancer Treatment. *Preventing Chronic Disease*, *15*. https://doi.org/10.5888/pcd15.170277

613) Tsai, J., Choe, J., Lim, J., Acorda, E., Chan, N., Taylor, V., & Tu, S. (2004). Developing Culturally Competent Health Knowledge: Issues of Data Analysis of Cross-Cultural, Cross-Language Qualitative Research. *International Journal Of Qualitative Methods*, *3*(4), 16-27. https://doi.org/10.1177/160940690400300402

614) Tucktuck, M., Darkhawaja, R., Areqat, T., Mansour, S., Giacaman, R., & Hamdan, M. (2017). The role of non-governmental organizations in the health sector in the occupied Palestinian territory: a cross-sectional qualitative study. *The Lancet*, *390*, S29. https://doi.org/10.1016/s0140-6736(17)32080-9

615) *U.S. report does not refer to Golan, West Bank, Gaza as occupied territories*. The Jerusalem Post | JPost.com. (2018). Retrieved 22 February 2020, from https://www.jpost.com/Israel-News/US-report-does-not-refer-to-Golan-West-Bank-Gaza-as-occupied-territories-583328.

616) UNDP. (2019). *Inequalities in Human Development in the 21st Century Briefing note for countries on the 2019 Human Development Report*. Retrieved from http://hdr.undp.org

617) *Understanding Masculinities: Results from the International Men and Gender Equality Survey (IMAGES) – Palestine*. UN Women | Palestine. (2017). Retrieved 22 February 2020, from https://palestine.unwomen.org/en/digital-library/publications/2018/02/images-palestine-report.

618) United Nations Country Team occupied Palestinian territory. (2016). *Leave No One Behind: A Perspective on Vulnerability and Structural Disadvantage in Palestine*.

619) UNRWA. (2020). *occupied Palestinian territory emergency appeal 2020*. Amman: UNRWA. Retrieved from http://www.unrwa.org

620) Ussher, J., Perz, J., & Gilbert, E. (2012). Changes to Sexual Well-Being and Intimacy After Breast Cancer. *Cancer Nursing*, *35*(6), 456-465. https://doi.org/10.1097/ncc.0b013e3182395401

621) Vaismoradi, M., Jones, J., Turunen, H., & Snelgrove, S. (2016). Theme development in qualitative content analysis and thematic analysis. *Journal Of Nursing Education And Practice*, *6*(5). https://doi.org/10.5430/jnep.v6n5p100

622) Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing & Health Sciences*, *15*(3), 398-405. https://doi.org/10.1111/nhs.12048

623) Vallance, J., Lavallee, C., Culos-Reed, N., & Trudeau, M. (2012). Rural and Small Town Breast Cancer Survivors' Preferences for Physical Activity. *International Journal Of Behavioral Medicine*, *20*(4), 522-528. https://doi.org/10.1007/s12529-012-9264-z

624) van Nes, F., Abma, T., Jonsson, H., & Deeg, D. (2010). Language differences in qualitative research: is meaning lost in translation. *European Journal Of Ageing*, *7*(4), 313-316. https://doi.org/10.1007/s10433-010-0168-y

625) van Poppel, M., Chinapaw, M., Mokkink, L., van Mechelen, W., & Terwee, C. (2010). Physical activity questionnaires for adults: A systematic review of measurement properties. *Sports Medicine*, *40*(7), 565-600. https://doi.org/10.2165/11531930-000000000-00000

626) Vanhees, L., Lefevre, J., Philippaerts, R., Martens, M., Huygens, W., Troosters, T., & Beunen, G. (2005). How to assess physical activity? How to assess physical fitness?.*European Journal Of Cardiovascular Prevention & Rehabilitation*, *12*(2), 102-114. https://doi.org/10.1097/01.hjr.0000161551.73095.9c

627) Vasileiou, K., Barnett, J., Thorpe, S., & Young, T. (2018). Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period. *BMC Medical Research Methodology*, *18*(1). https://doi.org/10.1186/s12874-018-0594-7

628) Vassbakk-Brovold, K., Kersten, C., Fegran, L., Mjåland, O., Mjåland, S., Seiler, S., & Berntsen, S. (2016). Cancer patients participating in a lifestyle intervention during chemotherapy greatly over-report their physical activity level: a validation study. *BMC Sports Science, Medicine And Rehabilitation*, *8*(1). https://doi.org/10.1186/s13102-016-0035-z

629) Villarreal-Garza, C., Platas, A., Martinez-Cannon, B., Bargalló-Rocha, E., Aguilar-González, C., & Ortega-Leonard, V. et al. (2016). Information Needs and Internet Use of Breast Cancer Survivors in Mexico. *The Breast Journal*, *23*(3), 373-375. https://doi.org/10.1111/tbj.12747

630) Virgo, K., Lerro, C., Klabunde, C., Earle, C., & Ganz, P. (2011). Barriers in providing breast and colorectal cancer survivorship care: Perceptions of U.S. primary care physicians (PCPs) and medical oncologists (MOs). *Journal Of Clinical Oncology*, *29*(15_suppl), CRA9006-CRA9006. https://doi.org/10.1200/jco.2011.29.15_suppl.cra9006

631) Visser, A., Garssen, B., & Vingerhoets, A. (2009). Spirituality and well-being in cancer patients: a review. *Psycho-Oncology*, *19*(6), 565-572. https://doi.org/10.1002/pon.1626

632) Vogel, D., Bitman, R., Hammer, J., & Wade, N. (2013). Is stigma internalized? The longitudinal impact of public stigma on self-stigma. *Journal of Counseling Psychology*, *60*(2), 311-316. https://doi.org/10.1037/a0031889

633) Vogel, D., Wade, N., & Hackler, A. (2007). Perceived public stigma and the willingness to seek counseling: The mediating roles of self-stigma and attitudes toward counseling. *Journal Of Counseling Psychology*, *54*(1), 40-50. https://doi.org/10.1037/0022-0167.54.1.40

634) Wahyuni, D. (2012). The Research Design Maze: Understanding Paradigms, Cases, Methods and Methodologies. *JAMAR*, *10*(1). Retrieved 7 February 2020, from.

635) Waks, A., & Winer, E. (2019). Breast Cancer Treatment: A Review. *JAMA*, *321*(3), 288-300. https://doi.org/10.1001/jama.2018.19323.

636) Waltke, L. (2014). An Overview of Cancer Rehabilitation and Exercise in the Literature: Promoting Increased Referrals to Improve Oncology Outcomes. *Journal Of Patient-Centered Research And Reviews*, *1*(3), 137-141. https://doi.org/10.17294/2330-0698.1028

637) Wang, K., Yee, C., Tam, S., Drost, L., Chan, S., & Zaki, P. et al. (2018). Prevalence of pain in patients with breast cancer post-treatment: A systematic review. *The Breast*, *42*, 113-127. https://doi.org/10.1016/j.breast.2018.08.105

638) Wang, L., Guyatt, G., Kennedy, S., Romerosa, B., Kwon, H., & Kaushal, A. et al. (2016). Predictors of persistent pain after breast cancer surgery: a systematic review and meta-analysis of observational studies. *Canadian Medical Association Journal*, *188*(14), E352-E361. https://doi.org/10.1503/cmaj.151276

639) Warsini, S., Mills, J., & Usher, K. (2014). Solastalgia: Living with the Environmental Damage Caused By Natural Disasters. *Prehospital and Disaster Medicine*, *29*(1), 87-90. https://doi.org/10.1017/s1049023x13009266

640) Wasfy, M., & Baggish, A. (2016). Exercise Dose in Clinical Practice. *Circulation*, *133*(23), 2297-2313. https://doi.org/10.1161/circulationaha.116.018093

641) Webb, J., Foster, J., & Poulter, E. (2016). Increasing the frequency of physical activity very brief advice for cancer patients. Development of an intervention using the behaviour change wheel. *Public Health*, *133*, 45-56. https://doi.org/10.1016/j.puhe.2015.12.009

642) Wehbe-Alamah, H. (2008). Bridging generic and professional care practices for Muslim patients through use of Leininger’s Culture Care Modes. *Contemporary Nurse*, *28*(1-2), 83-97. https://doi.org/10.5172/conu.673.28.1-2.83

643) Welch, W. (2017). Measurement of physical activity and sedentary behavior in breast cancer survivors. *The Journal of Community and Supportive Oncology*, *15*(6). https://doi.org/10.12788/jcso.0387

644) Whitehead, L. (2009). The Measurement of Fatigue in Chronic Illness: A Systematic Review of Unidimensional and Multidimensional Fatigue Measures. *Journal of Pain and Symptom Management*, *37*(1), 107-128. https://doi.org/10.1016/j.jpainsymman.2007.08.019

645) Whitehead, L., Unahi, K., Burrell, B., & Crowe, M. (2016). The Experience of Fatigue Across Long-Term Conditions: A Qualitative Meta-Synthesis. *Journal Of Pain And Symptom Management*, *52*(1), 131-143.e1. https://doi.org/10.1016/j.jpainsymman.2016.02.013

646) Whitehead, S., & Lavelle, K. (2009). Older Breast Cancer Survivors' Views and Preferences for Physical Activity. *Qualitative Health Research*, *19*(7), 894-906. https://doi.org/10.1177/1049732309337523

647) *WHO | Global recommendations on physical activity for health*. Who.int. (2019). Retrieved 15 October 2019, from https://www.who.int/dietphysicalactivity/factsheet_recommendations/en/.

648) *WHO | What is Moderate-intensity and Vigorous-intensity Physical Activity?* Who.int. (2019). Retrieved 23 October 2019, from https://www.who.int/dietphysicalactivity/physical_activity_intensity/en/.

649) Wilkinson, S., & Kitzinger, C. (1994). *Women and Health: Feminist Perspectives (Gender & Society)* (1st ed., p. 124). Routledge.

650) Williams, K., Beeken, R., Fisher, A., & Wardle, J. (2015). Health professionals' provision of lifestyle advice in the oncology context in the United Kingdom. *European Journal of Cancer Care*, *24*(4), 522-530. https://doi.org/10.1111/ecc.12305

651) Wong, G., Greenhalgh, T., Westhorp, G., Buckingham, J., & Pawson, R. (2013). RAMESES publication standards: meta-narrative reviews. *BMC Medicine*, *11*(1). https://doi.org/10.1186/1741-7015-11-20

652) Wong, J., McAuley, E., & Trinh, L. (2018). Physical activity programming and counseling preferences among cancer survivors: a systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, *15*(1). https://doi.org/10.1186/s12966-018-0680-6

653) World Bank group. (2018). *Enhancing job opportunities for skilled women in the Palestinian territories*.

654) *World Arabic Language Day 2016*. UNESCO. (2016). Retrieved 2 July 2020, from https://en.unesco.org/node/267866.

655) World Cancer Research Fund/American Institute for Cancer Research. (2018). *Diet, nutrition, Physical activity and breast cancer.*

656) World Medical Association (WMA). (2009). Declaration of Helsinki. Ethical Principles for Medical Research Involving Human Subjects. *Jahrbuch Für Wissenschaft Und Ethik*, *14*(1). https://doi.org/10.1515/9783110208856.233

657) Wurz, A., St-Aubin, A., & Brunet, J. (2015). Breast cancer survivors' barriers and motives for participating in a group-based physical activity program offered in the community. *Supportive Care In Cancer*, *23*(8), 2407-2416. https://doi.org/10.1007/s00520-014-2596-2

658) Yan, A., Stevens, P., Holt, C., Walker, A., Ng, A., & McManus, P. et al. (2019). Culture, identity, strength and spirituality: A qualitative study to understand experiences of African American women breast cancer survivors and recommendations for intervention development. *European Journal Of Cancer Care*, *28*(3), e13013. https://doi.org/10.1111/ecc.13013

659) Yesilada, E. (2011). Contribution of traditional medicine in the healthcare system of the Middle East. *Chinese Journal Of Integrative Medicine*, *17*(2), 95-98. https://doi.org/10.1007/s11655-011-0651-0

660) Yin, R. (2009). *Case study research: Design And Methods.* (4th Ed.). CA: Sage.

661) Yona, T., Ben Ami, N., Azmon, M., Weisman, A., & Keshet, N. (2019). Physiotherapists lack knowledge of the WHO physical activity guidelines. A local or a global problem?.*Musculoskeletal Science And Practice*, *43*, 70-75. https://doi.org/10.1016/j.msksp.2019.07.007

662) Yoo, G., Sudhakar, A., Le, M., & Levine, E. (2015). Exploring Coping Strategies Among Young Asian American Women Breast Cancer Survivors. *Journal Of Cancer Education*, *32*(1), 43-50. https://doi.org/10.1007/s13187-015-0917-x

663) Zeighami Mohammadi, S., Mohammad Khan Kermanshahi, S., & Vanaki, Z. (2018). Reconstruction of feminine identity: the strategies of women with breast cancer to cope with

body image altered. *International Journal Of Women's Health*, *Volume 10*, 689-697. https://doi.org/10.2147/ijwh.s181557

664) *1995 Oslo Interim Agreement - Israeli-Palestinian - ProCon.org*. Israeli-Palestinian. (2008). Retrieved 2 July 2020, from https://israelipalestinian.procon.org/background-resources/1995-oslo-interim-agreement/.

665) *Area C*. United Nations Office for the Coordination of Humanitarian Affairs - occupied Palestinian territory. (2019). Retrieved 27 October 2019, from https://www.ochaopt.org/location/area-c.

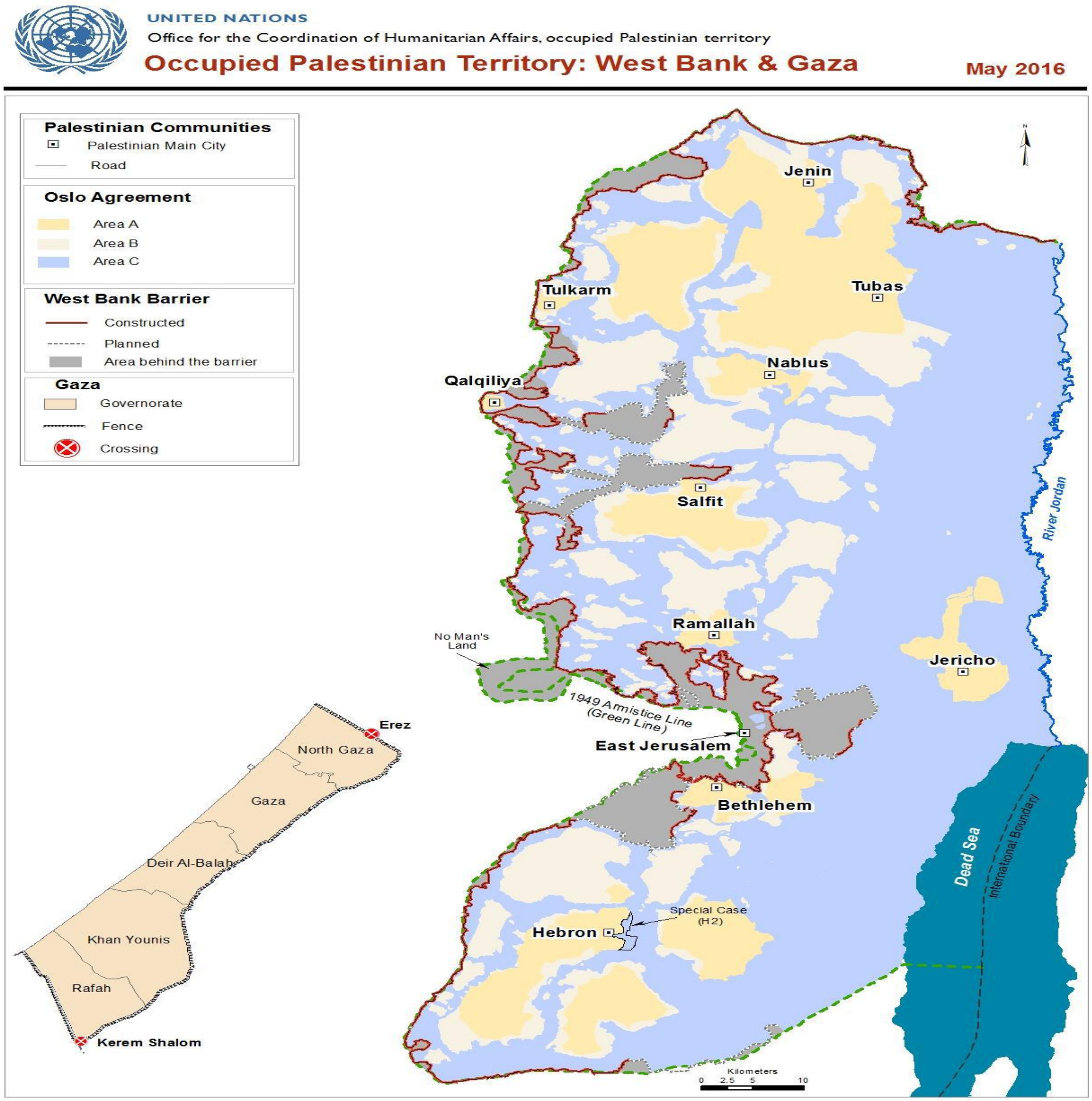
666) *2018 Physical Activity Guidelines Advisory Committee Scientific Report*. (2018).

667) (2019). Retrieved 9 October 2019, from https://www.researchgate.net/publication/249238698_The_Status_of_the_Palestinian_Refugees_in_the_Near_East_The_Right_of_Return_and_UNRWA_in_Perspective.

List of Appendices

Appendix 1- A: The geopolitical situation in oPt. - A brief history

The Israeli-Palestinian conflict, one of the longest ongoing conflicts in the contemporary world, dates back to the end of the nineteenth century, primarily as a conflict over territory. After the 1948 Arab-Israeli war, the Holy Land was divided into three parts: the State of Israel, the West Bank (of the Jordan River), and the Gaza Strip (Global Conflict Tracker, 2020). Then, one of the major consequences of the June 1967 war was the division of the occupied Palestinian territories into three areas: the West Bank, East Jerusalem and the Gaza Strip. Yet once the wars over territory were over, a surge of uprisings among the Palestinians began. The first Intifada, in 1987, was an uprising comprising hundreds of thousands of Palestinians living in the West Bank and Gaza Strip (Global Conflict Tracker, 2020). The 1993 Oslo Accords mediated the conflict, setting up a framework for the Palestinians to govern themselves and establishing relations between the newly established Palestinian Authority and Israel’s government (Global Conflict Tracker, 2020). The Oslo agreements, specifically Oslo II signed at Taba in 1995, added a new geopolitical element to the existing divisions as the Accords divided the West Bank into three areas, each with different administrative and security regulations: Area A, representing 18% of the territory, which comprises the main cities and is under Palestinian Authority administration in regard to public order and internal security. Area B includes several hundred villages and towns, where public order is overseen by the Palestinian Authority while the occupying Israeli forces are in charge of security matters (understood as any threat to the security of Israeli citizens). Area C represents 60% of the West Bank and is controlled by Israel in regard to all civil matters and security. Within Area C, Palestinians have limited access to water, electricity, education and other state services (United Nations Office for the Coordination of Humanitarian Affairs - occupied Palestinian territory, 2019). Furthermore, due to the non-contiguous geographical nature of areas A, B and C, Area C physically disconnects the territory under Palestinian Authority jurisdiction (ibid.). Through this arrangement, which remains in place despite the temporary nature of the agreements, Israel continues to exercise full control - security, civilian, and planning - over most of the West Bank.



Fiqure 1.6: Map of the occupied Palestinian territory

In 2000, inspired by continuing Palestinian grievances, the second Intifada (Al-Aqsa) began and was much bloodier than the first (1987). After the Al-Aqsa Intifada in 2000, which saw a total closure of the West Bank for several months in 2002, freedom of movement for Palestinians was constantly reduced up till now (Global Conflict Tracker, 2020).

Appendix 2-B: Reflection on courses and conferences

In the early stages of my study in the UK, I attended a five-day course on The Theory and Practice of Cancer Rehabilitation in August 2016 in Bristol, UK. I gained knowledge of many different aspects of cancer, including the treatment and life aspects of cancer patients. Also, I got the chance to know how the health system (NHS) deals with cancer patients in the UK, which is different from my country. Moreover, we had the chance to do a group presentation according to various case study scenarios we were given and then we did a role play as a practical assessment, as well as planning an exercise session and demonstrating it in the gymnasium. As a follow-up, I had to write up a full 12-week detailed exercise programme for a breast cancer survivor, which was a requirement to pass the course. I found it was a beneficial course and experience on a personal level, as there were opportunities all the time to discuss and share thoughts and knowledge of how I was practising with cancer patients in my workplace back home and how professionals are working here in the UK. Because of this, I became more confident when dealing with cancer survivors.

I also attended a study day about Cancer and Exercise in December 2016 at the Royal Marsden Hospital in London. This study day was about the importance of PA to cancer patients and survivors, and how to integrate and promote PA to cancer patients. Getting the chance to attend this day added useful skills as well as knowledge for me, as it explored practical ways that HCPs could implement PA by weaving it into daily practice, e.g. during home visits and working with cancer patients in the community, etc. Moreover, I found that it was a beneficial day on a personal level, as the discussion between professionals, including UK physiotherapists, was a way to share thoughts and experience as well as open up new ideas to implement in future research.

Additionally, I attended two day courses on Embracing the Unknown: The Practicalities of Field Research Abroad and Communication across Cultures in March and April 2017. I learnt about different challenges the researcher might face, including the safety of the researcher and the participants, managing the fieldwork, and how to cope with these issues, This was helpful as we brainstormed what to expect from fieldwork data collection.

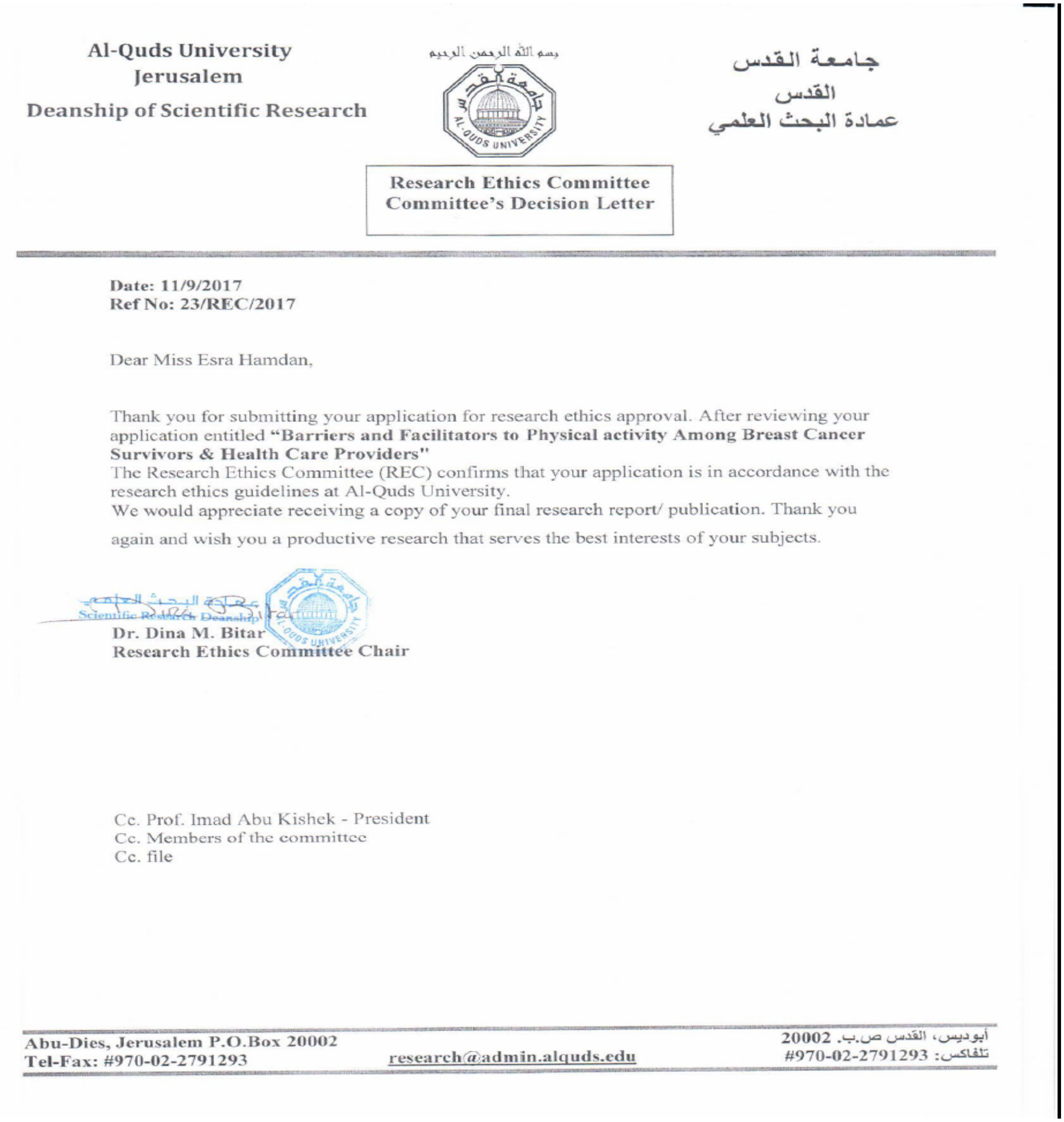
I also attended advanced research training in Qualitative Interviewing (2 days) and Qualitative Analysis and Interpretation (2 days) in May 2017. I learnt new and different methods of qualitative approaches to research. I had the opportunity to get to know how to develop appropriate interview questions to facilitate the researcher’s job in addressing the aims of the study and then how to choose the appropriate qualitative data analysis methods.

