

Doctoral Thesis

An investigation into whether experiential avoidance acts as a mediator in the relationship between religious coping and depression in an adult Muslim population.

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Abstract

Background

Depression presents differently in Muslims (Sami & El-Gawad, 1995). Religious coping and experiential avoidance (EA) are ways of coping with depression in many populations and religions but how these manifest or interact in Muslims is unknown. The way individuals cope with stressors may lead to the development of depression (Beck, 1987b). Positive religious coping (PRC) and acceptance are adaptive forms of coping and correlate with better quality of life (Gardner, Krägeloh and Henning, 2014). Negative religious coping (NRC) and EA are maladaptive forms of coping correlating with depression (Hayes et al., 2004; Pargament Feuille & Burdzy, 2011). Islam fosters acceptance and positive action. An a priori prediction is that well-adjusted, practicing Muslims will engage in PRC and acceptance, whilst those engaging in NRC and EA will display more depressive symptoms.

Aims

To investigate whether religious coping and EA are implicated in the development of depression in Muslims. To date no study has addressed both constructs together in a Muslim sample. The study aimed to fill this gap and further the understanding of depression in Muslims.

Method

Participants were recruited from a community sample of Arabic-speaking Muslims in the United Kingdom. Data were collected with an Arabic questionnaire pack including EA, religious coping and depression measures.

Analysis

A cross-sectional, correlation and mediation design was adopted to test the hypotheses.

Results

NRC moderately, positively correlated with depression. EA strongly positively correlated with depression. PRC was not related to depression. EA mediated the relationship between NRC and depression.

Conclusion

EA could be a clinical target for depressed Muslims, e.g. using existing therapies like acceptance and commitment therapy (ACT; Hayes & Wilson 1994) or by incorporating Islamic concepts into other therapies like CBT to reduce NRC and increase acceptance. There is a need to develop standardised Arabic measures for use with this population.

Table of Contents

Abstract	ii
Table of Contents	iv
List of Tables and Figures	ix
Acknowledgements	x
1. Introduction	1
1.1 Chapter Overview	1
1.2 Beck's (1987b) Cognitive Model of Depression	1
1.3 Islam	3
1.4 The Islamic Self-Concept	5
1.5 Islam and Mental Illness	6
1.6 Depression in Muslims	8
1.7 Prevalence of Depression in Muslims	11
1.8 Coping	13
1.9 Religious Coping	15
1.10 Experiential Avoidance	18
1.11 Bridging the Gap Between Religious Coping and Experiential Avoidance	21
1.12 Systematic Review of the Literature	23
1.12.1 Selection criteria	23
1.12.2 Search strategy	24
1.12.3 Table of papers to be reviewed	29
1.12.4 Results of the literature review	33
1.12.4.1 Experiential avoidance and depression	34

1.12.4.2 Religious Coping and depression	36
1.12.5 Discussion of literature review findings	39
1.13 Clinical Implications	41
1.14 Summary and Rationale	42
1.15 Hypotheses	43
2. Method	45
2.1 Chapter Overview	45
2.2 Design	45
2.3 Ethical Approval	45
2.3.1 Ethical considerations	45
2.4 Procedure	47
2.4.1 Invitation	47
2.4.2 Data collection	48
2.4.3 Additional contact	49
2.5 Participants	49
2.5.1 Power and sample size	50
2.6 Measures	53
2.6.1 Brief RCOPE (Pargament et al., 1998)	55
2.6.2 Acceptance and Action Questionnaire-II (Bond et al., 2011)	55
2.6.3 The Hopkins Symptom Checklist (Derogatis et al., 1974)	56
2.6.4 Religiosity	58
2.6.5 Marlowe-Crown Social Desirability Scale, Short Form C (MC-SDS C; Reynolds, 1982)	58
2.6.6 Demographics	58

2.7 Planned Statistical Analysis	59
2.7.1 Hypothesis one: higher levels of negative religious coping will significantly correlate with higher symptoms of depression in an adult Muslim population.	60
2.7.2 Hypothesis two: higher levels of experiential avoidance will significantly correlate with higher symptoms of depression in an adult Muslim population.	60
2.7.3 Hypothesis three: higher levels of positive religious coping will significantly correlate with lower symptoms of depression in an adult Muslim population.	60
2.7.4 Hypothesis four: higher experiential avoidance will mediate the relationship between higher levels of negative religious coping and higher symptoms of depression in an adult Muslim population.	60
2.7.5 Exploratory analyses	62
3. Results	63
3.1 Chapter Overview	63
3.2 Preliminary Data Screening	63
3.2.1 Missing data	63
3.2.2 Testing for normality	64
3.3 Descriptive Data of Study Variables	65
3.3.1 Positive Religious Coping	65
3.3.2 Negative Religious Coping	66
3.3.3 Experiential avoidance	67

3.3.4 Depression	67
3.3.5 Social desirability	68
3.3.6 Religiosity	68
3.4 Demographic Data	69
3.5 Hypothesis Testing	71
3.5.1 Hypothesis one	71
3.5.2 Hypothesis two	71
3.5.3 Hypothesis three	72
3.5.4 Further correlational analyses	72
3.5.5 Hypothesis four	73
3.6 Exploratory Analyses	77
3.6.1 Social desirability as a confounding variable	77
3.7 Chapter Summary	79
4. Discussion	81
4.1 Chapter Overview	81
4.2 Aims of the Research	81
4.3 Summary of Research Findings	81
4.3.1 Hypothesis one	81
4.3.2 Hypothesis two	82
4.3.3 Hypothesis three	82
4.3.4 Hypothesis four	82
4.4 Comparisons with the Literature	82
4.4.1 Depression and NRC	83
4.4.2 Depression and EA	84

4.4.3 Depression and PRC	84
4.4.