Furthermore, I had the opportunity to attend two workshops, organised by the Royal Society of Medicine in London. The first workshop presented the issues of building collaboration in global cancer care: From fragile conflict systems to emerging economies. I learnt that during wartime, cancer care isn’t the first thing on most people’s minds. I knew that conflicts in the Middle East have all but destroyed some functioning national systems of cancer care and also that interventions and policies around cancer have not kept up with the profound global changes in conflict settings in the last decade. I am aware that there is much need for collaboration, and it will be quite challenging and an adventure to do this. The second workshop, about cancer control in low- and middle-income countries, presented new solutions to evolving challenges. I found it useful to share experiences regarding cancer in the Palestinian territories.

During my fieldwork visit to Palestine, I attended the first Palestinian Conference on Cancer at Hebron City in the West Bank, where I had the opportunity to learn about the current situation regarding cancer institutions in the Palestinian territories. During the conference, I made some specific HCP contacts as potential participants for my study.

Just after I finished my fieldwork data collection, I attended a “Breast cancer survivorship care” during the 1st International Conference on Physical Therapy and Oncology, held in Amsterdam, Netherlands, in June 2018. I learnt that women need a holistic and multidisciplinary team to take care of them, but that this care differs between countries due to factors, such as the referral system schemes. Finally, I had the opportunity to visit a breast cancer care unit at Geneva University Teaching Hospital during the WCPT (World Confederation for Physical Therapy) Congress in May 2019 in Geneva, Switzerland.

Appendix 2-C Ethical approval from Al-Quds University / Jerusalem /oPt



Al-Quds University
Jerusalem
Deanship of Scientific Research

بسم الله الرحمن الرحيم

جامعة القدس
القدس
عمادة البحث العلمي

Research Ethics Committee
Committee's Decision Letter

Date: 11/9/2017
Ref No: 23/REC/2017

Dear Miss Esra Hamdan,

Thank you for submitting your application for research ethics approval. After reviewing your application entitled **"Barriers and Facilitators to Physical activity Among Breast Cancer Survivors & Health Care Providers"**
The Research Ethics Committee (REC) confirms that your application is in accordance with the research ethics guidelines at Al-Quds University.
We would appreciate receiving a copy of your final research report/ publication. Thank you again and wish you a productive research that serves the best interests of your subjects.

عمادة البحث العلمي
Scientific Research Deanship

Dr. Dina M. Bitar
Research Ethics Committee Chair

Cc. Prof. Imad Abu Kishek - President
Cc. Members of the committee
Cc. file

Appendix 2-D: Ethical approval from Palestinian Ministry of Health

State of Palestine
Ministry of Health - Nablus
General Directorate of Education in Health

دولة فلسطين
وزارة الصحة– نابلس
الإدارة العامة للتعليم الصحي

Ref.: ....
Date:..................

الرقـــم: عتع/١٦٣٠/٢٠١٧
التــاريخ: ٤/١١/٢٠١٧

الأخ مدير عام الادارة العامة للمستشفيات المحترم،،،
الأخ مدير مجمع فلسطين الطبي المحترم،،،

تحية واحترام...

<u>الموضوع: تسهيل مهمة باحثة</u>

يرجى تسهيل مهمة الباحثة: **اسراء حمدان– طالبة دكتوراه في جامعة ايست انجليا/ انجلترا – محاضرة في جامعة القدس، في اجراء دراسة بعنوان:" Barriers and Facilitators of Physical Activity among Breast Cancer Survivors in Palestinian Territories**" وذلك من خلال السماح لها بتوزيع استبانه على اخصائيي الأورام والعاملين في المجال الصحي الذين يتعاملون مع مرضى السرطان (بعد اخذ موافقتهم)، بالاضافة الى توزيع استبانة على الناجيات من مرض السرطان بعد الاطلاع على معلومات ارشيفهم للوصول لهم والطلب منهم المشاركة في الدراسة، **وذلك في جميع المستشفيات الحكومية الضفة الغربية ومجمع فلسطين الطبي.**

حيث ان الفترة الزمنية للبحث ستمتد لمدة سنة من تاريخه، علما بأنه سيتم الالتزام بمعايير البحث العلمي والحفاظ على سرية المعلومات.

- مع ضرورة تزويدنا بنسخة من نتائج البحث.

مع الاحترام...

د. أمل ابو عوض
مدير عام التعليم الصحي

نسخة: عميد كلية المهن الصحية المحترم/ جامعة القدس

P.O .Box: 14
TelFax: 09-2333901

ص.ب. 14
تلفاكس: 09-2333901

Appendix 2-E: Ethical approval from Augusta Victoria Hospital Ethics Committee

لجنة الأخلاق الطبية
Medical Ethics & IRB Committee
كتاب طلب عمل دراسة بحثية

أنا الطالب/ة. إسراء محمد حمدان من جامعة القدس/ إيست أنجليا أتقدّم بالطلب للحصول على معلومات تتعلق بدراستي البحثية والتي هي بعنوان: Barriers & Facilitators to Physical Activity Among Breast Cancer Survivors in Palestine (النشاط البدني وسرطان الثدي)

الهدف منها هو: جمع معلومات كجزء من رسالة الدكتوراة في جامعة إيست أنجليا / إنكلترا (University of East Anglia.

وعليه وبعد الموافقة الرسمية من قبلكم ، أقرّ بالإلتزام بمثاق الأخلاق البحثي والمحافظة على حقوق المريض الإنسانية كافة وعدم إلحاق الاذى أو / الضرر بالمريض بطريقة مباشرة أو غير مباشرة، وأتعهد بأن تكون كافة المعلومات التي يُتاح لي الوصول إليها خلال فترة جمع المعلومات المتعلقة بالدراسة المذكورة أعلاه فقط، ومن خلال فترة تعاملي مع مرضى مستشفى المُطّلع و/ أو وثائق لها علاقة بالمرضى و/ أو الملفات الخاصة بالمستشفى و/ أو ممتلكاته ، سأبقي المحافظة عليها بكامل السرية ولن يتم استخدامها بشكل مُطلق وقطعي بغير هدف الدراسة المُحددة أعلاه فقط، ولن أعطي هذه المعلومات لأي جهة أو/ و شخص كان وتحت أي ظرف كان.

إن أي معلومة أو وثيقة و/ أو نتيجة مقابلة لمريض و/ أو لأي من ذويه تكون بموافقة لجنة الأخلاق الطبية الخاصة بالمستشفى أولاً، ثم بموافقة المريض /ة الذي يستطيع أخذ قرار وقادراً على ذلك دون إكراه أو إجبار وبشكل طوعي وإرادي، وله الحق بالإستسفسار والسؤال عن سبب ومصير المعلومات ، وله الحق بالإنسحاب و/ أو التوقف عن المشاركة في أي وقت كان، دون إكراه أو إجبار أو أي مساس في حقوقه، وينطبق ذلك على ولي أمر المريض الشرعي و/ أو القانوني في أخذ القرار.

إسراء Esra'
توقيع الطالب / ة

2017/ 9/ 24
التاريخ

توصية لجنة الأخلاق الطبية: لا مانع

القرار (رئيس اللجنة) .... د. ممدوح العكر Dr. Mamdouh Aker

التاريخ: 2017/ 10/ 18

- الرجاء إرفاق الوثائق التالية:
  - نموذج موافقة المريض (Informed Consent) مرفق مع الملحقات لمشروع البحث.
  - نموذج مشروع البحث كاملاً (Proposal of the Study) ✓
  - CV (محاضر في دائرة العلاج الطبيعي/جامعة القدس) + (طالبة دكتوراة في جامعة إيست أنجليا).

Form #: GLD/07-2	Issue No.: 1/0	Issue Date: 11.05.2016

Appendix 2-F: Ethical approval from Dunya Women’s Cancer Clinic

دنيا
المركز التخصصي
لأورام النساء
Dunya
Women's
Cancer Clinic

التاريخ : 2017/10/20

حضرة الاستاذة اسراء حمدان المحترمة

تحية طيبة وبعد ..

الموضوع : الموافقة على تسهيل اجراء دراسة بحثية

(Barriers & Facilitators of Physical Activity among Breast Cancer Survivors in Palestinian Territories)

يسرنا اعلامكم بالموافقة على طلبكم المقدم باجراء دراسة بحثية كمتطلب لنيل درجة الدكتوراة في مركزنا / دنيا المركز التخصصي لأورام النساء ، حيث سيكون البحث بعنوان : (المعيقات والتسهيلات المرتبطة بممارسة النشاط البدني بين المتعافيات من سرطان الثدي في الضفة الغربية) .

وسيكون ذلك من خلال تسهيل التعرف على المتعافيات من سرطان الثدي من خلال ارشيف المركز و السماح بتوزيع استبانة على المتعافيات من سرطان الثدي (بعد اخذ موافقتهم) بغرض استكشاف مستوى النشاط البدني لهن كمرحلة أولى ثم استكشاف لماذا تقوم المتعافيات من سرطان الثدي بممارسة النشاط البدني او عدم ممارسته في الضفة الغربية من وجهة نظرهن كنساء ناجيات من مرض السرطان كمرحلة ثانية من خلال المشاركة في مقابلة شخصية فردية .

و كذلك سنقوم بتسهيل مهمة اجراء البحث في العيادة او في عيادات لجان العمل الصحي في الضفة الغربية حسب رغبة المتعافيات .

وحيث ان البحث سوف يستكشف أيضا وجهات نظر الأطباء وأطباء الأورام والعاملين في المجال الصحي في المستشفيات و لجان العمل الصحي و مراكز التاهيل فيما يتعلق باهمية ممارسة النشاط البدني للمتعافيات من سرطان الثدي وما هي المعيقات والتسهيلات لمشاركتهن من وجهة نظرهم كمهنيين، سنقوم بالسماح بتوزيع استمارة لمعرفة بعض المعلومات المتعلقة بعمل الصحي وخبرة هؤلاء المهنيين العاملين في مجال السرطان كمرحلة اولى ثم اجراء مقابلة مع الأطباء والمهنيين في حال وافقوا على عمل المقابلة معهم في الوقت الذي يرونه مناسبا.

راجيين من حضرتكم الالتزام بأخلاق و معايير البحث العلمي والحفاظ على سرية المعلومات .

مع ضرورة تزويدنا بنسخة من نتائج البحث، والتأكيد على كتابة اسم المؤسسة كمشاركة في البحث: لجان العمل الصحي/ مركز دنيا التخصصي لأورام النساء.

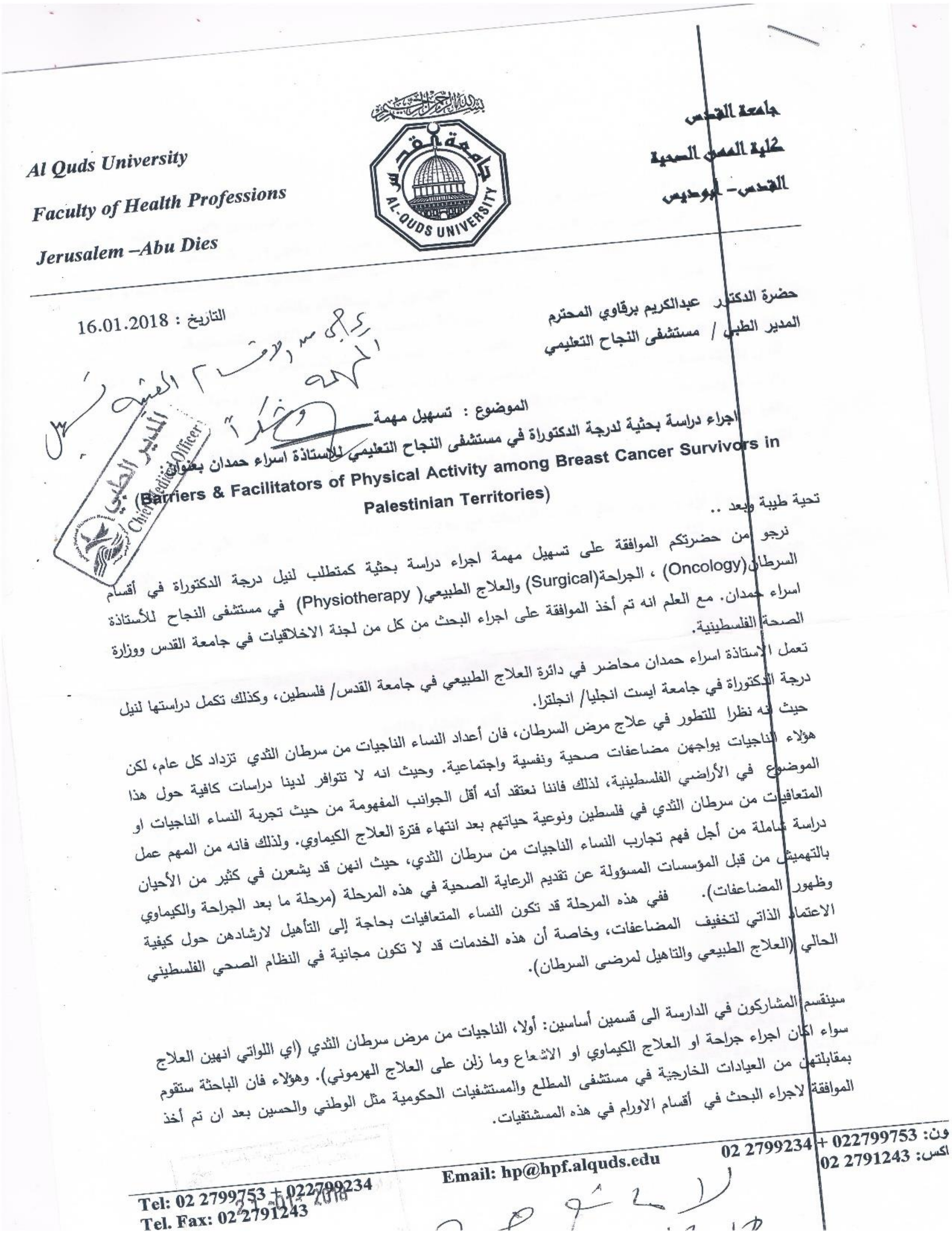
مع الاحترام

د. نفوذ مسلماني

المدير الطبي والاداري

عمارة الحرجة، فوق البنك العربي،
الطابق الثاني رام الله التحتا، رام الله
Fax: +972 2 2987996
Al-Haraj Building, above the
Arab Bank, 2nd floor Ramallah
Tel: +972 2 2987995

Appendix2-G: Ethical approval from Al-Najah University Teaching Hospital



Al Quds University
Faculty of Health Professions
Jerusalem –Abu Dies

جامعة القدس
كلية المهن الصحية
القدس- أبوديس

التاريخ : 16.01.2018

حضرة الدكتور عبدالكريم برقاوي المحترم
المدير الطبي / مستشفى النجاح التعليمي

[illegible] وشكراً

المدير الطبي
Chief Medical Officer

الموضوع : تسهيل مهمة اجراء دراسة بحثية لدرجة الدكتوراة في مستشفى النجاح التعليمي للاستاذة اسراء حمدان بعنوان **(Barriers & Facilitators of Physical Activity among Breast Cancer Survivors in Palestinian Territories)**

تحية طيبة وبعد ..

نرجو من حضرتكم الموافقة على تسهيل مهمة اجراء دراسة بحثية كمتطلب لنيل درجة الدكتوراة في أقسام السرطان(Oncology) ، الجراحة(Surgical) والعلاج الطبيعي(Physiotherapy) في مستشفى النجاح للأستاذة اسراء حمدان. مع العلم انه تم أخذ الموافقة على اجراء البحث من كل من لجنة الاخلاقيات في جامعة القدس ووزارة الصحة الفلسطينية.

تعمل الاستاذة اسراء حمدان محاضر في دائرة العلاج الطبيعي في جامعة القدس/ فلسطين، وكذلك تكمل دراستها لنيل درجة الدكتوراة في جامعة ايست انجليا/ انجلترا.

حيث انه نظرا للتطور في علاج مرض السرطان، فان أعداد النساء الناجيات من سرطان الثدي تزداد كل عام، لكن هؤلاء الناجيات يواجهن مضاعفات صحية ونفسية واجتماعية. وحيث انه لا تتوافر لدينا دراسات كافية حول هذا الموضوع في الأراضي الفلسطينية، لذلك فاننا نعتقد أنه أقل الجوانب المفهومة من حيث تجربة النساء الناجيات او المتعافيات من سرطان الثدي في فلسطين ونوعية حياتهم بعد انتهاء فترة العلاج الكيماوي. ولذلك فانه من المهم عمل دراسة شاملة من أجل فهم تجارب النساء الناجيات من سرطان الثدي، حيث انهن قد يشعرن في كثير من الأحيان بالتهميش من قبل المؤسسات المسؤولة عن تقديم الرعاية الصحية في هذه المرحلة (مرحلة ما بعد الجراحة والكيماوي وظهور المضاعفات). ففي هذه المرحلة قد تكون النساء المتعافيات بحاجة إلى التأهيل لارشادهن حول كيفية الاعتماد الذاتي لتخفيف المضاعفات، وخاصة أن هذه الخدمات قد لا تكون مجانية في النظام الصحي الفلسطيني الحالي (العلاج الطبيعي والتاهيل لمرضى السرطان).

سينقسم المشاركون في الدارسة الى قسمين أساسين: أولا، الناجيات من مرض سرطان الثدي (اي اللواتي انهين العلاج سواء اكان اجراء جراحة او العلاج الكيماوي او الاشعاع وما زلن على العلاج الهرموني). وهؤلاء فان الباحثة ستقوم بمقابلتهن من العيادات الخارجية في مستشفى المطلع والمستشفيات الحكومية مثل الوطني والحسين بعد ان تم أخذ الموافقة لاجراء البحث في أقسام الاورام في هذه المستشفيات.

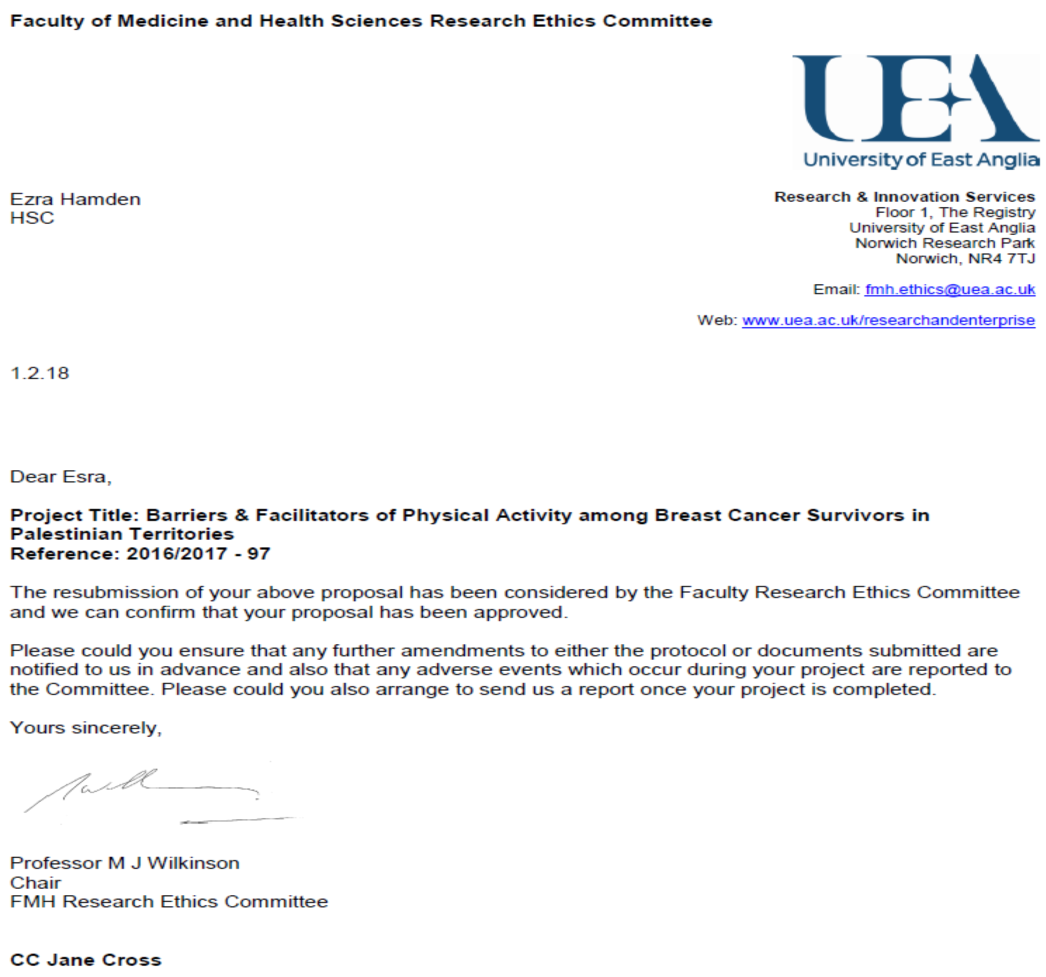
ون: 022799753 + 02 2799234
اكس: 02 2791243

Email: hp@hpf.alquds.edu

Tel: 02 2799753 + 022799234
Tel. Fax: 02 2791243

2018

Appendix 2-H: Ethical approval from University of East Anglia / UK



Faculty of Medicine and Health Sciences Research Ethics Committee

University of East Anglia

Research & Innovation Services
Floor 1, The Registry
University of East Anglia
Norwich Research Park
Norwich, NR4 7TJ

Email: fmh.ethics@uea.ac.uk

Web: www.uea.ac.uk/researchandenterprise

Ezra Hamden
HSC

1.2.18

Dear Esra,

Project Title: Barriers & Facilitators of Physical Activity among Breast Cancer Survivors in Palestinian Territories
Reference: 2016/2017 - 97

The resubmission of your above proposal has been considered by the Faculty Research Ethics Committee and we can confirm that your proposal has been approved.

Please could you ensure that any further amendments to either the protocol or documents submitted are notified to us in advance and also that any adverse events which occur during your project are reported to the Committee. Please could you also arrange to send us a report once your project is completed.

Yours sincerely,

Professor M J Wilkinson
Chair
FMH Research Ethics Committee

CC Jane Cross

Appendix 2- I : UEA IT Service Emails On Data Storage& Data Transfer

From: James Hodge (ITCS) on behalf of Information Security

Sent: 07 August 2017 10:29

To: EsraHamdan (HSC)

Cc: Data Protection

Subject: RE: book an appointment ?

Hi Esra,

Since the data you're collecting will likely be sensitive, I'd recommend storing on something which will protect it if lost or stolen. That means encryption and UEA university issued laptops come with this enabled by default. You may wish to ask your dept. or at the IT Service Desk if you can borrow one, rather than bringing your personal device. Unfortunately according to my research [1] Israel is one of the countries which might object to you bringing an encrypted laptop (or alternative storage device) into or through them. I can't immediately find information about the West Bank/Palestine.

I have found an email address and phone number which you can contact in Israel (Department of Defense Export Controls) for further advice: yoramc@mod.gov.il / (+972) 36977458-9.

If you have access to a reliable Internet connection whilst conducting your interviews, uploading the data to a cloud location rather than storing them locally might be a better option. UEA offers student access to Microsoft OneDrive [2].

I've copied in my colleagues in our DataProtection team in case they have any comments to add. Please let me know what time you're coming to see me, so I can make sure I'm in the office.That is unless I've already answered your questions.

Thanks, James

[1] https://www.eff.org/deeplinks/2012/06/defending-privacy-israeli-border-information-travelers-carrying-digital-devices

[2] https://portal.uea.ac.uk/is/online-wiki-helpdesk/-/wiki/Main/MS+Office+365#section-MS+Office+365-Using+OneDrive

from: EsraHamdan (HSC)

Sent: 04 August 2017 16:28

To: Philip Ayers (ITCS) <P.Ayers@uea.ac.uk>; James Hodge (ITCS) <James.Hodge@uea.ac.uk>

Subject: RE: book an appointement

Dear James

Thanks a lot for your email and effort

I will be coming to the campus anyway on Monday

So.. that's totally fine with me

Second.my project will be about (factors affecting physical Activity among breast cancer Survivors) as am a physiotherapist that will have to interview those survivor and it may contain sensitive information. The field work will be in West Bank/ Palestine and i will travel via Tel Aviv airport / Israel.

I will bring my personal laptop with me.I hope that is useful

Looking forward to meet you on Monday

With my best regards,

Esra’

Appendix 2- J: UEA IT Service Emails on Data Storage& Data Transfer

From: The ISD Information Compliance team <dataprotection@uea.ac.uk>
Sent: Thursday, September 21, 2017 4:05:09 PM
To: Esra Hamdan (HSC)
Subject: Data Protection

THIS EMAIL IS SYSTEM GENERATED. PLEASE DO NOT REPLY.

Congratulations, Esra! You have successfully completed the course with a score of 88 out of 100.

For your reference, your quiz results were:

Q1) The Data Protection Act 1998 regulates the processing of:
Correct Answer: personal data
Your answer: personal data

Q2) What agency is responsible for enforcing the Act?
Correct Answer: Information Commissioner's Office
Your answer: Information Commissioner's Office

Q3) Which of the following do you think falls within the definition of personal data?
Correct Answer: student records
Your answer: student records

Q4) A waste disposal firm is contracted to shred old records. Are they a:
Correct Answer: data processor
Your answer: data controller

Q5) How many principles does the Act have?
Correct Answer: eight
Your answer: eight

Q6) How must personal data be processed under the first data protection principle?
Correct Answer: fairly and lawfully
Your answer: fairly and lawfully

Q7) Which of the following is a condition for processing sensitive personal data?
Correct Answer: explicit consent of the data subject
Your answer: explicit consent of the data subject

Q8) Which of the following are rights of a data subject?
Correct Answer: for access,for accuracy,to object to processing likely to cause damage and distress,to object to automated decision making,to seek compensation,to prevent processing for direct marketing
Your answer: for access,for accuracy,to object to processing likely to cause damage and distress,to object to automated decision making,to seek compensation,to prevent processing for direct marketing

--End--

The University of East Anglia Data Protection Act training module.
Questions? Contact: dataprotection@uea.ac.uk for any queries.

Provided by ICRE8, an initiative of The Institute of Cancer Research.

Appendix 3-K: Systematic review protocol/ PROSPRO Registration

PROSPERO
International prospective register of systematic reviews

NHS
National Institute for
Health Research

Factors influencing physical activity amongst women surviving breast cancer: a systematic review and meta-synthesis

Esra' Hamdan, Jane Cross, Sarah Hanson, Toby Smith

Citation

Esra' Hamdan, Jane Cross, Sarah Hanson, Toby Smith. Factors influencing physical activity amongst women surviving breast cancer: a systematic review and meta-synthesis. PROSPERO 2016 CRD42016053051 Available from:
http://www.crd.york.ac.uk/PROSPERO/display_record.php?ID=CRD42016053051

Review question

What are the factors influencing physical activity participation amongst women surviving breast cancer ?

Searches

Searches will be conducted for studies that address the factors influencing physical activity among women with breast cancer through the following electronic databases:
Allied and Complementary Medicine Database(AMED), Cumulative Index to Nursing & Allied Health Literature (CINAHL), Database of Abstracts of Reviews of Effects (DARE), EMBASE, MEDLINE, PsycINFO, Physiotherapy Evidence Database (PEDro), Scopus, SPORTDiscus and Physical Therapy & Sports Medicine Collection databases will be searched.
No restriction will be placed on publication period.

Types of study to be included

Peer-reviewed papers published before October 2018 were included in this review. Studies included factors influencing physical activity amongst women surviving breast cancer were included regardless of the study type or if there was an intervention or not.

Condition or domain being studied

Breast cancer.

Participants/population

Studies will be included if their participants are :
1) Women surviving breast cancer.
2) Health Care Professionals, including: Oncologists, General Physicians, Physiotherapists, Occupational Therapists, Nurses, Allied Health and Exercise Physiologists who work with breast cancer survivors.
3) Carers or Family members of breast cancer survivors.
Studies with mixed cancer groups will be excluded if the breast cancer sub-group is not presented separately or in a specific data presented for only those who had survived breast cancer. Men with breast cancer will also be excluded.

Intervention(s), exposure(s)

Studies will be included if they describe the experiences of physical activity among women surviving breast cancer survivors, and the factors affecting those women being physically active, whether this relates to a specific intervention or not.
Physical Activity as exposure has been defined by the researcher as including :

- Active Living .
- Active transport as walking, biking .
- Engaging in any kind of Exercises or sport
- Participate in social events in general.

Comparator(s)/control

Not applicable.

Context

All studies that record or collect information regarding factors influencing physical activity amongst women surviving breast cancer will be included regardless of the study setting.

Main outcome(s)

Primary outcome measures are all factors that are influencing the uptake , maintenance and the levels of physical activity amongst women surviving breast cancer.

Timing and effect measures

Additional outcome(s)

None.

Data extraction (selection and coding)

One reviewer did data extraction using a specifically designed data extraction form and it was piloted and revised as required.This was verified for quality assessment by a second reviewer .20% was checked by a second reviewer .
-Extracted information will include:
Information about study design, characteristics of participant's populations such as age, ethnicity, socio-economic status, co-morbidities, details of the intervention and the setting if any. Identification of any factors influencing physical activity amongst women surviving breast cancer.

Risk of bias (quality) assessment

The quality of the selected papers will be assessed using relevant tool.
For qualitative literature the predominant research design which we anticipate to gather, the (JBI) Joanna Briggs Critical Appraisal Tool , will be used as it provides more detailed instruction on how to interpret criteria than others . For all other study designs, the appropriate CASP (Critical Appraisal Skills Programme) checklist will be used. Each included paper will be assessed using a critical appraisal tool by one reviewer and independently verified by a second reviewer for quality assurance.
No data will be excluded according to quality.

Strategy for data synthesis

Data synthesis will be carried out for qualitative and quantitative results.
We will analyse the data using a meta-synthesis approach. It is a set of technique for the interpretive integration of research findings. This will be appropriate because synthesis involves some degree of analyse studies in sufficient detail to preserve the integrity of each study, which will permit synthesis to recognise similarities and differences that shaped findings among studies.

Analysis of subgroups or subsets

No group analysis will be made based on the type of studies rather than we will analyse breast cancer survivors, health care professionals and carers ' points of views separately.

Contact details for further information

Esra Hamdan
e.hamdan@uea.ac.uk

Organisational affiliation of the review

University of East Anglia
www.uea.ac.uk

Review team members and their organisational affiliations

Miss Esra' Hamdan. University of East Anglia
Dr Jane Cross. University of East Anglia
Dr Sarah Hanson. University of East Anglia
Dr Toby Smith. University of Oxford

Anticipated or actual start date

14 November 2016

Anticipated completion date
31 December 2018

Funding sources/sponsors
This Systematic Review is part of a PhD Programme at the University of East Anglia, UK

Conflicts of interest
None known

Language
English

Country
England

Stage of review
Review_Completed_not_published

Subject index terms status
Subject indexing assigned by CRD

Subject index terms
Breast Neoplasms; Exercise; Humans; Survivors

Date of registration in PROSPERO
09 December 2016

Date of publication of this version
16 January 2019

Details of any existing review of the same topic by the same authors

Stage of review at time of this submission

Stage	**Started**	**Completed**
Preliminary searches	Yes	Yes
Piloting of the study selection process	Yes	Yes
Formal screening of search results against eligibility criteria	Yes	Yes
Data extraction	Yes	Yes
Risk of bias (quality) assessment	Yes	Yes
Data analysis	Yes	Yes

Versions
09 December 2016
18 December 2018
16 January 2019

Appendix 3-L: Systematic review search strategy

- **Search terms were identified by means of the inclusion and exclusion criteria specified in the PICO as following :**

01. Breast
02. Cancer
03. Malignant
04. Oncology
05. OR/1-3
06. Survive
07. Barriers
08. Enablers
09. Factors
10. Influences
11. Preference
12. lifestyle
13. OR/6-10
14. Physical Activity
15. Exercise
16. Physiotherapy
17. Physical therapy
18. Rehabilitation
19. OR/12-16
20. AND/4, 6, 11,17

Appendix 3-M: Data extraction tool

Data extraction sheet of Systematic Review Study

Author (s)		
Title		
Country/ location		
Study Aims		
Methods	**Design/ Study Type**	
	Participants (Age group) **Level of Education** **Residence Place**	
	Ethnicity / Religion	
	Setting (Hospital, Community-based, Mixed, Others)	
Key Results		
Intervention if any		
Barriers of PA		
Facilitator of PA		
Preference of PA		
Suggestions for Future Research		

Appendix 3-N: JBI Critical Appraisal Checklist for Qualitative Studies

Table 3.4: A Methodological quality assessment for qualitative studies

Study	1	2	3	4	5	6	7	8	9	10	Total	Grade
1.(Corbett et al., 2018)	Yes	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	Yes	8/10	Good
2.(Owusu et al, 2018)	Yes	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	Yes	8/10	Good
3.(Koutoukidis et al., 2018)	Yes	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	Yes	8/10	Good
4.(Fong et al., 2018)	Yes	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	Yes	8/10	Good
5.(Haussmann et al., 2018)	Yes	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	Yes	8/10	Good
6.(Smith et al, 2017)	Yes	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	UN	7/10	Good
7.(Smith-Turchyn et al., 2016)	Yes	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	Yes	8/10	Good
8.(Wurz, St-Aubin and Brunet, 2015)	Yes	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	Yes	8/10	Good
9.(Mackenzie, 2015)	Yes	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	Yes	8/10	Good
10.(Husebø et al., 2014)	Yes	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	Yes	8/10	Good
11.(Brunet et al., 2013)	Yes	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	Yes	8/10	Good
12.(Hefferon et al., 2013)	Yes	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	Yes	8/10	Good
13.(Loh et al., 2011)	Yes	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	UN	7/10	Good

14.(Sander et al., 2011)	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**UN**	**UN**	**Yes**	**Yes**	**Yes**	**8/10**	**Good**
15.(Miedema and Easley, 2011)	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**UN**	**UN**	**Yes**	**Yes**	**Yes**	**8/10**	**Good**
16.(Whitehead and Lavelle, 2009)	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**UN**	**UN**	**Yes**	**Yes**	**Yes**	**8/10**	**Good**

Options Yes/No/UN (Unclear)/NA (Not Applicable) Tool's criteria

Tool's criteria: 1. Is there congruity between the stated philosophical perspective and the research methodology? 2. Is there congruity between the research methodology and the research question or objectives? 3. Is there congruity between the research methodology and the methods used to collect data? 4. Is there congruity between the research methodology and the representation and analysis of data? 5. Is there congruity between the research methodology and the interpretation of results? 6. Is there a statement locating the researcher culturally or theoretically? 7. Is the influence of the researcher on the research, and vice-versa, addressed? 8. Are participants, and their voices, adequately represented? 9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body? 10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Appendix 3-O: JBI Critical Appraisal Checklist for Analytical Cross-Sectional Studies

Table 3.4 (continued) included cross-sectional studies

Study	1	2	3	4	5	6	7	8	Total	Grade
17.(Hughes et al., 2015)	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	6/8	Good
18.(Jones and Paxton, 2015)	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	6/8	Good
19.(Oyekanmi and Paxton, 2014)	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	6/8	Good
20.(Spector, Battaglini and Groff, 2013)	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	6/8	Good
21.(Vallance et al., 2012)	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	6/8	Good
22.(Ottenbacher et al., 2011)	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	7/8	Good
23.(Rogers et al., 2008)	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	5/8	Good
24.(Daley et al., 2008)	Yes	Yes	Yes	Yes	UN	UN	Yes	Yes	6/8	Good

Options Yes/No/UN (Unclear)/NA (Not Applicable) Tool's criteria:

Tool's criteria: 1. Were the criteria for inclusion in the sample clearly defined? 2. Were the study subjects and the setting described in detail? 3. Was the exposure measured in a valid and reliable way? 4. Were objective, standard criteria used for measurement of the condition? 5. Were confounding factors identified? 6. Were strategies to deal with confounding factors stated? 7. Were the outcomes measured in a valid and reliable way? 8. Was an appropriate statistical analysis used?

Overall appraisal: Include ☐ Exclude ☐ Seek further info

Appendix3-P: JBI Critical Appraisal Checklist for Randomized Controlled Trials

There was only one RCT study (Schmidt et al., 2017) that was conducted in Germany, on 227 WABC (113 control group) and (114 exercise intervention)

Study	1	2	3	4	5	6	7	8	9	10	11	12	13	Total	Grade
25. (Schmidt et al., 2017)	Yes	Yes	Yes	UN	UN	UN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	10/13	Good

Tool's criteria: 1. Was true randomization used for assignment of participants to treatment groups? 2. Was allocation to treatment groups concealed? 3. Were treatment groups similar at the baseline? 4. Were participants blind to treatment assignment? 5. Were those delivering treatment blind to treatment assignment6. Were outcomes assessors blind to treatment assignment? 7. Were treatment groups treated identically other than the intervention of interest? 8. Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed? 9. Were participants analyzed in the groups to which they were randomized? 10. Were outcomes measured in the same way for treatment groups? 11. Were outcomes measured in a reliable way? 12. Was appropriate statistical analysis used? 13. Was the trial design appropriate, and any deviations from the standard RCT design (individual randomization, parallel groups) accounted for in the conduct and analysis of the trial?

Overall appraisal: Include ☐ Exclude ☐ Seek further info

Appendix 3-Q: General characteristics of systematic review included studies

Study Authors	**Country**	**Design**	**Participants & Gender**	**Mean Age**	**Outcome measures used if any**	**Setting / Physical Activity location**	**Barriers**	**Facilitators**	**Preference**	**Quality assessment JBI**
1. (Corbett et al., 2018)	United Kingdom	In-depth semi-structure interviews	32 participants 11 were **WABC** Females were 14 in total and 11 were BC	68.84 years	None	Either at university of Southampton or at participant private homes according to preference (5) of them.	-Contextual & health-related barriers, specifically linked to post-treatment cancer. -uncertainty about how to implement adaptive changes -lack of support from HCPs	Not mentioned	Not mentioned	8/10
2. (Owusu et al ,. 2018)	USA	In-person interviews (n=60) and follow-up focus groups (n=45). Thematic analyses	60 **WABC** women No-Hispanic white 30 (50%) African American 30 (50 %) follow up 45 BC focus group[	71 years above 65 years	None	community cancer support centre	-Race a& Culture does Influence PA (51%) -Race & Culture not Influence PA (49%) -Health Issues (43%) -Inclement Weather (40%) -Lack of a Physical Activity Buddy (22%)	-Increase energy 15% -Helping Body 28% -Reducing Stress 5% -Helping Mentally & Emotionally (18%)-Religious Faith (38%) Family 50%)Community	Participant (53%) preferred a mid-morning class to avoid traffic. -group sessions (97%) at moderate intensity (55%),	8/10

								Environment (20%) -Household Chores (65%) Walking (45%) Other Forms of Exercise (45%) as dancing and Tai Chi. Strength Training (17%)	-Strength training (80%) -include family and friends (65%), -a buddy system (65%), - (57%) as PA was the reward.	
3. (Koutoukidis et al., 2018)	United Kingdom	In-depth semi-structured qualitative interviews	**21 HCPs:** Nurse: 9 (43%) Physician: 7 (33%) Surgeon: 4 (19%) Allied Health (Physiotherapist): 1 (5%) **16 females 76 %** 5 males 24%	Mostly were between 46-55 years 1 from 26-35 8 from 36-35 10 from 46-55 2 from 56-65	None	Telephone interviews	- HCP Perceptions of survivors' health behaviours - Perceived lack of social support, cultural & Socioeconomic barriers to - Potential loss of connection with the survivor- HCP self-identification as the right person to provide lifestyle advice.	-HCPs perceived their own lack of adherence to lifestyle guidelines as both a barrier and a facilitator for providing advice; by not being a role model	HCPs combination of verbal &written lifestyle information would be preferable to only verbal advice, as patients receive too much	8/10

4. (Fong et al ., 2018)	Canada	Focus Groups **70 % were females**	**27 HCPs:** Medical oncologist (10) Radiation oncologists (2) Surgical oncologists (2) GP (1) Primary care physician (2) Nurse (9) Mammogram technician (1)	Four cancer hospitals	None	None	1) lack of training and knowledge related to PA 2) being unsure of when to integrate PA counselling 3) clinicians experienced barriers as hospital administration 4) Lack of awareness community-based programs 5) Decreased clinicians’ self-efficacy for counselling.	1) Clinicians wanted resources that promote patient-managed PA, available on multiple platforms (printed & online). 2)Continued education, highlighting recent research and effective implementation of PA	To develop PA counselling strategies that are clinician-initiated but not dependent on clinicians.	8/10
5. (Haussmann et al., 2018)	Germany	Semi-structured interviews	**30 HCPs:** GP (10) Specialised Physician (10) Oncology Nurse (10) **Doctor**s **50 % M** **50% F** **while for nurses, 90% were F and 10% M**	45 Year	None	None	1) HCPs’ concerns over exertion of patients 2)Topic is currently inappropriate to address Injuries or accidents 3) Patient’s physical condition 4)Assumed interest of a patient in PA	Social comparisons between patients with cancer Patient’s former PA Social environment of a patient Exercise programs Information for HCPs		8/10

							5)Structural factors as HCPs' workload timing and coordination 6) Lack of guideline recommendations &Lack of reimbursement for PA counselling	Information for patients		
6. (Schmidt et al., 2017)	Germany	Self-reported physical activity before, during and three-six- and 12-months post intervention (exercise**RCT**	227 **WABC** 113 control group) & (114 exercise intervention) All females	54.6 years	Self – reported by standardized questions adopted from SQUASH	A specific training facility in Germany	-Low pre-diagnosis level of exercise, -Lower education, -Post-menopausal -Depressive symptoms. -Age was not significant as well pain, fatigue and muscle pain.	-Being active and engaged in exercise before the diagnosis.	Walking was the preference and continued over time While cycling and resistance were less preferable	RCT 11/13
7. (Smith et al ,. 2016)	UK	semi-structured interviews	**7 WABC** / 19 Participants British	59 years	None	None	-limited guidance on participation in PA -Tiredness/ fatigue among the Health-related barriers	- "physical activity is good & desire to be physically active," -Social support &structured exercise		7/10

8. (Tirado-Gómez et al, 2016)	Puerto Rican	cross sectional survey	**50 WABC**	57.2	-GLTEQ to assess the level of PA - Barriers to exercise self – efficacy. - used adopting (Sallis's Social Support &Exercise Survey) - Assess accessibility to exercise equipment.	a clinic setting	- Lack of knowledge of the safety of exercise after breast cancer as many added that they did not know what exercise activities they could or could not do after treatment. -less than 24% were meeting ACS PA guidelines	(44%) had access to exercise equipment. -The majority mentioned that they receiving material in the postal mail (44%).	(72%) Preferred group settings 26%) in family settings (18%) prefer individual settings. (76%) only light intensity and no moderate or vigorous activity.	7/8
9. (Smith-Turchyn et al., 2016)	Canada	semi-structured interviews	**24 HCPs** : Medical oncologist 7 (29.2) / Primary care nurse 5 (20.8) Radiation oncologist 4 (16.7)/ Surgeon 2 (8.3) Radiation therapist 2 (8.3)/ GP in oncology 1 (4.2)	One on one, in person (n=21), by telephone (n=2), or by videoconference (n=1) .	None	None	-Institution barriers (Lack of Time & (Lack of identification of who discuss PA - HCP barriers/ Lack of specific knowledge about PA, PA is a low priority, Forget to discuss exercise ,PA -Perceived patient barriers such as negative attitude toward	-Institution supports/ Inclusion of PA as part of the breast disease site team, Exercise programs housed at institution -HCP education -Individual supports Patient education		8/10

			Nurse practitioner 1 (4.2) / Social worker 1 (4.2) Dietician 1 (4.2)/ Female 16 (66.7) Male 8 (33.3)				PA, -Lack of accessibility & Cost. -Transportation, Weather Patient side effects and symptoms, Patient time.	materials/ Pamphlets, Posters, Prescription pad, Handouts -Personal knowledge of healthy eating and exercise -Social support -Discipline & motivation		
10. (Wurz, St-Aubin and Brunet, 2015)	Canada	two face-to-face semi-structured interviews during the first and last week	**7 WABC** Females /mean age 55.3 years/ Caucasian	55.3 years	None	-8-week group-based physical activity program In community setting	-Situational barriers, (i.e., distance of centre, traffic) -Institutional factors (i.e., competing roles and responsibilities), - Internal barriers, which consisted of cancer specific limitations.)	-Motives for initial & continued participation (i.e., gaining social support, networking, & being around similar BC) - Internal (ifeeling a sense of personal fulfilment, acquiring health benefits, recovering from BC)		9/10

11. (Mackenzie, 2015)	Australia	In-depth, semi-structured interviews	**36 WABC**. 17 lived in rural and 19 in urban locations	40 years old Average (28 to 52 years)	None	Home	-Socio-economic factors, -Treatment-related pain or fatigue , -Preferences for use of available time. -BCS beliefs about motherhood.	-BCS previous PA daily lives; -Knowledge of PA health benefits -Social influence, particularly partner support.		8/10
12. (Jones and Paxton, 2015)	USA	Cross Sectional Survey	**275 WABC**	54 years	None	survey monkey	1-lack of interest 2-lack of company 3-lack of facilities or space			7/8
13. (Husebø et al., 2014)	Norway	(5) Focus group interviews Thematic analysis.	**27 WABC**	52 years	None	Hospital location familiar to the participants.	(1) Side effects of breast cancer treatment. (2) other valued activities compete with exercise	(1) Restore, normality in daily life motivates exercise, (2) constructive support (3) positive beliefs motivate PA		9/10
14.(Oyekanmi and Paxton, 2014)	USA	Web-based survey / Community.Physical activity assessed via	**273 WABC**	54 years.	14 items barrier to PA inventory consisted		(55.4%) were not meeting PA guidelines & reported the following			7/8

		self-administered instrument designed for the women's Health Initiative			of related to environment, evaluated by scale ranging from 1-5. , personal and social factors .		barriers : (1) lack of discipline (43.8%)(2) lack of time (32.4%), (3) lack of energy(34.1) (4) lack of interest (28.2(5) lack of good health (17.9%) (6)Fear of injury (23%) (7) lack of enjoyment (47%) (8) Lack of company (37%)			
15. (Brunet et al., 2013)	Canada	Semi-structured, in-depth interviews	**9 WABC** Caucasian /	55.33 years			(1)Physical factors as ; - Mobility limitations - Lack of energy/fatigue / Pain) (2) Psycho-social factors as - Lack of motivation - confidence/ - companion (3) Enviro-mental/ Organizational factors as; - Bad weather -Costs - Safety issues - Lack of equipment/ Lack of knowledge/- Time constraints.	(1) BCS motivation to engage in PA as - weight management , maintain health, - improve fitness ,strength, (2) Psychosocial as - Avoid sense of selfharm,- Experience positive emotions, enjoyment, social support,		9/10

16. (Hefferon et al., 2013)	United Kingdom	Semi-structured interview	**83 WABC**	55.33 years	None	None	(1)Psycho-logical barriers as : - lack of motivation,- fears, dislike of gym, not being the ‘sporty type’), (2)Physical barriers as- ageing process, - cancer treatment & other physical co-morbidities, - fatigue - weight gain) (3)Contextual &environmental barriers as - employment, - traditional female care-giving roles, proximity/ access to facilities,- seasonal weather).	None		9/10
17. (Spector, Battaglini and Groff, 2013)	USA	Cross-sectional survey.	**65 WABC** Caucasian 46% African American 34% Hispanic/	Age (years) 25–44 (9 %) / 45–64 (40 %) / 65–75 (16 %)	PA was measured using the short form of IPAQ Perceived self-	Community wellness workshops	*Perceived barriers for Caucasian and AA women were -lack of self-discipline, -lack of time &			7/8

			Latins 16% 2% not defined		efficacy was measured through self-reported using five –item Physical Exercise Self Efficacy Scale.		energy. *Hispanic/Latina women reported -feeling self-conscious of looks, -lack of self-discipline, -lack of enjoyment -Low socioeconomic status as; - lack of environmental– lack of equipment or facility to PA.			
18. (Vallance et al., 2012)	Canada	mailed self-report survey / questionnaire cross sectional	**524 WABC**	Age <60 years of age 238 ≥60 years of age 238	Survivors who indicated they would not be able to participate in a PA program were asked to indicate the barriers preventing them from participating.	Home	Barriers were - Travel (73.1) - Lack of time (50.2 %), - Cost (29.5)		The most preferred type of PA was: - Walking (51.1 %), - Flexibility (36.3 %) - Strength training (26.5 %).	7/8
19. (Loh et al ., 2012)	Malaysia	Focus group	**14 WABC** Chinese (9/ (64%)	21-29 /1(.5%)30-39/19		Clinic	(1) Patient Barrier as - Trans- potation, - Family	(1) Positive experience of exercise		9/10

			Malay (3/ 19.3%) Indian (2/ 16.7%)	9.6 %40-49/61 (31%)50-59 /84 (42.6%)60-65/32 (16.2%)			commitment - Job commitment - Medical illness) (2) Facilities barrier as: - Time, - Lack of manpower, (3) Institutional barriers as: - Lack of parking, - Poor employer support)	(2) Easy access to facility (3) Good social support		
20. (Sander et al., 2011)	USA	A grounded theory qualitative study in which focus groups'' and semi-structured interviews were used as the primary data collection methods	**30 WABC**	56.9 Year (18-80 years)	Rapid Assessment of Physical Activity (RAPA)	Medical center	Barriers as; cancer-related barriers, such as fatigue, neuropathy, joint pain, Muscular pain - Poor body image, -lack of or inaccurate information about safe exercise.- Too much support barrier to activity. Time	Facilitators – beliefs ofexercise would prevent recurrence of their cancer & increase their immune responses to fight disease. - Survivors who were active were not afraid to exercise.		8/10
21. (Miedema and Easley, 2011)	Canada	Two telephone interviews.	**35 WABC**	-Average age at the time of diagnosis (40 Y)	None	Home	(1) Systemic barriers as - Accessibility, availability of services - Transportation -			9/10

				-Average age at the time of interview (43 Y).			Financial challenges) (2) Personal barriers as - Too busy “catch up on all that they missed”). -Financial resources - Communication with their HCPs			
22. (Ottenbacher et al., 2011)	North America / The study sample resided in 39 US states and two Canadian provinces	Telephone interview cross sectional to assess exercise barriers	**259 WABC**	(53.5) years	Checklist of 14 items to assess Exercise Barriers including (personal, social and environmental barriers) yes or no Minutes of PA were assessed by telephone interview using 7-day PAR	Home	BCS reported barriers more than Prostate cancer such as: (1) No one to exercise with,” (2) nowhere to do it,” (3) “don’t like to sweat,” (4) “no willpower” (5) “Have responsibilities at home			7/8
23. (Whitehead & Lavelle, 2009)	United Kingdom	semi-structured interview or focus group.	**29 WABC**	59 and 86 years (M =66.54	None	A home-based RCT to promote physical	Barriers as (1)Practical, health-related, (2) Lack of time (3) Full and busy	Facilitators: (1) Being physically active “does you good,”		9/10

						activity and a healthy diet among cancer survivors	lives with family commitment (4)Could not fit (5)A lack of motivation (6) Self-consciousness while being physically active, especially among those who had mastectomy /lumpectomy (7) A fear of overdoing it post-illness (8)Information was too brief, or given at not good timing.	and that it can help to fight the aging process and to control other medical conditions. (2) Weight loss (3) Better self-image. (4)A desire to be "normal" (5) Enjoy-ment. (6) Stress management techniques.		
24. (Rogers et al., 2008)	USA	a self-administered mail surveys	**192 WABC** Caucasian (98%) non-Hispanic (2%).	64 years.	- The Godin Leisure Time Exercise Questionnaire - perceived barrier scale) Exercise enjoyment status- Social Support - Fatigue Functional	Home	(1) 50 % No leisure time (2) (21%) did not enjoy exercise, (3) Perceived environment (4) Being Obese (5) Less self-efficacious, (6)Lower social support.	45 (24%) some enjoyment, and 105 (55%) reported high enjoyment.	Participant preferring face-to-face counselling intensity exercise. Younger women prefer exercising outdoors. preferring an	5/8

					Assessment of Cancer Therapy Fatigue (FACT-F)				exercise specialist at either a cancer center or health club	
25. (Delay et al., 2008)	UK	Postal questionnaire	**102 HCPs** consultant breast cancer oncologists and surgeons		brief self-designed questionnaire	postal	(1) (55.9%) did not routinely discuss PA with their patients. (2) Oncologists/surgeons who did offer advice, most focussed on discussing benefits of physical activity for physical and functional health gains and for facilitating weight control and maintenance.		Oncologist advised BC patients that physical activity may decrease risk of recurrence and improve survival,	6/8

Appendix 4-R/S/T: Cover Letter for Medical & Human Recourse Mangers in the Palestinian Health Care System

Dear [Name]

I am writing about a project I am carrying out as part of my PhD entitled: “***Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals at the Palestinian Territories: An Exploratory Study***”

We are recruiting women after breast Cancer & Health care professionals including; oncologists, general physicians, surgeons, nurses, physiotherapists and any other health care professionals who work with people who have breast cancer across the West Bank. In addition, we wish to recruit stakeholders working in Oncology in the Palestinian Health Care System.

Previous research has demonstrated that exercise and physical activity can be beneficial for breast cancer survivors. However, factors may either help or hinder people being more physically active following breast cancer. In this study, we aim to reach better understanding of what these barriers or facilitators are.

To answer this, we are undertaking a series of one to one interview with two groups of people: (1) Women after Breast Cancer (2) HCPs. By gaining the views of these four different groups, we will better understand physical activity of people following breast cancer.

I ask permission to liaise with you to recruit, with their consent, women after breast cancer survivors, oncologists, GPs, surgeons and health care professionals (nurses, PT, OT) for this project.

I enclose the participant information sheet and consent forms for your information. If you are interested in helping us investigate and explore the barriers and facilitators of physical activity among breast cancer survivors, please get in touch. Call Miss Esra’ Hamdan on (022791243 / 0568600590) or email on e.hamdan@uea.ac.uk / ehamdan2@staff.alquds.edu

Best Wishes,

Esra’ Hamdan/PhD Student / UEA /UK

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Appendix 4-U: Advertisement Flyer for Women after Breast Cancer

Would you like to help us explore any factor including barriers & facilitators of being physically active among Palestinian women after breast cancer?

We are recruiting adult Palestinian women after breast cancer that are at least 3-months after completing their cancer treatment.

We are running one-to-one interviews for people following breast cancer to explore physical activity after breast cancer. The result of this project will improve what we know about exercise and physical activity for people following breast cancer who live in the West Bank.

If you’re interested in helping us, please get in touch by contacting Miss Esra’Hamdan on 022791243/0568600590 or email on: e.hamdan@uea.ac.uk

Or ehamdan2@staff.alquds.edu

اعلان للاشتراك بدراسة خاصة للنساء بعد سرطان الثدي

هل ترغبين في مساعدتنا في استكشاف أي عوامل قد تؤثر على نشاطك البدني بما في ذلك الحواجز والميسرات للنشاط البدني بين النساء الفلسطينيات بعد سرطان الثدي؟

نقوم باستقطاب النساء الفلسطينيات البالغات بعد الإصابة بسرطان الثدي بعد 3 أشهر على الأقل من إكمال علاجهن من السرطان.

نحن نجري مقابلات فردية مع النساء لاستكشاف النشاط البدني بعد سرطان الثدي والذين يعيشون في الضفة الغربية

إذا .ستحسّن نتيجة هذا المشروع ما نعرفه عن التمارين والنشاط البدني للأشخاص الذين يتابعون سرطان الثدي

اذا كنتي مهتمَة بمساعدتنا ، فيرجى الاتصال بنا:

الآنسة إسراء حمدان على 0568600590/022791243

أو ارسال بريد على البريد الإلكتروني:

e.hamdan@uea.ac.uk or ehamdan2@staff.alquds.edu

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Appendix 4-V: Advertisement/Flyer for Oncologists, GPs & Health Care Professionals

We are recruiting Oncologists, General Physicians, Physiotherapists and Occupational Therapists, Nurses who treat people following cancer, especially women after breast cancer. This project is part of my PhD studies entitled: "***Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals at the Palestinian Territories: An Exploratory Study***"

We are running one-to-one interviews for health care professionals to explore factors affecting physical activity participation and promotion after breast cancer. The result of this project will provide a better understanding on exercise and physical activity for people following cancer who live in the West Bank, especially women after breast cancer.

If you're interested in helping us, please get in touch by contacting Miss Esra' Hamdan on 022791243/0568600590or email on: e.hamdan@uea.ac.uk

Or ehamdan2@staff.alquds.edu

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Appendix 4-W: Letter/Email of Interest / (Women after breast cancer)

Subject: "***Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals at the Palestinian Territories: An Exploratory Study***"

Hello <name>,

Thank you for showing an interest in this study. Attached to this email is an information sheet about the project, which is part of my PhD studies.

This explains the purpose of the research, gives some guidelines to help you make the most of the discussion, and provides contact details for any further queries.

If you choose to take, part there will be no need to bring this sheet with you on the day of interview, and if you need a reminder of its content, I will bring some printed copies with me. Please note that there is no specific preparation that we need you to do if you want to take part in the one to one interview.

I understand that you have limited time and therefore, I will be able to travel to your home or any other convenient place, which we can agree on, to conduct the interview. The interview can be condensed to fit your schedules.

The interview may cover topics that you might find it distressing. If so, you have the right to not answer those questions, and we will stop the interview immediately if you wish not to continue.

If you're interested, please get in touch by contacting Miss Esra' Hamdan on 022791243/0568600590or email on: e.hamdan@uea.ac.uk or ehamdan2@staff.alquds.edu.

Best Wishes,

Esra' Hamdan

PhD Student

الملحق: رسالة / رسالة إلكترونية / (النساء بعد سرطان الثدي)

الموضوع: "العوامل المؤثرة على المشاركة في النشاط البدني لدى النساء بعد سرطان الثدي والترويج بين أخصائيي الأورام في مجال الرعاية الصحية في الأراضي الفلسطينية: دراسة استكشافية"

شكرا لإظهار اهتمامك بهذه الدراسة. مرفق مع هذا البريد الإلكتروني ورقة معلومات حول المشروع ، وهي جزء من دراسات الدكتوراه.

يشرح هذا الغرض من البحث ، ويقدم بعض الإرشادات لمساعدتك على الاستفادة القصوى من المناقشة ، ويوفر تفاصيل الاتصال لأي استفسارات أخرى.

إذا اخترت المشاركة ، فلن تكون هناك حاجة إلى إحضار هذه الورقة معك في يوم المقابلة ، وإذا كنت بحاجة إلى تذكير بمحتواها ، فسأحضر بعض النسخ المطبوعة.

يرجى ملاحظة أنه لا يوجد إعداد محدد نحتاج منك القيام به إذا كنت ترغب في المشاركة في المقابلة الفردية.

أفهم أن لديك وقتًا محدودًا ، وبالتالي ، سأتمكن من السفر إلى منزلك أو أي مكان مناسب آخر يمكننا الاتفاق عليه لإجراء المقابلة.

يمكن تكثيف المقابلة لتناسب جداولك.

قد تغطي المقابلة مواضيع قد تجدها مزعجة. إذا كان الأمر كذلك لديك الحق في عدم الإجابة على هذه الأسئلة ، وسوف نوقف المقابلة على الفور إذا كنت ترغب في عدم المتابعة.

اذا كنتي مهتمَة بمساعدتنا ، فيرجى الاتصال بنا:

الآنسة إسراء حمدان على 0568600590/022791243

أو ارسال بريد على البريد الإلكتروني:

e.hamdan@uea.ac.ukorehamdan2@staff.alquds.edu

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Appendix 4-X: Letter/Email of Interest : Oncologists, GPs, Surgeons & Health Care Professionals

Subject: "*Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals at the Palestinian Territories: An Exploratory Study*"

Hello <name>,

Thank you for showing an interest in this study. Attached to this email is an information sheet about the project, which I am carrying out as part of my PhD studies. This explains the purpose of the research gives some guidelines to help you make the most of the discussion and provides contact details for any further queries.

If you choose to take, part there will be no need to bring this sheet with you on the day of interview, and if you need a reminder of its content, I will bring some printed copies with me.

Please note that there is no specific preparation that we need you to do if you want to take part in the one to one interview.

I understand that as a clinician, you have limited time and therefore, I will be able to travel to meet you at your clinics. The interview can be condensed to fit your schedules.

You have all the right not to answer any question, and we will stop the interview immediately if you wish not to continue.

If you're interested, please get in touch by contacting Miss Esra' Hamdanon022791243/0568600590or email on: e.hamdan@uea.ac.uk or ehamdan2@staff.alquds.edu.

Best Wishes,

Esra' Hamdan

PhD Student

Appendix 4-Y: Letter/Email of Confirmation / Women after Breast Cancer

Subject: "*Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals at the Palestinian Territories: An Exploratory Study*"

Hello <name>,

Thank you for confirming that you are able to attend this interview to investigate and explore the barriers and facilitators to physical activity among breast cancer survivors.

The interview will be on <date> at <time>. Please meet me on the day at the following location: <location>

Please note that there is no specific preparation that we need you to do before this interview. **The interview may cover topics that you might find distressing as a BCS. If so you have the right not to answer those questions, and we can stop the interview immediately if you do not wish to continue.**

Thank you once again for agreeing to take part and I look forward to seeing you on the day.

Best Wishes,

Esra' Hamdan

PhD Student

e.hamdan@uea.ac.uk / ehamdan2@staff.alquds.edu

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Appendix 4-Z: Letter/Email of Confirmation / Oncologists & Health Care Professionals

Subject: “***Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals at the Palestinian Territories: An Exploratory Study***”

Hello <name>,

Thank you for confirming that you are able to attend this PhD study interview to investigate and explore the barriers and facilitators to physical activity among breast cancer survivors.

The interview will be on <date> at <time>. Please meet me on the day at the following location: <location>

Please note that there is no specific preparation that we need you to do before this interview.

Thank you once again for agreeing to take part and I look forward to seeing you on the day.

Best Wishes,

Esra’ Hamdan

PhD Student

e.hamdan@uea.ac.uk / ehamdan2@staff.alquds.edu

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Appendix i: Participant Information Sheet /Women after Breast Cancer Survivor

Participant Information Sheet (PIS)

Project Title: "*Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals at the Palestinian Territories: An Exploratory Study*"

Researcher: Esra' Hamdan (PhD Student) e.hamdan@uea.ac.uk; ehamdan2@staff.alquds.edu

Primary Supervisor: Dr Jane Cross - J.Cross@uea.ac.uk

Secondary Supervisor: Dr Toby Smith - Toby.Smith@uea.ac.uk

Local supervisor: Dr Asma Imam - aimam@staff.alquds.edu

(Thanks for showing an interest in our study' and considering taking part in investigating the barriers and facilitators to physical activity among Palestinian women after breast cancer as a part of my PhD studies).

What is the purpose of this project?

In this study we will be determining why or why not Palestinian women after breast cancer undertake physical activity in Palestinian Territories. To determine this, we will gain the perspectives of breast cancer women, as well as oncologists, general physicians and health care professionals who have a role in the clinical care of these patients. We aim to explore what the perceived barriers and facilitators (what helps or hinders) people being physically active.

Your views will greatly help us to understand physical activity in people following breast cancer who live in the West Bank.

There are no rights or wrong answers to any of the questions. It is your own opinions that we are interested in.

Am I eligible to take part in this project?

You can take part of this research if:

You are a Palestinian woman who has had breast cancer

You are aged 18 or above and

You have finished your breast cancer treatment at least 3 months ago, (Surgery, Chemotherapy or Radiation Therapy)

You have expressed an interest in taking part

Do I have to take part?

This study is entirely voluntary. If you prefer not to take part, that is fine. If you do take part, you can withdraw without giving a reason anytime up to the point that the data is analysed. If you do withdraw before this point, we can delete your interview. After that point, it will not be possible to separate your responses from the overall analysis.

What will happen to me if I take part?

If you decide to take part, the researcher will ask you sign a consent form to show that you agree to take part. Then, the researcher will explore your views on physical activity for breast cancer survivors by conducting a face-to-face interview.

The interview may cover topics that you might find distressing as a cancer survivor. If so you have the right not to answer those questions, and we can stop the interview immediately if you do not wish to continue.

During the interview, only the researcher be there and she will ask you about some personal information such as your age, address and when you finished your cancer treatment. Moreover, the researcher will explore your views on physical activity as a breast cancer survivor and will ask about any factors that could affect your engagement in physical activities.

What will happen to my information?

The Information we gather will include personal information such as your age, and time since you finished your cancer treatment as well as your views on physical activity.

Your contact details will be stored separately from the anonymised views recorded and not associated with results in any way. You will remain anonymous during the interview analysis and report so that you cannot be identified.

However, to highlight an important point raised in the interview, we may choose to use direct quotes from what you have said. These may be used in the report but will be anonymous so no one could find out that they were made by any specific individual.

Data will be stored safely, respecting the UK Data Protection Act (1998). Data will only be accessed by authorised persons within the Research Team. The only time when we might have to break your anonymity and pass on identifiable information would be if you disclosed information of a serious incident or we believed you or someone else was at risk of serious harm. In this case, we could pass the information on to the Social Services or the Safeguarding Board in Palestine.

Will my taking part in this project be kept confidential?

The audio recorders will be transcribed by the researcher and at this point any information identifying you will be removed. Your name will not be used in any records made in connection with the project.

How will my information be stored?

Fully anonymised data will be stored securely in the researcher's office at Al-Quds University/ Palestine and on a password-protected computer during the project. Long-term data will be stored in a secure room, on a password protected computer, at the University of East Anglia /UK for 10 years. All procedures for the handling, processing, storage and destruction of data follow the requirements of the UK Data Protection Act (1998).

What will happen to the results of the research project?

The results will be published in academic journals and presented at scientific conferences. The data will also be used within the researcher's PhD thesis.

Are there any possible risks with this project?

There are very minimal risks to taking part in this project. If you choose to travel to meet the researcher, it may involve some level of discomforts due to transportation use. You will be asked to take part in the interview at the place you feel is private enough to discuss issues regarding physical activity. You have all the right not to answer any question, and we will stop the interview immediately if you wish not to continue.

What are the possible benefits of taking part?

The data we obtain from your participation will give us important insights on physical activity in people following breast cancer in the West Bank.

We greatly appreciate the contribution of participants to this research that, we hope, will benefit all breast cancer survivors through better understanding in this area.

What if I no longer wish to continue with the project?

You have the right to withdraw from the project without giving any reason up until the point your data is analysed. This will not affect your healthcare provision now or in the future.

What if there is a problem?

If you have any complaints about the researchers or project, please get in touch by contacting Miss Esra’ Hamdan on 022791243/0568600590or email on: e.hamdan@uea.ac.ukorehamdan2@staff.alquds.edu.

Or, you may contact Dr. Akram Kharoubi, Dean of Faculty of Health Professions at Al-Quds University/ Palestine either on +972-2-279-1243/ +972-599-127-800 or email him on akharoubi@staff.alquds.edu.Also, you can email any of the students supervisor that their information are on the beginning of this sheet.

Who has reviewed this project?

The research ethics committee of the Faulty of Medicine and Health Sciences at the University of East Anglia (UEA) /UK, Ethics Committee of Al-Quds University /Palestine and the Medical Ethics & IRB Committee at Augusta Victoria Hospital / Palestine have reviewed and approved the project. Also, Augusta Victoria Each Research Ethics Committee is an independent group, which reviews research to protect the dignity, rights, safety and well-being of participants and researchers.

Thank you very much for taking the time to read this leaflet. If you choose to participate, you will receive a copy of this participant information sheet and the signed consent form.

ورقة معلومات المشارك / الناجيات من مرض سرطان الثدي

University of East Anglia

جامعة القدس
Al-Quds University

(المعيقات والمسهلات المرتبطة بممارسة النشاط البدني بين الناجيات من سرطان الثدي في الأراضي الفلسطينية)

المشرف الرئيسي

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الباحث الرئيسي / أ .اسراء حمدان

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المشرف الثاني

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المشرف المحلي/ د. أسماء الامام

Dr Asma Imam

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ملاحظة / قبل البدء بالبحث ، إذا لم يتمكن المشارك المحتمل من القراءة و الكتابة، فاننا سوف نعثر على شاهد مستقل يمكنه إكمال هذا النموذج كموافقة شفهية من قبل المشارك المحتمل. وينبغي أن يقرأ الشاهد المستقل كل بند من البنود إلى المشارك المحتمل، وإذا وافق المشارك على ذلك، ينبغي أن يطلع الشاهد المستقل على كل بند من البنود التالية ./
الاغلب ان يكون الشاهد المستقل أحد أفراد عائلة الناجيات من سرطان الثدي .

- **لا يستطيع الشاهد المستقل تقديم الموافقة نيابة عن أحد المشاركين.**

يقوم باحثون من جامعة إيست أنجليا / المملكة المتحدة وجامعة القدس / فلسطين بعمل بحث بعنوان : (المعيقات والمسهلات المرتبطة بممارسة النشاط البدني بين الناجيات من سرطان الثدي في الأراضي الفلسطينية) وذلك كجزء من رسالة الدكتوراة للباحثة اسراء حمدان .

تعمل الاستاذة اسراء حمدان محاضر في دائرة العلاج الطبيعي في جامعة القدس/ فلسطين وكذلك تكمل دراستها لنيل درجة الدكتوراة في جامعة ايست انجليا / انجلترا .

اذا كنت بحاجة إلى مزيد من المعلومات، يرجى الاتصال على الاستاذة إسراء حمدان على أرقام العمل في :

- جامعة القدس (0568600590/022791243) أو ارسال ايميل على البريد الإلكتروني على ehamdan2@staff.alquds.edu

نشكركم على قراءة هذه المعلومات والنظر في المشاركة في هذا البحث.

- **ما هو الغرض من هذا البحث؟**

الغرض من هذا البحث هو استكشاف لماذا تقوم الناجيات من سرطان الثدي بممارسة النشاط البدني او عدم ممارسته في الأراضي الفلسطينية من وجهة نظرهن كنساء ناجيات من مرض السرطان. وذلك عن طريق اجراء استمارة اولا لمعرفة بعض المعلومات المتعلقة بحياتكم ومدى نشاطكم البدني ، ثم اجراء مقابلة معكم في الوقت الذي ترونه مناسبا .

آراءكم حول هذه المشكلة مهمة. حيث اننا نود أن نعرف ما ذا تعتقدون أنه قد يعيق أو يسهل الناجيات من سرطان الثدي ليكونوا نشطين جسديا بعد الانتهاء من علاج السرطان.

سوف تساعدنا ارائكم و وجهات نظركم كثيرا على فهم أفضل السبل لتحسين مستوى النشاط البدني بين الناجيات من سرطان الثدي، وبالتالي تحسين نوعية حياتهن .

- لا توجد إجابات صحيحة أو خاطئة على أي من الأسئلة. إنها آرائكم الخاصة التي نهتم بها.

- **هل يتعين عليكم المشاركة؟**

- لا، الأمر متروك لكم تماما لاتخاذ قرار المشاركة . إذا أردتم المشاركة فنحن ممتنون لكم مع التاكيد أنه يمكنكم الانسحاب في أي وقت دون إبداء سبب.
-

إذا قمتم بالانسحاب، قبل قيامنا بعملية التحليل فانه يمكننا حذف ردودكم ولن يتم الكشف عن اي معلومات منكم بتاتا . لكن بعد هذه النقطة، لن يكون من الممكن فصل ردودكم ومع التاكيد انه لن يتم الكشف عن هويتكم بتاتا فنحن لن نحتاج الى اسمائكم بالاضافة الى ان جميع الاجوبة سرية بحتة ولغرض البحث العلمي فقط لا غير .

- **هل هناك أي مخاطر محتملة مع هذا البحث؟**

هناك مخاطر ضئيلة جدا للمشاركة في هذا البحث . فإذا اخترت الذهاب للقاء الباحثة، قد تنطوي على ذلك مستوى بسيط من ضغوطات المواصلات و بسبب الاوضاع في الوطن . ولكن، فالباحثة سوف تطلب منك المشاركة في المكان الذي تشعرفيه بالراحة والوقت الذي تشعر فيه بمزيد من الراحة ايضا . حيث أن الباحثة مستعدة للقاءكم في اماكن عملكم او سكنكم .

- **ما هي الفوائد المحتملة للمشاركة؟**

البيانات التي سنحصل عليها من مشاركتكم سوف تعطينا رؤى هامة من شأنها أن تستخدم لتحسين مستوى النشاط البدني في المرحلة المقبلة من تطورها للناجين من مرض السرطان .

- **ما هي تكلفة مشاركتك في الدراسة؟**

لن تكونوا مسؤولين عن اي تكلفة ، حيث ان الباحثة سوق تصل الى أماكن عملكم او سكنكم بعد الاتفاق المسبق بينكم وقبل موعد المقابلة ب 24 ساعة .

- **هل سوف يُدفع لك للمشاركة في هذه الدراسة؟**

لن يُدفع لك للمشاركة في هذه الدراسة فالمشاركة طوعية بحتة .

- **ماذا لو كان هناك مشكلة؟**

إذا كان لديك أي شكاوى حول الطريقة التي تم التعامل معكم بها أو شعرتم بأي ضرر أثناء البحث سيتم معالجة الامر بمهنية كاملة ، حيث انه يمكنكم الاتصال بالباحثة في أي وقت (المعلومات في بداية هذه الورقة) الاستاذة إسراء حمدان

لمناقشة هذه المسألة أو يمكنكم الاتصال بالدكتورة أسماء الامام إما على رقم العمل (022799234) أو مراسلتها على البريد الالكتروني aimam@staff.alquds.edu

- **ماذا لو لم أكن أرغب في الاستمرار في البحث ؟**

كما ذكرنا سابقا فان المشاركة طوعية تماما ولديكم الحق في الانسحاب من هذا البحث بدون أي سبب، ولن يكون لذلك أي آثار سلبية على مهنتكم او توفير الرعاية الصحية الحالية أو المستقبلية .

شكرا جزيلا على تخصيص الوقت لقراءة نموذج الموافقة هذا.
إذا اخترتي المشاركة، فسيتعين عليك التوقيع على نموذج الموافقة المرفق.

Appendix ii: Participant Information Sheet/Oncologists & Health Care Professionals

Participant Information Sheet (PIS)

Project Title: "*Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals at the Palestinian Territories: An Exploratory Study*"

Researcher: Esra' Hamdan (PhD Student) e.hamdan@uea.ac.uk ; ehamdan2@staff.alquds.edu

Primary Supervisor: Dr Jane Cross J.Cross@uea.ac.uk

Secondary Supervisor: Dr Toby Smith Toby.Smith@uea.ac.uk

Local supervisor: Dr Asma Imam aimam@staff.alquds.edu

(Thanks for showing an interest in our study' and considering taking part in investigating the factors affecting physical activity participation and promotion including barriers and facilitators to physical activity among breast cancer survivors as a part of my PhD studies).

What is the purpose of this project?

In this study we will be determining why or why not women after breast cancer undertake physical activity in Palestinian Territories. To determine this, we will gain the perspectives of Palestinian women after breast cancer as well as oncologists, general physicians and health care professionals who have a role in the clinical care of these patients. We aim to explore what the perceived factors including barriers and facilitators (what helps or hinders) people being physically active. And what affect your role of promoting PA to cancer patients.

Your views will greatly help us to understand physical activity in women after breast cancer who live in the West Bank.

There is no right or wrong answers to any of the questions. It is your own opinions that we are interested in.

Am I eligible to take part in this project?

You can take part of this research if:

You are an oncologist, physician or any other health care provider (Nurse, Physiotherapist, Occupational Therapist).

You are currently working with cancer patients & survivors.

You have expressed an interest in taking part

You agree to sign informed consent for the study

Do I have to take part?

This study is entirely voluntary. If you prefer not to take part, that is fine. If you do take part, you can withdraw without giving a reason anytime up to the point that the data is analysed.

If you do withdraw before this point, we can delete your interview. After that point, it will not be possible to separate your responses from the overall analysis.

What will happen to me if I take part?

If you decide to take part, the researcher will ask you sign a consent form to show that you agree to take part. Then, the researcher will explore your views on physical activity for breast cancer survivors by conducting a face-to-face interview.

During the interview, we will ask you about some personal information such as your age, address and experience with breast cancer patients. Moreover, we will explore your views on physical activity as a professional in the medical field dealing with cancer patients and ask about factors that could affect those cancer and breast cancer survivors engaging in physical activities from your perspective. Your views will greatly help us to understand how best to improve level of physical activity among breast cancer survivors, thus their quality of life.

What will happen to my information?

The Information we gather will include personal information as well as your views on physical activity. Your contact details will be stored separately from the anonymised views recorded and not associated with results in any way. You will remain anonymised during the interview analysis and in the report so that you cannot be identified. However, to highlight an important point raised in the interview, we may choose to use direct quotes from what individuals said. These may be used in the report but will be anonymised so no one could find out that they were made by any specific individual.

Data will be stored safely, respecting the UK Data Protection Act (1998). Data will only be accessed by authorised persons within the Research Team.

The only time when we may have to break your anonymity and pass on identifiable information would be if you disclosed information of a serious incident or we believed you or someone else was at risk of serious harm. In this case, we could pass the information on to the Social Services or the Safeguarding Board in Palestine.

Will my taking part in this project be kept confidential?

The audio recordings will be transcribed by the researcher and at this point any information identifying you will be removed. Your name will not be used in any records made in connection with the project.

How will my information be stored?

Fully anonymised data will be stored securely in the researcher's office at Al-Quds University/ Palestine and on a password-protected computer during the project.

Long-term data will be stored in a secure room, on a password protected computer, at the University of East Anglia /UK for 10 years. All procedures for the handling, processing, storage and destruction of data follow the requirements of the UK Data Protection Act (1998).

What will happen to the results of the research project?

The results will be published in academic journals and presented at scientific conferences. The data will also be used within the researcher's PhD thesis.

Are there any possible risks with this project?

There are very minimal risks to taking part in this project. If you choose to travel to meet the researcher, it may involve some level of discomforts due to transportation use. You will be asked to take part in the interview at the place where you feel able to discuss issues regarding physical activity as well as comfortable to talk. You have all the right not to answer any question, and we will stop the interview immediately if you wish not to continue.

What are the possible benefits of taking part?

The data we obtain from your participation will give us important insights about physical activity in people following cancer in the West Bank. We greatly appreciate the contribution of participants to this research, which, we hope, will benefit all cancer survivors through better understanding in this area.

What if there is a problem?

If you have any complaints about the researchers or project, please get in touch by contacting Miss Esra' Hamdan on 022791243/0568600590or email on: e.hamdan@uea.ac.ukorehamdan2@staff.alquds.edu.

Or, you may contact Dr Akram Kharoubi, Dean, Faculty of Health Professions at Al-Quds University either on +972-2-279-1243/ +972-599-127-800 or email him on akharoubi@staff.alquds.edu. Also, you can email any of the student's supervisors; their information is on the beginning of this sheet.

What if I no longer wish to continue with the project?

You have all the right to withdraw from the project without given any reason up until the point your data is analysed. This will not affect your healthcare provision now or in the future.

Who has reviewed this project?

The research ethics committee of the Faulty of Medicine and Health Sciences at the University of East Anglia (UEA) /UK, Al-Quds University Ethics Committee and the medical Ethics & IRB Committee at Augusta Victoria Hospital / Palestine have reviewed and approved the project. Each Research Ethics Committee is an independent group, which reviews research to protect the dignity, rights, safety and well-being of participants and researchers

Thank you very much for taking the time to read this leaflet. If you choose to participate, you will receive a copy of this participant information sheet and the signed consent form.

UEA
University of East Anglia
جامعة القدس
Al-Quds University

نموذج ورقة المشارك /

أطباء الاورام والعاملين في المجال الصحي مع مرضى السرطان

(المعيقات والمسهلات المرتبطة بممارسة النشاط البدني بين الناجيات من سرطان الثدي في الأراضي الفلسطينية)

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المشرف المحلي/ د. أسماء الامام

Dr Asma Imam

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يقوم باحثون من جامعة إيست أنجليا / المملكة المتحدة وجامعة القدس / فلسطين بعمل بحث بعنوان : (المعيقات والمسهلات المرتبطة بممارسة النشاط البدني بين الناجيات من سرطان الثدي في الأراضي الفلسطينية) وذلك كجزء من رسالة الدكتوراة للباحثة اسراء حمدان .
تعمل الاستاذة اسراء حمدان محاضر في دائرة العلاج الطبيعي في جامعة القدس/ فلسطين وكذلك تكمل دراستها لنيل درجة الدكتوراة في جامعة ايست انجليا / انجلترا .

اذا كنت بحاجة إلى مزيد من المعلومات، يرجى الاتصال على الاستاذة إسراء حمدان على أرقام العمل في :

- جامعة القدس (0568600590/022791243) أو ارسال ايميل على البريد الإلكتروني على ehamdan2@staff.alquds.edu.
-

نشكركم على قراءة هذه المعلومات والنظر في المشاركة في هذا البحث.

- **ما هو الغرض من هذا البحث؟**

الغرض من هذا البحث هو استكشاف لماذا تقوم الناجيات من سرطان الثدي بممارسة النشاط البدني او عدم ممارسته في الأراضي الفلسطينية من وجهة نظرهن كنساء ناجيات من مرض السرطان .
وسوف يستكشف البحث أيضا وجهات نظر الأطباء وأطباء الأورام ومقدمي الرعاية الصحية في المستشفيات ومراكز إعادة التأهيل فيما يتعلق باهمية ممارسة النشاط البدني للناجيات من سرطان الثدي وما هي المعيقات والمسهلات لمشاركتهن من وجهة نظرهم كمهنيين وذلك عن طريق اجراء استمارة اولا لمعرفة بعض المعلومات المتعلقة بعملكم وخبرتكم في مجال السرطان ثم اجراء مقابلة معكم في الوقت الذي ترونه مناسبا .

آراءكم حول هذه المشكلة مهمة. حيث اننا نود أن نعرف ما ذا تعتقدون أنه قد يعيق أو يسهل الناجيات من سرطان الثدي ليكونوا نشطين جسديا بعد الانتهاء من علاج السرطان.
سوف تساعدنا ارائكم و وجهات نظركم كثيرا على فهم أفضل السبل لتحسين مستوى النشاط البدني بين الناجيات من سرطان الثدي، وبالتالي تحسين نوعية حياتهن .

- لا توجد إجابات صحيحة أو خاطئة على أي من الأسئلة. إنها آرائكم الخاصة التي نهتم بها.

- **هل يتعين عليكم المشاركة؟**

- لا، الأمر متروك لكم تماما لاتخاذ قرار المشاركة . إذا أردتم المشاركة فنحن ممتنون لكم مع التاكيد أنه يمكنكم الانسحاب في أي وقت دون إبداء سبب.

إذا قمتم بالانسحاب، قبل قيامنا بعملية التحليل فانه يمكننا حذف ردودكم ولن يتم الكشف عن اي معلومات منكم بتاتا . لكن بعد هذه النقطة، لن يكون من الممكن فصل ردودكم ومع التاكيد انه لن يتم الكشف عن هويتكم بتاتا فنحن لن نحتاج الى اسمائكم بالاضافة الى ان جميع الاجوبة سرية بحتة ولغرض البحث العلمي فقط لا غير .

- **هل هناك أي مخاطر محتملة مع هذا البحث؟**

لا توجد هناك مخاطر للمشاركة في هذا البحث . فالباحثة سوف تطلب منك المشاركة في المكان الذي تشعرفيه بالراحة والوقت الذي تشعر أنه مناسب لأوقات عملكم . حيث أن الباحثة مستعدة للقاءكم في اماكن عملكم .

- **ما هي الفوائد المحتملة للمشاركة؟**

البيانات التي سنحصل عليها من مشاركتكم سوف تعطينا رؤى هامة من شأنها أن تستخدم لتحسين مستوى النشاط البدني في المرحلة المقبلة من تطورها للناجين من مرض السرطان .

- **ما هي تكلفة مشاركتك في الدراسة؟**

لن تكونوا مسؤولين عن اي تكلفة ، حيث ان الباحثة سوق تصل الى أماكن عملكم بعد الاتفاق المسبق بينكم وقبل موعد المقابلة ب 24 ساعة .

- **هل سوف يُدفع لك للمشاركة في هذه الدراسة؟**

لن يُدفع لك للمشاركة في هذه الدراسة فالمشاركة طوعية بحتة .

- **ماذا لو كان هناك مشكلة؟**

إذا كان لديك أي شكاوى حول الطريقة التي تم التعامل معكم بها أو شعرتم بأي ضرر أثناء البحث سيتم معالجة الامر بمهنية كاملة ، حيث انه يمكنكم الاتصال بالباحثة في أي وقت (المعلومات في بداية هذه الورقة) الاستاذة إسراء حمدان لمناقشة هذه المسألة أو يمكنكم الاتصال بالدكتورة أسماء الامام إما على رقم العمل (022799234) أو مراسلتها على البريد الالكتروني aimam@staff.alquds.edu

- **ماذا لو لم أكن أرغب في الاستمرار في البحث ؟**

كما ذكرنا سابقا فان المشاركة طوعية تماما ولديكم الحق في الانسحاب من هذا البحث بدون أي سبب، ولن يكون لذلك أي آثار سلبية على مهنتكم بتاتا .

شكرا جزيلا على تخصيص الوقت لقراءة نموذج الموافقة هذا.
إذا اخترت المشاركة، فسيتعين عليك التوقيع على نموذج الموافقة المرفق .

Appendix iii: Consent Form / Women after Breast cancer

University of East Anglia

Informed Consent

Date of interview |__|__|-|__|__|-|__|__|__|__| (DD-MM-YYYY)

Participant Identification Number: | |

Project Title: “*Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals at the Palestinian Territories: An Exploratory* Study”

Researcher: Esra’ Hamdan (PhD Student) e.hamdan@uea.ac.uk ;ehamdan2@staff.alquds.edu

Primary Supervisor: Dr Jane Cross J.Cross@uea.ac.uk

Secondary Supervisor: Dr Toby Smith Toby.Smith@uea.ac.uk

Local supervisor: Dr Asma Imam aimam@staff.alquds.edu

Name of Participant: ______________________________________

Please initial

I have read and understood the participant information sheet (PIS)	
I understand I can ask any additional questions if I need to.	
I understand that I have been asked to explore what are the factors that could affect the level of physical activity among breast cancer survivors in my opinion in a one to one semi-structured interview	
I agree to also complete a survey asking for: my demographic information (e.g. age, address, profession, experience) and further opinions on the physical activity and cancer.	
I understand that I will be audio recorded during the semi-structured interview	
I understand that while information gained during the study may be published, I will not be identified and all data will remain confidential.	
I agree to anonymised quotes being used in publications and presentations.	

I understand my right to withdraw, without giving a reason up until the point that the data are analysed.	
I agree to take part in the study.	

One original copy of this form should be completed. The original should be stored in the investigator site file. A photocopy should be made of the original and given to the participant

Name of participant Date Signature

Researcher Date Signature

(Person taking consent) (In full, i.e. 01 January 2017

نموذج موافقة للمشاركة في دراسة بحثية Consent Form

University of East Anglia

رقم تعريف المشارك : (   )

يوم اجراء المقابلة : |__|__|-|__|__|-|__|__|__|__|(اليوم – الشهر – السنة)   -

-

(المعيقات والمسهلات المرتبطة بممارسة النشاط البدني بين الناجيات من سرطان الثدي في الأراضي الفلسطينية)

الموافقة على المشاركة في الدراسة
لقد قرأت الوصف أعلاه من هذه الدراسة. وقد تمت الاجابة على جميع أسئلتي. وأنا أعلم أنه يمكنني ان ارفض المشاركة أو الانسحاب من الدراسة في أي وقت.

أعطي موافقتي بحرية على المشاركة في هذه الدراسة.
أنا أفهم أنه من خلال التوقيع على هذا النموذج فانا اوافق على المشاركة في الدراسة. وقد تلقيت نسخة من هذا النموذج لاخذها معي.

لقد قرأت وفهمت ورقة نموذج الموافقة على المشاركة في هذه الدراسة البحثية	
أنا أفهم أنني يمكن أن أطرح أي أسئلة إضافية إذا كنت بحاجة إلى ذلك.	
أنا أفهم أنني قد طلب مني استكشاف ما هي العوامل التي يمكن أن تؤثر على مستوى النشاط البدني بين الناجيات من سرطان الثدي من وجهة نظري و رأيي في مقابلة شخصية	
أوافق أيضا على اكمال استمارة يطلب فيها : معلوماتي الديموغرافية (مثل العمر والجنس والمهنة والخبرة العملية في علاج مرض السرطان في الاراضي الفلسطينية ...) وآراء إضافية حول النشاط البدني ...	
أنا أفهم أنني سوف يتم تسجيل الصوت خلال المقابلة لاغراض التحليل سابقا	
أنا أفهم أن المعلومات المكتسبة خلال الدراسة قد تنشر، و لن يتم تحديد نتائجي الشخصية وستبقى سرية	
أوافق على وضع اقتباسات من مقابلتي ولكن بشكل (مقتبسة من مجهول الهوية) قد تستخدم في المنشورات والعروض التقديمية في المستقبل .	
أفهم حقي في الانسحاب دون إبداء الأسباب.	
أوافق على المشاركة في الدراسة.	

اسم المشارك /
التوقيع والتاريخ

بيان موافقة الشخص الحاصل على الموافقة
أشهد بأنه تم الشرح للمشارك في البحث بشكل كامل ومناسب عن طبيعةالدراسة البحثيةالمذكورة أعلاه وقد قدمت الاجابة على أي سؤال كان لديه.
توقيع الباحث الرئيسي التاريخ

Appendix 4-iv: Consent Form / Oncologists & Health Care Professionals

University of East Anglia

Informed Consent

Date of interview |__|__|-|__|__|-|__|__|__|__| (DD-MM-YYYY)

Participant Identification Number: | |

Project Title: "Barriers *Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals at the Palestinian Territories: An Exploratory Study*"

Researcher: Esra' Hamdan (PhD Student) e.hamdan@uea.ac.uk ; ehamdan2@staff.alquds.edu

Primary Supervisor: Dr Jane Cross J.Cross@uea.ac.uk

Secondary Supervisor: Dr Toby Smith Toby.Smith@uea.ac.uk

Local supervisor: Dr Asma Imam aimam@staff.alquds.edu

Name of Participant: ______________________________________

I have read and understood the participant information sheet (PIS)	
I understand I can ask any additional questions if I need to.	
I understand that I have been asked to explore what are the factors that could affect the level of physical activity among breast cancer survivors in my opinion in a one to one semi-structured interview	
I agree to also complete a survey asking for, age, address, professional, experience) and further opinions on physical activity and cancer.	
I understand that I will be audio recorded during the semi-structured interview	
I understand that while information gained during the study may be published, I will not be identified and my personal results will remain confidential.	
I agree to anonymised quotes being used in publications and presentations.	
I understand my right to withdraw, without giving a reason up until the point, the data is analysed.	
I agree to take part in the study.	

One original copy of this form should be completed. The original should be stored in the investigator site file. A photocopy should be made of the original and given to the participant

Name of participant Date Signature

Researcher Date Signature

(Person taking consent) (In full, i.e. 01 January 2017

University of East Anglia

جامعة القدس
Al-Quds University

نموذج موافقة للمشاركة في دراسة بحثية Consent Form

University of East Anglia

- رقم تعريف المشارك : (   )

يوم اجراء المقابلة : |__|__|-|__|__|-|__|__|__|__|(اليوم – الشهر – السنة) -

-

(المعيقات والمسهلات المرتبطة بممارسة النشاط البدني بين الناجيات من سرطان الثدي في الأراضي الفلسطينية)

الموافقة على المشاركة في الدراسة

لقد قرأت الوصف أعلاه من هذه الدراسة. وقد تمت الاجابة على جميع أسئلتي. وأنا أعلم أنه يمكنني ان ارفض المشاركة أو الانسحاب من الدراسة في أي وقت.

أعطي موافقتي بحرية على المشاركة في هذه الدراسة.

أنا أفهم أنه من خلال التوقيع على هذا النموذج فانا اوافق على المشاركة في الدراسة. وقد تلقيت نسخة من هذا النموذج لاخذها معي.

لقد قرأت وفهمت ورقة نموذج الموافقة على المشاركة في هذه الدراسة البحثية	
أنا أفهم أنني يمكن أن أطرح أي أسئلة إضافية إذا كنت بحاجة إلى ذلك.	
أنا أفهم أنني قد طلب مني استكشاف ما هي العوامل التي يمكن أن تؤثر على مستوى النشاط البدني بين الناجيات من سرطان الثدي من وجهة نظري و رأيي في مقابلة شخصية	
أوافق أيضا على اكمال استمارة يطلب فيها : معلوماتي الديموغرافية (مثل العمر والجنس والمهنة والخبرة العملية في علاج مرض السرطان في الاراضي الفلسطينية ...) وآراء إضافية حول النشاط البدني ...	
أنا أفهم أنني سوف يتم تسجيل الصوت خلال المقابلة لاغراض التحليل سابقا	
أنا أفهم أن المعلومات المكتسبة خلال الدراسة قد تنشر، و لن يتم تحديد نتائجي الشخصية وستبقى سرية	
أوافق على وضع اقتباسات من مقابلتي ولكن بشكل (مقتبسة من مجهول الهوية) قد تستخدم في المنشورات والعروض التقديمية في المستقبل .	
أفهم حقي في الانسحاب دون إبداء الأسباب.	
أوافق على المشاركة في الدراسة.	

اسم المشارك /

التوقيع التاريخ

بيان موافقة الشخص الحاصل على الموافقة

أشهد بأنه تم الشرح للمشارك في البحث بشكل كامل ومناسب عن طبيعةالدراسة البحثيةالمذكورة أعلاه وقد قدمت الاجابة على أي سؤال كان لديه.

توقيع الباحث الرئيسي التاريخ

Appendix v (1) Survey &Interview Script / Women after Breast Cancer

Project: "*Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals at the Palestinian Territories: An Exploratory Study*"

Researchers from the University of East Anglia (UEA), United Kingdom are gathering views about the "***Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals at the Palestinian Territories***" as part of a PhD Project for Miss Esra' Hamdan, who is a Physiotherapist working also at Al-Quds University /Palestine.

- **Participant Identification Number: --------------------------------**
- **<u>Personal Information</u>**
- **Age:**
  - **Below 40** ☐ **40-50** ☐ **50-60** ☐ **60-70** ☐ **above 70** ☐
- **Marital Status:**
  - **Single** ☐ **Married** ☐ **Widow** ☐ **Divorced** ☐
- **Occupation:**
  - **Housewife** ☐ **Worker** ☐ **Retired** ☐
- **Living Status:**
  - **Live alone** ☐ **with family** ☐
- **Area of Living:**
  - **City** ☐ **Village** ☐ **Refugee Camp** ☐ **Bedouin Community** ☐
- **Level of Education:**
  - **High School** ☐ **College** ☐ **University** ☐ **Higher Education** ☐ **Other** ☐ **Please specify ……………………….**
- **Religion: Muslim** ☐ **Christian** ☐ **Others;** ☐ **Please specify ------**
  - **Fill up the IPAQ (International Physical Activity Questionnaire)**

Appendix v (2) International Physical Activity Questionnaire (IPAQ)

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE/ (August 2002)

SHORT LAST 7 DAYS SELF-ADMINISTERED FORMAT

FOR USE WITH YOUNG AND MIDDLE-AGED ADULTS (15-69 years)

The International Physical Activity Questionnaires (IPAQ) comprises a set of 4 questionnaires. Long (5 activity domains asked independently) and short (4 generic items) versions for use by either telephone or self-administered methods are available. The purpose of the questionnaires is to provide common instruments that can be used to obtain internationally comparable data on health–related physical activity.

Background on IPAQ

The development of an international measure for physical activity commenced in Geneva in 1998 and was followed by extensive reliability and validity testing undertaken across 12 countries (14 sites) during 2000. The final results suggest that these measures have acceptable measurement properties for use in many settings and in different languages, and are suitable for national population-based prevalence studies of participation in physical activity.

Using IPAQ

Use of the IPAQ instruments for monitoring and research purposes is encouraged. It is recommended that no changes be made to the order or wording of the questions as this will affect the psychometric properties of the instruments.

Translation from English and Cultural Adaptation

Translation from English is supported to facilitate worldwide use of IPAQ. Information on the availability of IPAQ in different languages can be obtained at www.ipaq.ki.se.

If a new translation is undertaken we highly recommend using the prescribed back translation methods available on the IPAQ website. If possible please consider making your translated version of IPAQ available to others by contributing it to the IPAQ

website. Further details on translation and cultural adaptation can be downloaded from the website.

Further Developments of IPAQ

International collaboration on IPAQ is on-going and an International Physical Activity Prevalence Study is in progress. For further information see the IPAQ website.

More Information

More detailed information on the IPAQ process and the research methods used in the development of IPAQ instruments is available at www.ipaq.ki.se and Booth, M.L. (2000). Assessment of Physical Activity: An International Perspective. Research Quarterly for Exercise and Sport, 71 (2): s114-20. Other scientific publications and presentations on the use of IPAQ are summarized on the website.

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE (IPAQ)

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the last 7 days. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the vigorous activities that you did in the last 7 days. Vigorous physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

1. **During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling?**

____ days per week

No vigorous physical activities Skip to question 3

2. **How much time did you usually spend doing vigorous physical activities on one of those days?**

____ hours per day

____ minutes per day

Don't know/Not sure

Think about all the moderate activities that you did in the last 7 days. Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

3. **During the last 7 days, on how many days did you do moderate physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.**

____ days per week

No moderate physical activities Skip to question 5

4. **How much time did you usually spend doing moderate physical activities on one of those days?**

____ hours per day

____ minutes per day

Don’t know/Not sure

Think about the time you spent walking in the last 7 days. This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise, or leisure.

5. **During the last 7 days, on how many days did you walk for at least 10 minutes at a time?**

____ days per week

No walking Skip to question 7

6. **How much time did you usually spend walking on one of those days?**

____ hours per day

____ minutes per day

Don’t know/Not sure

7. **The last question is about the time you spent sitting on weekdays during the last 7 days. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.**

During the last 7 days, how much time did you spend sitting on a week day?

____ hours per day

____ minutes per day

Don’t know/Not sure

This is the end of the questionnaire, thank you for participating.

Appendix v (3) Topic Guide questions of women after breast cancer participants

- **<u>Can you tell me about yourself?</u>**

1) When were you diagnosed with breast cancer?
2) What kind of treatment protocol have you undergone so far for breast cancer?
3) When did you finish the treatment Protocol for Breast Cancer?
4) How do you perceive your weight? Can you tell me is it below, within, or above normal?
5) How do you describe your standard of living? Please if you do not feel to answer this question, we can skip it.
6) What do you know about physical activity for cancer survivors? Can you tell me more a bit about your thoughts of it?
7) Have you received any specific physical activity instruction or advice for breast cancer in the past? Yes, No?
    - If Yes, can you please explain more and how, from who?
    - If No, can you please explain why do you think you have not heard about it?
8) Do you do any kind of physical activities regularly? Yes, No
    - If yes, can you please explain how?
    - If no, can you please explain why?
    - Can you tell me more about it? Can you give me examples?
9) What do you think of physical activity for managing symptoms related to breast cancer?
10) Can you think of any factors that would prevent you from being engaged in any kind of physical activities?
11) What factors do you think would make it easier for you to be engaged in any kind of physical activities?
12) What your preferences are of any kind of physical activities?
13) Can you please tell me anything that you might find it important relating to the issue of physical activity and breast cancer experience? Can you tell me more about it? Can you give me examples?

الاستبانة للناجيات من سرطان الثدي

جامعة القدس
Al-Quds University
University of East Anglia

يقوم باحثون من جامعة إيست أنجليا / المملكة المتحدة وجامعة القدس / فلسطين بعمل بحث بعنوان : (المعيقات والمسهلات المرتبطة بممارسة النشاط البدني بين الناجيات من سرطان الثدي في الأراضي الفلسطينية) وذلك كجزء من رسالة الدكتوراة للباحثة اسراء حمدان .
تعمل الاستاذة اسراء حمدان محاضر في دائرة العلاج الطبيعي في جامعة القدس/ فلسطين وكذلك تكمل دراستها لنيل درجة الدكتوراة في جامعة ايست انجليا / انجلترا .

رقم تعريف المشارك : ----------------------------

الرجاء الاجابة على الاسئلة التالية :

أولا : بعض المعلومات الشخصية والمهنية

1. **العمر : ....**

☐ أصغر من 40 ☐ 50-40 ☐ 60-50 ☐ أكبر من 70

2. **الحالة الاجتماعية:**

عزباء ☐ متزوجة ☐ منفصلة ☐ أرملة ☐

3. **الدين :**

الاسلام ☐ المسيحية ☐ لا ارغب في الاجابة ☐ غير ذلك ☐ حددي ان اردتي --

4. **السكن :**

لوحدي ☐ مع زوجي ☐ مع اولادي ☐ غير ذلك ☐ حددي --------------

5. **مكان السكن :**

مدينة ☐ قرية ☐ مخيم ☐ مجمع بدوي ☐ غير ذلك : حددي ----------------

6. **مستوى التعليم :**

لم أتعلم / امية ☐ تعليم أساسي ☐ تعليم ثانوي ☐ تعليم جامعي ☐

☐ غير ذلك : حددي ---------------

7. **المهنة :**

أعمل حاليا ☐ عملت سابقا ☐ لم اعمل مطلقا ☐ ربة منزل ☐

8. العمل غير مدفوع الاجر (مساعدة الزوج او اخرون في الزراعة والبيع ..الخ)

أعمل حاليا ☐ عملت سابقا ☐ لم اعمل مطلقا ☐

9. رجاء .. اعطاء لمحة عن طبيعة العمل سواء أكان مدفوع الاجر ام لا

....

.

10. الوضع الاقتصادي

سيء ☐ وسط ☐ جيد ☐ جيد جدا ☐

معلومات حول الوضع الصحي والنشاط البدني :

1. التامين الصحي :

حكومي ☐ وكالة الغوث ☐ خاص ☐ لا يوجد تأمين ☐

2. كيف تعتبرين صحتك بشكل عام بعد شفاؤك من مرض سرطان الثدي ؟

جيدة جدا ☐ جيدة ☐ مقبولة ☐ ضعيفة ☐

3. الامراض والمشاكل الصحية التي تعانين منها (ويمكن الاشارة لاكثر من خيار)

الضغط ☐ السكري ☐ هشاشة العظام ☐ مشاكل في القلب ☐

غير ذلك : حددي ---------------

4. كيف تقيمين وضعك الصحي الحالي بالمقارنة مع ما كان بعد اصابتك بمرض سرطان الثدي مباشرة وقبل بدء العلاج ؟

أفضل ☐ نفس الشيء ☐ أسوأ ☐ أسوأ بكثير ☐

5. هل تقومين بأي نشاطات بدنية خلال اليوم

أجل بشكل طبيعي ☐ أجل بشكل محدود ☐ لا ☐ غير ذلك ☐

شكرا جزيلا لكم على مشاركتنا هذه المعلومات القيمة عن وضعكم الصحي والبدني /

الرجاء اكمال استبانة النشاط البدني الدولية

استبانة النشاط البدني الدولية (يوليو 2014)

لقياس مستوى النشاط البدني في الأيام السبعة الماضية (للشباب والكبار 15-69 سنة)

الصيغة المختصرة للاستبانة، للاستخدام عن طريق التعبئة الشخصية

تتضمن استبانة النشاط البدني الدولية (IPAQ) أربع مجموعات من الاستبانات؛ صيغة مطولة (تتكون من 5 حقول مستقلة من الأنشطة البدنية)، وصيغة مختصرة (مكونة من 4 بنود عامة). لكل صيغة من الصيغتين استبانتان، إحداها للاستخدام بواسطة الهاتف، والأخرى للاستخدام الذاتي (يتم تعبئتها من قبل الشخص نفسه). إن هدف هذه الاستبانات هو توفير أداة مشتركة يمكن من خلال استخدامها الحصول على بيانات عن مستوى النشاط البدني المرتبط بالصحة، قابلة للمقارنة دولياً.

خلفية عن استبانة النشاط البدني الدولية

بدأت عملية بناء مقياس دولي للنشاط البدني في مدينة جنيف في عام 1998م، وتبع ذلك في عام 2000م إجراء اختبارات مكثفة لصدق المقياس وثباته، شملت 12 دولة (14 موقعاً). ولقد أظهرت النتائج النهائية أن المقاييس المستخدمة تمتاز بخواص قياس مقبولة، لاستخدامها في أماكن متعددة وبلغات مختلفة، مع صلاحيتها للاستعمال في الدراسات الوطنية لمعرفة شيوع ممارسة النشاط البدني لدى السكان.

استخدام استبانة النشاط البدني الدولية

يُحث على استخدام استبانة النشاط البدني الدولية لمراقبة مستوى النشاط البدني، ولغرض البحث العلمي. ويوصي بعدم إحداث أي تغيير في ترتيب الأسئلة أو في الكلمات المستخدمة، لأن ذلك يؤثر في الخصائص السيكومترية للأداة.

الترجمة من اللغة الإنجليزية والملاءمة الثقافية

إن ترجمة استبانة النشاط البدني الدولية من اللغة الإنجليزية إلى لغات أخرى أمر يستحق التأييد، مما يسهل استعمالها على نطاق واسع. ويمكن الحصول على المعلومات المتعلقة بتوفر الاستبانة الدولية للنشاط البدني بلغات مختلفة من الموقع التالي: www.ipaq.ki.se، وفي حالة الشروع في ترجمة الاستبانة، فإننا نوصي بشدة أن يتم استخدام طريقة الترجمة العكسية (Back translation) الموضحة على موقع الاستبانة الإلكتروني. فضلاً، إذا كان ممكناً، ضع في الاعتبار إتاحة النسخة المترجمة من الاستبانة الدولية للآخرين، وذلك بوضعها في الموقع الإلكتروني، ويمكن الحصول على معلومات إضافية حول الترجمة والملاءمة الثقافية من خلال موقع استبانة النشاط البدني الدولية.

إدخال البيانات وترميزها

ملحق مع إجابات كل سؤال من أسئلة استبانة النشاط البدني الدولية رموز مقترحة للمتغيرات والمدى المتوقع للإجابات، لتسهيل عملية إدخال البيانات والتعامل معها، وللمساعدة في عملية تدريب القائمين على إجراء المقابلات، ويوصي بأن يتم بالضبط تسجيل الإجابة الفعلية للمجيب، فعلى سبيل المثال: " 120 دقيقة " تكتب 120 في خانة الدقائق، وفي حالة الإجابة بساعتين، فتكتب 2 في خانة الساعات، أما في حالة كون الإجابة " ساعة ونصف " فتكتب على أساس 1 في عامود الساعات، و 30 في عامود الدقائق.

تطورات استبانة النشاط البدني الدولية

إن التعاون الدولي حول استبانة النشاط البدني الدولية مستمر، وحالياً يتم إنجاز دراسة دولية حول شيوع ممارسة النشاط البدني. ولمزيد من المعلومات، يمكن الرجوع إلى الموقع الإلكتروني لاستبانة النشاط البدني الدولية.

معلومات إضافية

معلومات إضافية حول إجراءات استبانة النشاط البدني الدولية وطرق البحث www.ipaq.ki.se يتوافر في الموقع الإلكتروني التالي:
Booth, M. L. (2000). Assessment of Physical Activity: An International المستخدمة في بنائها، ويمكن الرجوع للمرجع التالي:
كما يتوفر، على الموقع الإلكتروني، Perspective. Research Quarterly for Exercise and Sport, 71 (2): s 114-20.
عرض موجز لبحوث أخرى نشرت أو ألقيت في مؤتمرات علمية، حول استخدام استبانة النشاط البدني الدولية.

الصيغة المختصرة لاستبانة النشاط البدني الدولية، للاستخدام بواسطة التعبئة الشخصية

نحن مهتمون بمعرفة أنواع الأنشطة البدنية التي يقوم بها الأفراد كجزء من حياتهم اليومية. الأسئلة التالية ترتكز حول الوقت الذي قضيته في ممارسة أنشطة بدنية خلال الأيام السبعة الماضية. فضلاً أجب عن كل سؤال من الأسئلة التالية حتى وإن كنت تعتبر نفسك غير نشيط بدنياً. فكر في الأنشطة البدنية التي تمارسها خلال عملك، وكجزء من أعمالك المنزلية، وأثناء تنقلك من مكان لآخر، وتلك التي تقوم بها في وقت فراغك بغرض الترويح أو التمرين أو الرياضة.

الآن فكر في جميع الأنشطة البدنية التي تتطلب جهداً بدنياً مرتفع الشدة والتي قمت بممارستها خلال الأيام السبعة الماضية. الأنشطة البدنية مرتفعة الشدة هي تلك الأنشطة التي تجعل تنفسك أعلى بكثير من المعتاد، مثل رفع أشياء ثقيلة، أو حرث الأرض، أو ركوب الدراجة بسرعة عالية، أو الجري، أو ممارسة كرة القدم، أو كرة السلة، أو السباحة، أو نط الحبل. فكر فقط في الأنشطة البدنية مرتفعة الشدة التي قمت بممارستها لمدة 10 دقائق على الأقل في كل مرة.

1- خلال الأيام السبعة الماضية، كم يوماً مارست فيه نشاطاً بدنياً مرتفع الشدة؟

___ **يوم في الأسبوع**

☐ **لا أقوم بأي نشاط بدني مرتفع الشدة.** ← **انتقل مباشرة إلى السؤال رقم 3**

2- في المعتاد، كم من الوقت قضيته في ممارسة نشاط بدني مرتفع الشدة في أحد تلك الأيام؟

___ **ساعة في اليوم**

___ **دقيقة في اليوم**

☐ **لا أدري/ أو غير متأكد.**

الآن فكر في جميع الأنشطة البدنية التي تتطلب جهداً بدنياً معتدل الشدة والتي قمت بممارستها خلال الأيام السبعة الماضية. الأنشطة البدنية معتدلة الشدة هي تلك الأنشطة التي تجعل تنفسك أعلى من المعتاد إلى حداً ما، ويمكن أن تتضمن رفع أشياء خفيفة، أو ركوب الدراجة بسرعة عادية، أو ممارسة كرة الطائرة، أو ممارسة تنس الطاولة، أو كنس المنزل، أو غسل الملابس يدوياً، أو غسل السيارة. لا تحسب المشي ضمن هذه الأنشطة. مرة أخرى، فكر فقط في الأنشطة البدنية معتدلة الشدة التي قمت بممارستها لمدة 10 دقائق على الأقل في كل مرة.

3- خلال الأيام السبعة الماضية، كم يوماً مارست فيه نشاطاً بدنياً معتدل الشدة؟

___ **يوم في الأسبوع**

☐ **لا أقوم بأي نشاط بدني معتدل الشدة.** ← **انتقل مباشرة إلى السؤال رقم 5**

4- في المعتاد، كم من الوقت قضيته في ممارسة نشاط بدني معتدل الشدة في أحد تلك الأيام؟

___ **ساعة في اليوم**

___ **دقيقة في اليوم**

☐ لا أدري/ أو غير متأكد.

الآن فكر في الوقت الذي قضيته في المشي خلال الأيام السبع الماضية، ويتضمن ذلك المشي إلى العمل، والمشي أثناء العمل، وفي البيت، وخلال انتقالك من مكان لآخر، أو أي نوع من أنواع المشي بغرض الترويح أو الرياضة.

5- خلال الأيام السبعة الماضية، كم يوماً مارست فيه **المشي** لمدة 10 دقائق على الأقل في كل مرة؟

____ يوم في الأسبوع

☐ لا أقوم بممارسة المشي إطلاقا. ← **انتقل مباشرة إلى السؤال رقم 7**

6- في المعتاد، كم من الوقت قضيته في ممارسة المشي في أحد تلك الأيام؟

____ ساعة في اليوم

____ دقيقة في اليوم

☐ لا أدري/ أو غير متأكد.

الآن فكر في الوقت الذي قضيته جالساً خلال الأيام السبعة الماضية. أحسب وقت الجلوس في العمل، وفي المنزل، وفي الدراسة، وفي الترفيه. من الممكن أن يتضمن ذلك وقت الجلوس على المكتب، وأثناء العمل على الكمبيوتر، وأثناء زيارتك لصديق، وأثناء القراءة، والجلوس أو الاستلقاء لمشاهدة التلفزيون.

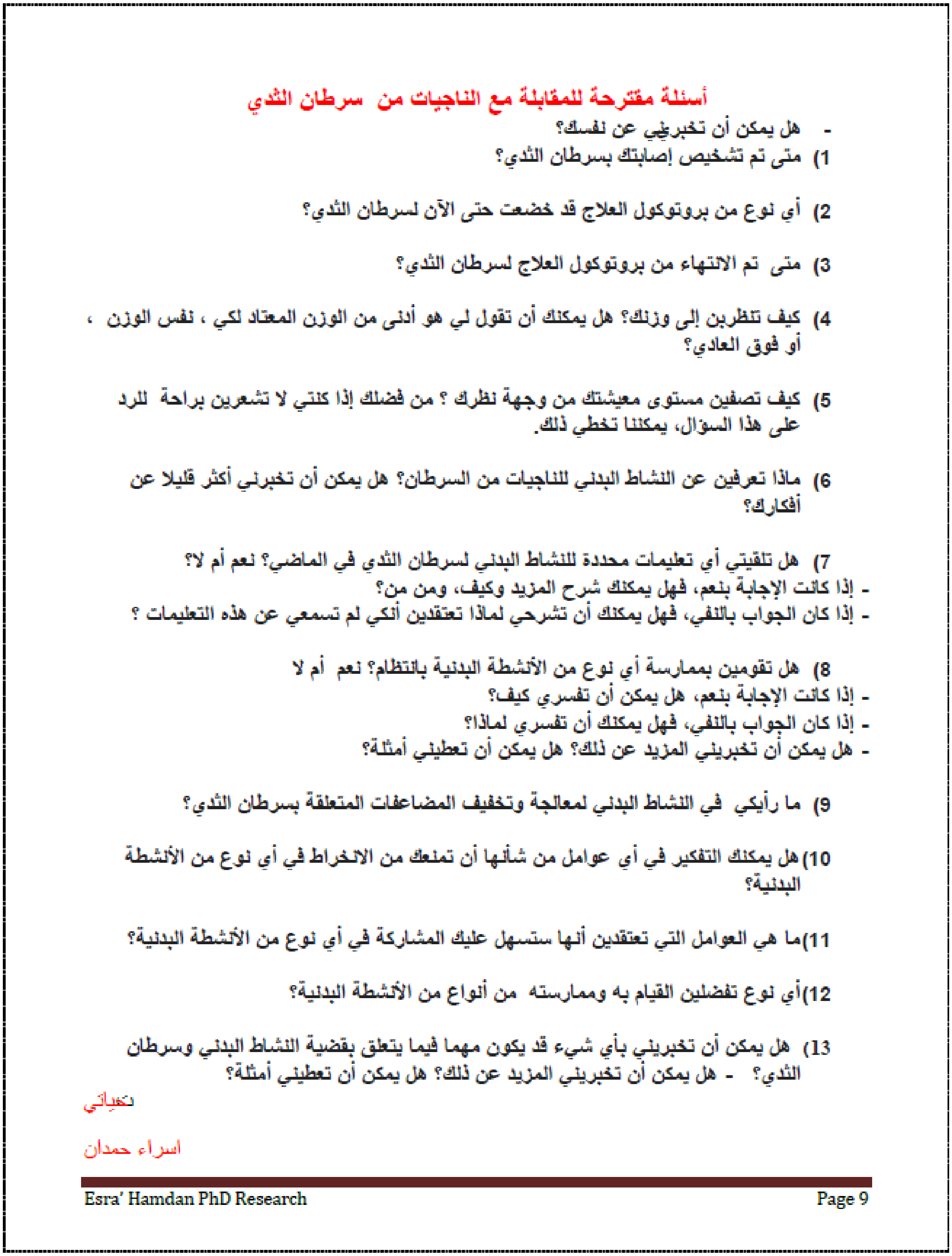
7- خلال الأيام السبعة الماضية، كم من الوقت قضيته جالساً في أحد هذه الأيام من غير أيام الإجازة الأسبوعية؟

____ ساعة في اليوم

____ دقيقة في اليوم

☐ لا أدري/ أو غير متأكد.

(نهاية الاستبانة، شكراً لمشاركتكم)



أسئلة مقترحة للمقابلة مع الناجيات من سرطان الثدي

- هل يمكن أن تخبريني عن نفسك؟

1) متى تم تشخيص إصابتك بسرطان الثدي؟

2) أي نوع من بروتوكول العلاج قد خضعت حتى الآن لسرطان الثدي؟

3) متى تم الانتهاء من بروتوكول العلاج لسرطان الثدي؟

4) كيف تنظرين إلى وزنك؟ هل يمكنك أن تقول لي هو أدنى من الوزن المعتاد لكي ، نفس الوزن ، أو فوق العادي؟

5) كيف تصفين مستوى معيشتك من وجهة نظرك ؟ من فضلك إذا كنتي لا تشعرين براحة للرد على هذا السؤال، يمكننا تخطي ذلك.

6) ماذا تعرفين عن النشاط البدني للناجيات من السرطان؟ هل يمكن أن تخبرني أكثر قليلا عن أفكارك؟

7) هل تلقيتي أي تعليمات محددة للنشاط البدني لسرطان الثدي في الماضي؟ نعم أم لا؟
- إذا كانت الإجابة بنعم، فهل يمكنك شرح المزيد وكيف، ومن من؟
- إذا كان الجواب بالنفي، فهل يمكنك أن تشرحي لماذا تعتقدين أنكي لم تسمعي عن هذه التعليمات ؟

8) هل تقومين بممارسة أي نوع من الأنشطة البدنية بانتظام؟ نعم أم لا
- إذا كانت الإجابة بنعم، هل يمكن أن تفسري كيف؟
- إذا كان الجواب بالنفي، فهل يمكنك أن تفسري لماذا؟
- هل يمكن أن تخبريني المزيد عن ذلك؟ هل يمكن أن تعطيني أمثلة؟

9) ما رأيكي في النشاط البدني لمعالجة وتخفيف المضاعفات المتعلقة بسرطان الثدي؟

10) هل يمكنك التفكير في أي عوامل من شأنها أن تمنعك من الانخراط في أي نوع من الأنشطة البدنية؟

11) ما هي العوامل التي تعتقدين أنها ستسهل عليك المشاركة في أي نوع من الأنشطة البدنية؟

12) أي نوع تفضلين القيام به وممارسته من أنواع من الأنشطة البدنية؟

13) هل يمكن أن تخبريني بأي شيء قد يكون مهما فيما يتعلق بقضية النشاط البدني وسرطان الثدي؟ - هل يمكن أن تخبريني المزيد عن ذلك؟ هل يمكن أن تعطيني أمثلة؟

تحياتي

اسراء حمدان

Appendix vi (1): Survey / Oncologists & Health Care Professionals

Project: "*Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals at the Palestinian Territories: An Exploratory Study*"

Researchers from the University of East Anglia (UEA), United Kingdom are gathering views about the "***Factors affecting Physical Activity Participation in Women after Breast Cancer & Promotion among Oncology Health Care Professionals at the Palestinian Territories***" as part of a PhD Project for Miss Esra' Hamdan, who is a Physiotherapist working also at Al-Quds University /Palestine.

- **Participant Identification Number: --------------------------------**

✚ **<u>Personal Information</u>**

- **Occupation:**
  - **Oncologist** ☐ **GP** ☐ **Nurse** ☐ **PT** ☐ **OT** ☐ **Other** ☐
- **Gender:**
  - **Male** ☐ **Female** ☐
- **Age:**
  - **Below 30** ☐ **30-40** ☐ **40-50** ☐ **50-60** ☐ **Above 60** ☐
- **Level of Education:**
  - **Collage** ☐ **University** ☐ **Higher Education** ☐
- **Graduation Country:**
  - **Local Uni** ☐ **Arab Uni** ☐ **International Uni** ☐ **Mixed** ☐
- **Years of Experience in practice:**
  - **Less than 5 years** ☐ **5-10 years** ☐ **11-20 years** ☐ **More than 20 years** ☐
- **Health Working Sector:**
  - **Governmental** ☐ **Non -Governmental** ☐ **UNRWA Clinic** ☐
    Health Worker Committee ☐ **Other Sector** ☐ **please specify: ----------**
- **Type of Working Place:**
  - **Inpatient /Hospital** ☐ **Outpatient Clinic** ☐ **Community Clinic** ☐

Other Sector ☐ **please specify: ------------------------------**

- **Did you have any specific training in Cancer field: Yes** ☐ **No** ☐

If Yes, please specify : --

Appendix vi (2): Topic Guide / Oncologists & Health Care Professional

Topic Guide

Can we discuss your experience in breast cancer in specific.

How many patients with breast cancer do you see per month/year?

At what stage of condition usually are the patients that you see or treat?

Do you refer those patients to any other health care-professional?

If Yes: can you please explain what the purpose is?

If No: can you please explain why not?

What are your recommendations for cancer survivors?

- Can you tell me more about it? Can you give me examples, especially for breast cancer survivors?

What do you think of physical activity for cancer patients & survivors?

Do you recommend PA to your cancer patients?

If yes, can you please explain more and how?

If No, can you please explain why do you think you it is not?

Can you be more specific for breast cancer survivors?

At what stage would you recommend those cancer patients or survivors to start physical activity practice? Can you explain why?

Are there any factors that would affect your promotion or recommendation of PA to your cancer patients, survivors and especially women after breast cancer?

Can you tell me more about it? Can you give me examples?

What do you think would make it easier for cancer survivors to be engaged in any kind of physical activities?

Do you think Palestinian traditions & beliefs would affect breast cancer survivor's uptake of physical activity? Yes / No

Can you please explain more and how?

Can you please tell me any other issues that you might find it important relating to physical activity and breast cancer experience?

الاستبانة لأخصائي وأطباء الأورام والعاملين في الحقل الطبي

جامعة القدس
Al-Quds University
University of East Anglia

يقوم باحثون من جامعة إيست أنجليا / المملكة المتحدة وجامعة القدس / فلسطين بعمل بحث بعنوان : (المعيقات والمسهلات المرتبطة بممارسة النشاط البدني بين الناجيات من سرطان الثدي في الأراضي الفلسطينية) وذلك كجزء من رسالة الدكتوراة للباحثة اسراء حمدان .
تعمل الاستاذة اسراء حمدان محاضر في دائرة العلاج الطبيعي في جامعة القدس/ فلسطين وكذلك تكمل دراستها لنيل درجة الدكتوراة في جامعة ايست انجليا / انجلترا .

رقم تعريف المشارك : ----------------------------

الرجاء الاجابة على الاسئلة التالية :

أو لا – بعض المعلومات الشخصية والمهنية

1. المهنة :

أخصائي أورام ☐ طبيب عام ☐ ممرض ☐ معالج طبيعي ☐ معالج وظيفي

غير ذلك ☐ حدد/ي لو سمحتم ----------------------

2. الجنس :

ذكر ☐ أنثى ☐

3. العمر :.........................

☐ أصغر من 30 ☐ 40-30 ☐ 50-40 ☐ 60-50 ، أكبر من 60 -------

4. مكان السكن الأصلي :

مدينة ☐ قرية ☐ مخيم ☐ غير ذلك : حدد/ي لو سمحتم ---------------

5. مكان العمل الحالي :

مؤسسة حكومية ☐ مؤسسة غيرحكومية ☐ عيادة تابعة لوكالة غوث اللاجئين ☐

غير ذلك : حدد/ي لو سمحتم ---------------

Esra' Hamdan PhD Research Page 1

6. مستوى التعليم :

☐ دبلوم ☐ تعليم جامعي ☐ تعليم متخصص ما بعد البكالرويوس ☐

☐ غير ذلك : حددا/ي لو سمحتم ----------------

7. مكان دولة التعليم :

جامعة محلية (فلسطين) ☐ جامعة عربية ☐ جامعة أجنبية ☐

غير ذلك : حددا/ي لو سمحتم ----------------

8. سنوات الخبرة بشكل عام

☐ أقل من 5 ☐ 10-5 ☐ 20-11 ☐ 30-20 ، أكثر من 30 -------

9. هل حصلت على أي تدريب محدد في مجال السرطان: نعم ام لا

- إذا كانت الإجابة بنعم، فهل يمكنكم ذكر نوع التدريب سواء كان بشهادة او لا : ------------

10. عدد سنوات الخبرة في العمل مع مرضى السرطان :

حددا/ي لو سمحتم بالسنوات ----------------

11. مكان العمل مع مرضى السرطان :

مستشفى حكومي ☐ مركز متخصص لاورام السرطان ☐ عيادة تابعة لوكالة غوث اللاجئين ☐

مؤسسة تأهيل ☐ مركز خاص ☐ عيادة تابعة للرعاية الصحية ☐

غير ذلك : حددا/ي لو سمحتم ----------------

12. رجاء .. اعطاء لمحة عن طبيعة العمل بشكل مختصر

....

شكرا جزيلا لكم على مشاركتنا هذه المعلومات القيمة

أسئلة مقترحة للمقابلة لأخصائي وأطباء الأورام والعاملين في الحقل الطبي

جامعة القدس
Al-Quds University
University of East Anglia

هل تستطيع ان تحدثني عن نفسك؟

- ستتحدث قليلا عن الخبرة في التعامل مع مرضى سرطان الثدي .

1) كم عدد المرضى الذين تراهم شهريا و يعانون من سرطان الثدي / او سنويا بشكل تقريبي ؟
2) في أي مرحلة من المراحل عادة تعالج المرضى من سرطان ؟
3) هل تحيل بمعنى تعطي تحويلة لهؤلاء المرضى إلى أي رعاية صحية مهنية أخرى؟
- إذا كانت الإجابة بنعم: فهل يمكنكم أن توضحوا ما هي هذه الجهات ؟ وما هو الغرض من ذلك ؟
- إذا كانت الإجابة "لا": فهل يمكنك أن توضح لماذا لا؟
4) ما هي توصياتك للناجيات من سرطان الثدي ؟
5) - هل يمكن أن تخبرني المزيد عن ذلك؟ هل يمكن أن تعطيني أمثلة، خاصة بالنسبة للنساء الناجيات من سرطان الثدي؟
6) هل تعتقد أن النشاط البدني مهم لمرضى السرطان والناجين بشكل عام ؟ نعم ام لا
- إذا كانت الإجابة بنعم، فهل يمكنك شرح ذلك بشكل أكثر وكيف؟ رجاء
- إذا كان الجواب بالنفي، فهل يمكنك أن تفسر لماذا تعتقد أنه ليس مهم ؟
- هل يمكن أن تكون أكثر تحديدا للناجيات من سرطان الثدي؟
7) في أي مرحلة سوف توصي هؤلاء المرضى أو الناجين بضرورة أن تبدأ بممارسة النشاط البدني؟ هل يمكنك أن تشرح لماذا؟
8) هل هناك أي عوامل تمنع الناجين من السرطان ونساء سرطان الثدي من الانخراط في أي نوع من الأنشطة البدنية؟
- هل يمكن أن تخبرني المزيد عن ذلك؟ هل يمكن أن تعطيني أمثلة؟
9) ما هو برأيك ما يجعل من السهل على الناجين من السرطان المشاركة في أي نوع من الأنشطة البدنية؟
10) هل تعتقد أن التقاليد والمعتقدات الفلسطينية ستؤثر على استيعاب الناجيات من سرطان الثدي من النشاط البدني؟ نعم ام لا
- إذا كانت الإجابة بنعم، فهل يمكنك شرح ذلك بشكل أكثر وكيف؟ رجاء
- إذا كان الجواب بالنفي، فهل يمكنك أن تفسر لماذا تعتقد أن المجتمع لا يؤثر ؟
11) هل يمكن أن تخبرني عن اي قضايا أخرى قد تجد أنها مهمة وتتعلق بالنشاط البدني وسرطان الثدي؟

تحياتي الحارة
إسراء حمدان

Appendix vii: Example of Transcripts of women after breast cancer participants

اليوم : الاربعاء / 14-2-2018

المكان: مستشفى المطلع / العيادات الخارجية

ابتدا اللقاء الساعه 11 صباحا و>لك بعد الاتفاق المسبق مع المريضة على الموعد مسبقا حيث انه تم اخذ الموافقة وتحديد الموعد قبل اسبوع عندما تم اللقاء التعريفي من قبل منسقة قسم السرطان في المستشفى .

- الباحثه : السلام عليكم

*المشاركة: وعليكم السلام

- الباحثة: كيف الحال ؟ كيف صحتك اليوم؟

* المشاركة : الحمدلله بخير – ماشي الحال

- الباحثة : مرة اخرى للتعريف عن نفسي / انا الاستاذة اسراء حمدان / اقوم حاليا بدراسة الدكتوراة في جامعة ايست انجليا في انكلترا وموضوع الدراسة كما هو مذكور في ورقة المعلومات التي تم اعطاءك اياها سابقا عن المعيقات والمسهلات المرتبطة بممارسة النشاط البدني بين الناجيات من سرطان الثدي في الاراضي الفلسطينية . والهدف هو استكشاف العوامل التي من المحتمل ان تؤثر في ممارسة الانشطة البدنية من وجهة نظرك كمتعافية من سرطان الثدي وتعيشين في الاراضي الفلسطينية .

للتاكيد لا توجد اي اجابات صحيحة او خاطئة ، انها ارائك وتجربتك والتي نهتم بمعرفتها .

اذا ما زلتي تريدين المشاركة في اللقاء والدراسة وقراتي وفهمتي موضوع الدراسة ، هل يمكنك التوقيع على نموذج الموافقة ؟

*المشاركة : نعم ، لقد قرات الوصف وانا اعلم انه يمكنني ان ارفض المشاركة او الانسحاب في اي وقت من المقابلة .

اين اوقع ؟

- الباحثة / هنا ..

- تم التوقيع من قبل الطرفين على نموذج الموافقة
- الباحثة: بالطبع لن نذكر الاسم في البحث وسيبقى الامر سري تماما

-الباحثة : سنبدا المقابلة ببعض الاسئلة للحصول على بعض المعلومات الشخصية اذا لا يوجد لديك مانع

* المشاركة : لا يوجد اي مشكلة بتاتا

- الباحثة: كم العمر ؟

* المشاركة: 30 عام / انا من مواليد العام 1988

- الباحثة: الحالة الاجتماعية ؟

* المشاركة: متزوجة

-الباحثة : ما هي ديانتك ؟ وتستطيعين عدم الاجابة اذا اردتي؟

* المشاركة : الاسلام (تلبس حجاب ونقاب)

- الباحثة : مع من تسكنين ؟

* المشاركة : في بيتنا مع زوجي واولادي .

-الباحثة : كم عدد اولادك؟

* اثنان وفي عمر صغير

-الباحثة: ما هو مكان السكن ؟

*المشاركة: مجمع بدوي في ضواحي القدس

- الباحثة: ما هو مستوى التعليم الذي وصلتي اليه؟

* المشاركة: انهيت الثانوية العامة .

- الباحثة: هل تعملين ؟ ما هي مهنتك الحالية؟

* المشاركة: لا اعمل فانا ربة منزل فقط.

-الباحثة: وهل هنالك اي عمل غير مدفوع الاجر تقومين به كمساعدة الزوج او الاخرين كالزراعة وغيرها ؟

* المشاركة: لا ، فانا فقك اهتم بالبيت وبالاطفال .

- الباحثة: هل بامكاني السؤال عن الوضع الاقتصادي ؟ واذا كان السؤال يضايقك بمكنك عدم الاجابة .

* المشاركة : الوضع الاقتصادي سيء فزوجي لا يعمل عمل ثابت وبالتالي نحن نحتاج لمساعدة اهله وهذا شيء يضايقني كثيرا .

- الباحثة : اسفة لسماع ذلك ، وهل أثر وضعك الاقتصادي على علاجك ؟

* المشاركة : بشكل مباشر لم يؤثر ، لكن المواصلات والتنقلات ما بين المستشفيات مكلفة وانا لا اريد ارهاق زوجي كثيرا ولكن أثر سلبا على نفسيتي فانا اصبحت لا اريد الخروج من البيت لكي لا اكلف زوجي

- الباحثة : سننتقل الان للسؤال عن بعض المعلومات عن وضعك الصحي بشكل عام وكذلك عن قيامك ببعض الانشطة البدنية
- الباحثة: ما هو نوع التأمين الصحي الذي لديكم ؟

*المشاركة: حكومي وشامل

- الباحثة: كم تعتبرين صحتك بشكل عام الان ؟ خاصة بعد شفاءك من مرض سرطان الثدي ؟

* المشاركة: بشكل عام مقبولة ، ليست جيدة وليست سيئة

-الباحثة: وكيف تقيمين وضعك الصحي الحالي بالمقارنة بصحتك بعد تشخيصك بالسرطان وقبل بدء رحلة العلاج ؟

* المشاركة : اعتبر صحتي أسوأ .

-الباحثة : لماذا ؟

--الباحثة: هل تعانين من اي امراض او مشاكل صحية عدا مرض سرطان الثدي (مثل ضغط او سكري او هشاشة عظام او مشاكل في القلب او غيرها)

*المشاركة: لا اعاني من اي امراض ، الحمدلله . لكن وضعي بشكل عام اختلف كثيرا عما كنت عليه قبل العلاج ! -
الباحثة: هل أثر ذلك على عاداتك اليومية ؟

* المشاركة: كثيرا ، فقد تراجعت قدراتي الجسدية بشكل عام .

الباحثة: هل تقومين باي نشاطات بدنية خلال اليوم ؟.

*المشاركة: اقوم فقط بالاعمال المنزلية المعتادة وبشكل محدود . اصبحت اتعب من أقل مجهود .

الباحثة : شكرا جزيلا لكي على هذه المعلومات .

هل تعبتي او نستطيع الانتقال للشق الاخر من الاسئلة ؟

المشاركة : لا لم اتعب ، نشتطيع المتابعة

الباحثة: تمام ، هذا الجزء عبارة عن اسئلة من استبانة عالمية لتقييم مستوى النشاط البدني بشكل عام والهدف من استعماله ان نقيم مستوى النشاط البدني لدي المتعافيات الفلسطينيات

هل نبدا ؟

المشاركة : نعم .

الباحثة : تمام .

IPAQ questionnaire

1- خلال الايام السبعة الماضية ، كم يوما مارستي فبه نشاط مرتفع الشدة ؟
المشاركة: 2 أيام بالاسبوع
2- في المعتاد، كم من الوقت قضيتيه في ممارسة نشاك بدني مرتفع الشدة في احد تلك الايام؟
المشاركة : تقريبا 1-2 ساعة في اليوم / اكثر من 60 دقيقة
3- خلال الايام السبعة الماضية ، كم يوما مارستي فبه نشاط بدني معتدل الشدة؟
المشاركة: 5 ايام بالاسبوع
4- في المعتاد، كم من الوقت قضيتيه في ممارسة نشاك بدني مرتفع الشدة في احد تلك الايام؟

المشاركة: 2 ساعة

5- خلال الايام السبعة الماضية، كم يوما مارستي في المشي لمدة 10 دقائق على الالقل في كل مرة؟
المشاركة: 5 ايام بالاسبوع
6- في المعتاد، كم من الوقت قضيتيه في ممارسة المشي في احد تلك الايام؟
المشاركة: لا ادري فانا غير متاكدة
7- خلال الايام السبعة الماضية، كم من الوقت قضيته جالسا في اخد هذه الايام من غير ايام الاجازة الاسبوعية ؟
المشاركة : متوسك الوقت تقريبا 2 ساعة في اليوم الواحد جالسة من غير اوقات النوم .

الباحثة: شكرا جزيلا لكي على هذا المعلومات
هل تعبتي ؟
المشاركة: لا
الباحثة: هل ننتقل الى الجزء الاخير من المقابلة ؟
المشاركة: نعم
الباحثة: شكرا لتعاونك

المشاركة: العفو

الباحثة: - هل يمكن ان تخبريني عن بعض الامور عن مرضك

1- الباحثة: متى تم تشخيصك بالمرض ؟

المشاركة: قبل سنة تقريبا ، في اواخر عام 2016

الباحثة: وكيف اكتشفتي المرض؟

المشاركة: كنت ارضع ابني الثاني وشعرت بكتلة في صدري الايمن

ذهبت لوالدتي وسالتها عن الموضوع فاخبرتني ان علينا التوجه للطبيبة حيث انه قد تكون هذه الكتلو من الحليب .

الطبيبة النسائية فحصتني وحولتني لاعمل صورة فخص الثدي المامو

وعندما عملت المامو في شهر 11-2016 قاموا بعدها بالمستشفة بطلب عمل عينة من الكتلة وعندما ظهرت نتيجة العينة وضحت انها كتلة سرطانية

2- الباحثة: اي نوع من بروتوكول العلاج قد خضعتي لخ حتى الان من سرطان الثدي؟
المشاركة: بدات العلاج بعمل عملية جراحية وتم استئصال الثدي الايمن بشكل كامل في المستشفى وذلك بشهر 12 ال 2016
ثم بعد ذلك بدات بالعلاج الكيماوي وقد اخذت 8 جلسات كيماوي وتم الانتهاء منها بشهر 6 من العام 2017
وبعدها تم تحويلي لاخذ جلسات اشعاع واخذت 33 جلسة وانهيت العلاج بشهر 9 من العام 2017
والان انا على العلاج الهرموني

3- الباحثة: متى تم الانتهاء من بروتوكول العلاج ؟
المشاركة : تم الانتهاء بشهر 9 ال 2017 ، اي قبل 4 شهور لكن الان انا على العلاج الهرموني

4- كيف تنظرين الى وزنك ؟ هل هو ادنى ، نفس الوزن او فوق العادي؟
المشاركة: وزني الان اكثر من المعتاد . وزني المعتاد كان حوالي ال67 كيلو والان وزني حوالي 74 كيلو اي زدت تقربا 7 كيلو .
الياحثة: هل انتي متضايقة من هذه الزيادة ؟
المشاركة: نعم ، فانا اشعر ببعض التعب وانقطاع النفس خاصة عند القيام ببعض الاعمال المنزلية
5- سؤال مستوى المعيشة تم الاجابة عليه سابقا
6- الياحثة : ماذا تعرفين عن النشاط البدني للناجيات من سرطان الثدي؟
المشاركة : الصراحة ان المتعارف عليه ان في الحركة بركة والحركة افضل بشكل عام للجسم ليبقى نشيطا
7- هل تلقيتي اي تعليمات محددة للنشاط البدني لسرطان الثدي في الماضي؟ نعم ام لا؟
المشاركة: نعم ، تلقيت تعليمات معينة من قبل الدكتور الجراح في المستشفة التي عملت بها العملية .
الباحثة/ اين عملتي العملية؟
المشاركة: في مستشفى المطلع في القدس
الباحثة: هل يمكن ان تعطيني امثلة ؟
المشاركة: تم اعطائنا تعليمات لتحريك اليد وتحت والتنفس والمشي والتنقل
الباحثة: وهل التزمتي بهذه التعليمات؟
المشاركة: بشكل عام ، نعم لكن
الباحثة/ لكن ماذا؟ مللت بالنهاية
8- الياحثة: ما رايك بالنشاط بالدني لمعالجة او تخفيف المضاعفات المتعلقة بسرطان الثدي؟

المشاركة: له اثر ايجابي بتخفيف الالم والتاقلم مع الوضع

9- الباحثة: هل تقومين بممارسة اي نوع من الانشطة البدنية بانتظام ؟ نعم ام لا ؟
المشاركة :نعم
الباحثة: اعطيني امثلة؟
المشاركة: اقوم مثلا بشغل البيت يوميا
الباحثة: وهل تقومين باي نشاطات خارج المنزل؟ هل تقومين بالمشي مثلا ؟
المشاركة: لا
الباحثة : لماذا لا ؟
المشاركة ؟ زوجي لا يحب ان اخرج من البيت بدونه

10-الباحثة: هل يمكنك التفكير في اي عوامل من شانها ان تمنعك بالمشاركة في اي نوع من الانشطة البدنية ؟
المشاركة: نحن نعيش في مخيك بدوي محافظ فالبيئة محافظة اكثر من اللازم فانا لا استطيع الخروج والمشي لوحدي فهو ممنوع فيجب ان اكون برفقة زوجي
كذلك انا لدي طفلين صغيرين لاقوم بالعناية بهما ولا اجد الوقت الكافي بعدها للخروج
واحيانا لا اجد الدافع للمشي فانا اتعب
كذلك فكلام الناس كثيرا وخاصة كلام ام زوجي فهي لا يعجبها ان اترك اطفالي واخرج للمشي او التنزه وانا اتعب ولا استطيع حملهما معي

11-الباحثة: ما هي العوامل التي تعتقدين انها ستسهل عليكي المشاركة في اي نوع من الانشطة البدنية؟
المشاركة: الدعم النفسي والاجتماعي اهم شي فانا احتاج له

الباحثة : وماذا ايضا؟

المشاركة : اعتقد ان الدافع مهم جدا لكن بنفس الوقت بحاجة الى تعزيزه من المحيط

12-الباحثة: اي نوع تفضلين القيام به وممارسته من انواع الانشطة البدنية؟
المشاركة: احب المشي بشكل عام في ساعات الغروب

13- الباحثة: خل يمكن ان تخبرني عن اي شيء مهم يتعلق باهمية النشاط البدني وسركان الثدي؟
المشاركة: اعتقد ان هنالك قلة وعي من المجتمع باهمية الحركة والنشاط لمرضى السرطان وخاصة من البيئة المحيطة
كذلك كلام الناس كثير ونظرتهم بشفقة لي مما يمنعني من الانخراط في النشاطان الاجتماعية تجنبا للدخول في نقاشات جانبية
بنفس الوقت انا بحاجة لوقت مع نفسي ولا اجده بسبب مسؤلياتي كزوجة وكام لطفلين
الباحثة : شكرا جزيلا لكي ولوثتك ولتعاونك
اتمنى لك الصحة الجيدة والسعادة يارب
العفو

انتهى اللقاء بعد تقريبا 90 دقيقة

Participant No. 9 WABC / Interview transcription

Day: Wednesday, 17-2-2018
Location: / Outpatient Clinic at Augusta Victoria Hospital (AVH)

The meeting started at 11 am upon the arrangement that was made between the survivor and the hospital's cancer coordinator (the gatekeeper at AVH) to participate in this interview.

The appointment was made a week ago when the survivor was in the hospital and show an interest to participate in the research.

- Interviewer: Salamalikom (Hello), how are you?
- **P**articipant: am ok, elhamdulleh (thank god)

- I: I will start by introducing myself. I am Esra', am a physiotherapist by my background, and I was working as an instructor at Al-Quds currently studying for a doctorate degree at the University of East Anglia in England and the subject of my study, as mentioned in the information sheet that was given to you earlier is about the (barriers and facilitators of physical activity among breast cancer survivors in the Palestinian Territories). The aim is to explore the factors that are likely to affects the level of physical activity from your point of view as a breast cancer survivor who lives at the Palestinian Territories. Your views about this issue are important. We wish to learn what you think might hinder or facilitate breast cancer survivors to be physically active upon completion of cancer treatment.
- I: Just to let you know, there are no right or wrong answers to any of the questions of the interview. It is your own opinion that we are interested in. So, please feel free to express your feelings and experience.
- I: Have you read and understand the participants' information sheet? You have all the right to withdraw at any point as well as don't answer any of the questions that you feel you don't want to.
  ***P**: Yes, I have read the patent information sheet and I know that I can refuse to participate or withdraw at any time of the interview.
  - I: Can you please read this; it is a consent form that you need to sign if you would like to be included in this research.
  * P: yes, Tamam (sure).
  * P: Where do I sign?
  - I: Here.
  - **Signed by both on the consent form**
  - I: Of course, we will not mention any names in the research and it will remain completely confidential.
  * P: Thanks, although I don't mind.
  - I: We will start the interview with some questions about your personal information if you do not mind.
  * P: There is no problem at all.
  - I: How old are you?

* P: 30 years / I was born in 1988.

- I: What is your social status?

* P: Married

- I: I did not ask about the religion as the participate is wearing hijab

- I: With whom do you live?

*P: In our home with my husband and my children.

- I: How many children do you have?

* P: Two boys at a young age. The older is 4 years and the youngest is almost two years. Actually, I discovered my breast cancer while I was breastfeeding my youngest baby.

- I: oh I see. Would like to talk about it now or can we come to this later.

*P: we can discuss it later.

- I: Where do you live? What is your place of residence?

* Participation: I live near Jerusalem. I live in the Bedouin community between Jericho and Jerusalem. Do you know it?

- I: yes, I do know it. I come cross it sometimes when I go to Jericho.

- I: What is your level of education?

* P: I finished high school. I wish I could go to university, but this is the highest level that a girl in our community can get, especially 10 years ago when I finished my high school.

- I: Do you work?

* P: I do not work. Am a housewife only.

- I: Have you ever worked? I mean, is there any unpaid work that you do as a help to the husband or others?

* P: No, I do only care about the house and children.

- I: Can I ask about your economic situation? You can give no answer if the question will bother you.

* P: Well, the economic situation is bad, my husband does not have an occupation. He has no permanent job and no salary. Therefore, we need the help of his family and this is something that really get into my nervous a lot.

- I: Sorry to hear this, and is this situation have an impact on your health status or your treatment?

* P: Directly, it did not affect it. But, going to doctors, transportation between hospitals, medications are expensive and I do not like to bother my husband very much with my needs. To be honest with you, it had a negative impact on my psychological status that I think about our situation every minute and sometimes, I do not want to go out as not to put any extra costs to my husband.

- I: We will move now to ask for some information about your health in general and also about your physical activities.

-I: What type of health insurance do you have?

* P: Governmental insurance.

- I: How do you consider your health status in general now? Especially after you finish your breast cancer treatment protocol?

* P: Generally, I do say it is acceptable, not good but not bad.

- I: How do you assess your current health status if we compare it to your health after being diagnosed with cancer and before starting the treatment trip?

* P: can you explain the question more?
- I: ok sure, I thought it is a long question. So, how do you feel your health now if you compare it by your health before you know that you have a breast cancer?
* P: I considered my health worse.
- I: Why?
* P: I don't feel the same before
-I: Do you suffer from any diseases or health problems other than breast cancer (such as pressure or diabetes or osteoporosis or heart problems or other)
* P: No. I do not suffer from any diseases, thank God. But my health status generally is different from what I was before treatment!
-I: different in what way?
* P: I feel I have less stamina for everything.
- I: Does this affects your daily habits?
* P: Much, I feel that my physical abilities have generally declined.
- I: Do you do any physical activities during the day?
* P: I only do the usual household chores. I got tired of doing any tiny effort.
- I: oh, I see. By the way, how do you feel now?
- I: Are you tired, do you need a break or can we move to the other question?
* P: No, I did not get tired, we can follow up.
- I: Thank you so much for this. I really appreciate it. Please let me know when you are tired or stop me when you feel you cannot continue.
* P: I Will.
- I: This section is a set of questions from a global questionnaire to assess the level of physical activity in general and the purpose of its use is to evaluate the level of physical activity of Palestinian breast cancer survivor women
- I can we begin?
* P: Yes.
- I: TAMAM.

IPAQ questionnaire

1. **During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics? _____ days per week**
   *P: Yes, well, I think, 2 days per week.

2. How much time did you usually spend doing vigorous physical activities on one of those days? _____ hours per day _____ minutes per day / Don’t know/Not sure

Think about all the moderate activities that you did in the last 7 days. Moderate activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

- P: Approximately 1-2 hours per day

3. During the last 7 days, on how many days did you do moderate physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.
_____ days per week
*P: I do it like 5 days per week.

4. How much time did you usually spend doing moderate physical activities on one of those days? _____ hours per day _____ minutes per day
Don't know/Not sure
Think about the time you spent walking in the last 7 days. This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise, or leisure.
*P: almost 2 hours a day. I don't do any sport or exercise.

5. During the last 7 days, on how many days did you walk for at least 10 minutes at a time?
_____ days per week

*P: 5 days per week

6. How much time did you usually spend walking on one of those days?
_____ hours per day _____ minutes per day / Don't know/Not sure
- P: I do not know, I'm not sure how minutes per day, I don't count it .

The last question is about the time you spent sitting on weekdays during the last 7 days. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.
7. During the last 7 days, how much time did you spend sitting on a week day?
_____ hours per day _____ minutes per day / Don't know/Not sure
- P: don't know but approximately 2 hours per day sitting in non-sleep times. I have young children to look after them, so I keep on active.

- I: Thank you so much for this information.
  This is the end of the questionnaire, thank you for participating.

I: Are you tired?
***P: No**
- I: Can we come to the last part of the interview?
*** P: Yes**
- I: Thank you for your cooperation. I really appreciate it.

*** P: No worries**

- I: Let's talk then about yourself. Can you please tell me some things about yourself? Your illness? How did you find out about it? When was diagnosed with the disease? Please feel free to talk about whatever you feel it is ok to discuss it.

* P: well, oh, almost about a year ago, in late 2016.
- I: well, how did you discover that you have a breast cancer?
*P: I was breastfeeding my second son and I felt a lump in my right breast. I did not know what is it so, I went to my mother and asked her about it. She told me that we had to go to the doctor. We thought it is because am breastfeeding and it could be from the milk. But we never doubt that it could be something serious. There are no one in my family that has a breast cancer, besides, am too young.
Then, the gynecological female doctor examined me and refer me to do a mammogram as soon as possible. The mammogram was in last October 2016 and then the doctor refer me to do a biopsy from the mass. The results came back in November 2016 and it showed that I have a breast cancer.

Pause for a while, Then.

- I: do you feel ok or you want us to stop?

* P: Yes, am ok. We can continue.

- I: What kind of treatment protocol have you had so far in terms for the breast cancer?

* P: The treatment started with a surgery to my right breast. It was on December 2016.
- I: was it full or partial surgery?
*P: the doctor suggest that it is better to remove it all. So, I did. It was a full mastectomy
- I: By the way, which hand is your dominant one?

*P: well, it's the right hand, same side of the surgery.

- I: ok, and then?
* P: And then we began the chemotherapy sessions.
- I: how many sessions did you have?
* P: I took 8 sessions of chemotherapy.
- I: When did you finish your last chemotherapy session?
* P: it was completed by June of 2017. Exactly after Ramadan Finish.
- I: did you have any other treatment protocol?

*P: yes, I have also radiation therapy and now am on hormone therapy

-I: how many radiation sessions did you had?

*P: I had 33 sessions

- I: When did you finish it?

*P: it was on last September 2017

- I: and you are now on Hormone therapy?

*P: yes, am now on Hormone therapy for five years. And I have to do regular checkups every 3 months.

- I: So, to make sure, the treatment protocol was complete in September 2017 and we are now in February 2018, it means about 5- 6 months now.
* P: Yes, it was completed on September of 2017 but now I am on hormone therapy.

- I: How do you see your weight since you finished your treatment protocol? Is it the same weight or above normal or below normal?

*P: Well, I lost weight at the beginning, especially when I was diagnosed and after the surgery. But it begun to increase since I started the hormone therapy. My weight is now more than usual. My normal weight was about 67 kilos even after I give birth to my second child. But now my weight is about 74 kilos, which increased by about 7 kilos.

- I: Are you bothered by this increase?

* P: Yes, I feel sometimes breathlessness, especially when am doing some housework.

- I: but this could be due to fatigue, not only to your weight?

* P: yes, maybe. But I don’t want it to increase more than that.am still young. And am not eating that much, but I guess this is because of the hormone therapy.

- I: by the way, how is your diet?

* P: well, it is normal, nothing unusual.

- I: What kind of activities do you do and practice? What do you like? Prefer to do?

* P: I love doing embroidery in general.

- I: What about your level of physical activity? From the questionnaire we fill, how I general do you consider yourself? Are you an active person or less active or usual?

*P: well, I think am not active enough.

- I: What do you think of physical activity for breast cancer survivors?
  * P: Well, we all know the general popular proverb that says: there are blessings in the movement) so, it is better for the body to remain active
  - I: Have you received any specific instructions for the physical activity of breast cancer in the past? Yes or no?
  *P: Yes, to be honest. I received specific instructions from the doctor that did my breast cancer operation.
  - I: Good
  - I: by the way, where did you have the surgery?
  *P: in AVH hospital in Jerusalem

- I: was it general or specific? Can you please give me some examples of the instructions that you had?
*P: it was general instruction. For example, we were given instructions to move the hand, arm above shoulder, do breathing exercise and to, walk around. They told us to keep moving and be active
- I: How was your given those instruction? Verbally or did they give you a leaflet of instruction?
*P: it was only verbal instruction
- I: Did you have any physiotherapy session?
* P: yes, someone came and give us some instructions.
- I: what kind of instructions?
*P: same as what the doctor said. Move around and raise up your arm.
- I: Did you comply with these instructions? Did you do it back home?
* P: In general, yes but …
- I: But what?
* P: I feel tired so easily. I give up.
- I: What do you think of physical activity to treat or reduce the complications of breast cancer treatment?
*P: I do think it has a positive effect in general such as adapting to the situation.
- I: Are you doing any kind of physical activities regularly? Yes or no
*P: Yes
- I: Can you please give me some examples?
* P: For example, I do all the housework daily
- I: Are you doing any physical activities outside your home? Like do some walking for example?
* P: I don't go outside much.
- I: Why not? Can you think of any factors that would prevent you from participating in any kind of physical activities?
* P: Well, first, I have children to look after. Second, my husband does not like that I get out of the house without him or with someone else like my father, mother or mother in law.

- I: Ok I see. So, why you think someone must be with you?
* P: We live in a Bedouin community. It is too conservative environment that it is not acceptable for a young lady to go out and walk alone. I cannot go out and walk alone for no reason. I must be with my husband or others.
Also, people will start to talk about me if I go out from home too much. Especially, my mother in law, she does not like me to leave my children and go out for walking. And I cannot take them out with me for walking, as I get tired and I cannot carry them.

Finally, my mother in low only agree if I had I reason to leave my children with her but not every other day.

- I: what are those reasons?
* P: like going to doctor but no other things.
- I: Do you like to walk?

* P: Yes, but I cannot find the motivation to walk.

- I: What factors do you think will make it easier for you to participate in any kind of physical activity?

* P: I think the most important thing is the psychosocial support from my family, especially my husband.

-I: And what else?

* P: I think the motivation is very important but at the same time it needs to be strengthened from people around you.

- I: Can you tell me anything that comes to your mind about physical activity and breast cancer? Anything that we did not discuss or talked about?

* P: I think that there is a lack of awareness from the community of the importance of movement and activity for cancer patients, especially from the surrounding environment. People think that a cancer patient must stay at home and wait to die.

- I: is this still common in your community?

* P: yes, the first thing they say when they know that I have a cancer ,is you still young , who is going to look after your kids ? All of   their looks and gazes is full of sympathy and I hate it. The people reactions when they meet me and start asking about my health is affecting my psychological status in a negative way. Whether it is out of love or other reasons. That is why I don't like to be outside and engage in any social activities to avoid engaging in such discussions with people.

- I: So, what do you think about the Palestinian culture? How it is affecting your coping and your survivorship in a negative or a positive way?

- P: it is affecting me in a negative way

- I: How?

* P: Their over protection or over discussion other people’s issues is a bad influence in general.

- I: So, what do you do about it?

* P: Nothing, I just prefer to spend the time with myself inside my home.

-I: Is there anything else that you would like to add?

* P: I think not. We discuss almost everything

- I: Thank you so much for your patience and your cooperation. I really do appreciate it.

I wish you good health and happiness

The meeting ended after almost 90 minutes/Esra’ Hamdan

Appendix v/ iii: Example of Transcripts of HCP participants

- **Participant Identification Number: 2**

Day: Tuesday, 27-2-2018
Location: / Al-Watni- Governmental Hospital / Nablus

The meeting started at 12 pm upon the arrangement that was made between the researcher and the medical oncologists upon his request and free time.

The appointment was made a week ago when the researcher had talked to the doctor, he shown an interest to participate in the research.

- Interviewer: (Hello), how are you?
- **P**articipant: am ok, elhamdulleh (thank god)

- I: I will start by introducing myself. I am Esra', a physiotherapist by my background, and I was working as an instructor at Al-Quds currently studying for a doctorate degree at the University of East Anglia in England and the subject of my study, as mentioned in the participant information sheet that was given to you earlier is about the (barriers and facilitators of physical activity among breast cancer survivors in the Palestinian Territories). The aim is to explore the factors that are likely to affects the level of physical activity from the point of view of breast cancer survivor women, their families, health care providers and stakeholder at the Palestinian Territories. Your views about this issue are important. We want to know what you think might hinder or facilitate breast cancer survivors to be physically active upon completion of cancer treatment from your point of view as a medical oncologist.
- I: Well, there are no right or wrong answers to any of the questions of the interview. It is your own opinion that we are interested in. So, please feel free to express your experience.
- I: Have you read and understand the participants' information sheet? As it mentioned, you have all the right to withdraw at any point as well as you are free not to answer any of the questions that you feel you don't want to.
  ***P**: Yes, I have read the participants information sheet and I know that I can refuse to participate or withdraw at any time of the interview.
  - I: Can you please read this; it is a consent form that you need to sign if you would like to be included in this research.
  * P: yes,
  * P: Sure
  * P: Sign it
  - I: Sign.
  - **Signed by both on the consent form**

- I: Of course, we will not mention any names in the research and it will remain completely confidential.
* P: Thanks
- I: We will start the interview with some questions about your personal information if you do not mind.
* P: There is no problem at all.

- I: So, you are a Medical Oncologist.

- I: can I know your age?

* P: well, am 41 years old?

- I: and of course, you had finished a subspecialty in medicine. So from where did you graduated first? Which country? Was it local, Arab r international university?

*P: well, I was graduated from Ukraine.

- I: Where did you have your specific training in cancer field?

*P: it was in Italy. And it was for 2 years.

- I: how many years of experience in practice in general have you had?

* P : it is more than 15 years in general practice and more than 5 years in cancer field.

- I: and you are only working now in a Governmental hospital? Or you also work somewhere else?

* P: well, I do see patients and survivors in the outpatient / inpatient wards of this Governmental hospital. However, I have my own private clinic that patients come to see me for consultations.

- I: Please can you give us a general prescription of your work? Your experience in cancer?

* P: well, am a medical oncologist. I do see patients' pre, during and post treatment from the disease of cancer. I do physical examination, ask for other examinations such as a biopsy, lab examinations, and all other sorts of examination in order to give patients a provisional diagnosis of their status. Also, I write the chemotherapy treatment protocol (dose, type of chemo drugs and all sort of medications that patients' need). Moreover, I do write the referral for them for other hospitals such as refer them to Radiation treatment at Augusta Victoria Hospital/ Jerusalem.

- I: can you please be specific to your experience with breast cancer patients' and for the survivors in specific?

* P: Well, for the breast cancer patients I do the same as I told you before, however, for the survivors, I do see them regularly every three months to write them the Hormone therapy

(Tamoxifen) mainly, as well as to do regular check-ups like blood tests and mammogram and sometimes CT scan.

- I: can you please tell me how many patients with breast cancer do you see per month/year?
  *P: well, as you saw today and in the last weeks that you had been here at the hospital, I see between 30-40 patients during the day and am here at the oncology clinic for three days a week so it is about over 300 patients during the months... most of those are breast cancer patients and survivors. As you know breast cancer is the most common cancer among women in Palestine and those are the majority of patients that we saw here at our outpatient and chemotherapy clinic at Al-Watni Hospital.

- I: At what stage of condition usually are the patients that you see or treat?
  *P: we saw patients at all stages, from stage 0 at the beginning of the diagnosis till stage 4 or end stage when they need a hospitalization during their end stage to look after them since we don't have a palliative care hospital or community canters to take care of those patients.
  - I: what about the ages?
  * P: I saw patients from all ages but mostly they are above 18 years old till their 80 s.
  - I: Do you refer those patients to any other health care-professional?

  ● If Yes: can you please explain what the purpose is? ● If No: can you please explain why not?

  * P: well, yes, I do refer cancer patients to other health care providers. Mostly I do refer them to a social worker, a psychologist in order to discuss their adverse effects of chemotherapy, especially loss of hair and other physical problems. Also, I do refer them to a nutrition or diet specialists as they loss their appetite during chemotherapy treatment or they gain weight during their hormone therapy.

  -I: am sorry to ask this, but why don't do you refer patients or survivors to a physiotherapist?

  * P: first I don't know what physiotherapists can do for our cancer patients and second, we don't have a specialist physiotherapist here in the hospital or in the country that can deal with cancer patients

  - I : so, is that you don't know what are the role of physiotherapy with cancer patients or you don’t trust physiotherapists that are working in our country ?

  * P: to be honest, I do have a lack of knowledge about the role of physiotherapy with cancer patients as well as I don't know how the physiotherapists can deal with cancer patients here.

  - I: ok, that’s totally fine. But we have a very good role with cancer patients and survivors, especially, in decreasing their treatment adverse effects such as decrease their limited functional activities, increase their strength and so improve their quality of life. Beside the fact that we can work on their level of physical activity which can be a factor in decreasing the DVT risks as well as the rate of cancer recurrence according to new researches regarding the importance of physical activity and cancer, especially with breast cancer.

* P: to be honest, I didn't know that before.

- I: Can you please tell me what your recommendations for cancer survivors are? Can you tell me more about it?

* P: well, I do give them simple instruction of taking care of their diet, try to be active Sometimes I try to recommend them just to take it easy in order not to have any complications such as spinal cord compression or DVT or lymphedema. And to report any complications that might have to the doctors or nurses.

- I: Ok, that is good recommendation. Can I ask you if you recommend them to be physically active? And do you think that physical activity is important for cancer patients & survivors?

- If yes, can you please explain more and how?
- If No, can you please explain why do you think you it is not?

*P: yes, I do recommend our cancer patients to be active as much as possible and try to be involved in their social activities. Of Course, I do believe that physical activity is very important to cancer patients as it will help them in their survivorship phase as well as increase their level of independence.

- I: can you please give me some examples about the physical activity that you recommended for breast cancer survivors?

- P: I do tell them to walk, try not to hold or carry out heavy thing in the affected arm as this may increase the lymphedema at that arm.
  - I: At what stage would you recommend those patients or survivors should start physical activity practice?
- P: I do give them the instructions all along the treatment but basically at the survivorship bot during the chemotherapy treatment.
  - I: Can you explain why?
- P : well, you know during chemotherapy , their immune response decline as well as their stamina and they will be tired ,so I do encourage them to be active as much as they can .However, I do give them instruction to walk during their survivorship in order to prevent the complication of hormone therapy.
  - I: How do you give them those instructions? Written or verbal?
- P: it is only verbal recommendations as we don't have any written instructions, especially in the governmental hospitals.
- I; Can you think of any factors that would prevent cancer survivors and Breast cancer women from being engaged in any kind of physical activities?
- P: well, I do believe that there are many factors, first of all their age of the breast cancer survivors.

- I: what about the age? You mention that age affecting the level of physical activities for breast cancer survivors?

- P : well, you see older women they have no responsibilities and so they can have more free time to go out and be active but younger women , especially those who have young children to look after them .
  - Can you tell me more about it? Can you give me examples?
- P : Older women , let's say in their 60s will be generally less active than younger women in their 40s , however, when it comes to breast cancer survivor , we can notice that there can be a variation as younger women want to spend all her time with her kids and this can vary according to their life style and education level .
  - I: so, you say there is a difference in women according to their life style and level of education? Can you please explain more?
- P: I can notice that women living in a village is more active than women who are living in the cities as those women have space to walk or work, especially in northern part of West Bank such as here in Nablus. Also, level of education sometimes help us in explaining more the importance of being active.

  I: What do you think of the barriers that may affect breast cancer survivors to be physically active?
- P: as I mentioned their life style is affected by their priorities, as women have other things to care about such as their children, homes and all the family. Also, we don't have a places and the infrastructure to walk in an open areas, especially in the refugee camps.
  - I: so, you think that the environment where the breast cancer survivor live is affecting their lifestyle behaviour?
- P: Yes, for sure, the place where women lives as well as their age is the most significant factors that affecting their physical activity levels. You see in the refugee camps there are no place to exercise neither footpath to walk. Whereas in cities, you can go to gym or can walk sometimes outside your home though it is still hard as there are no infrastructure in our cities. on the contrary, in villages, women can walk as they have enough spaces.
  - I: have you notices any difference on the level of physical activities between single and married women?
- P: I did not notice that but I can see that single women feels lonely and depressed more than married women, especially older single women.
  - I: is there any other barriers that you may think of?
- P: I guess the lack of recommendation can be a barrier. Sometimes also the lack of communication between health care providers, oncologist and breast cancer survivor can affect their level of physical activities.
  - I: why do you think there is a lack of communication and recommendation?
- P : you did notice the pressure of work , the shortage of staff as well as the shortage of time that we can afford as a staff for each patient and so we only have time to give basic treatment or discuss any consequences rather than give recommendation for physical activity . Am being honest with you.
  - I: thanks a lot for your honesty.

- I: Ok, what do you think would make it easier for cancer survivors to be engaged in any kind of physical activities?

- P: all the things we mention before, the level of education and awareness of the survivor, age, the priorities of the survivor.
  - I: Do you think Palestinian traditions & beliefs would affect breast cancer survivor's uptake of physical activity? Yes, No
  - If yes, can you please explain more and how?
  - If No, can you please explain why do you think you it is not?
- P: Of course, the Palestinian culture affects the survivorship of the cancer patients in general and the breast cancer survivor women in particular. Although things is improving but still some still think that cancer word means death and so , one should not do anything but waiting to die . Have you saw the lady she comes with her young girl, I tried my best to convince her to take up the chemotherapy sessions 3 years old when she came to see me. She was just holding this girl when she was a few months old and refused at the beginning the treatment. she only wanted to go home and wait to die. You see now she is on hormone therapy and she brings her daughter with her every time she visits the clinic to give her the tamoxifen so that I can see the girl. She feels grateful for me and I do like the small child as I saw her growing up.
  - I: Yes, I saw the patient and her daughter is so lovely. I could notice the relationship between you both. God bless you.
  - I: Can you please tell me any other issues that you might find it important relating to physical activity and breast cancer experience?
- P: of course, the most important issue that we have is the lack of time that staff spend with patients and survivors and this cause lack of communication as well lack of clarity of recommendations and all of that is due to shortage of staff first and shortage of training for this staff.
- Another issue is the Palestinian health care system that is not covering the physiotherapy service for cancer patients or the survivors which make it harder for survivors to get those kinds of information and recommendations from the physical therapists as they are mostly related to their job description.
  - I: what do you think we can do about these issues?
- P: I think we should work on doing either a training days or workshops. Also, we should increase the number of health care providers that are working with cancer patients. Moreover, we should try to establish a palliative care unit as well as focus on improving the psychological issues of the survivors.
  - I: you mention the training days? What do you think the aim for it?
- P: it is to for our staff to increase their awareness for the importance of physical activity with cancer patients and survivors to either maintain or improve their quality of life. Also, we could work on a leaflet that we should give it to patients and survivors with simple and clear instructions and recommendations regarding their health status, physical activity, complications and diet.

Meeting finished after almost 50 minutes /**Esra' Hamdan**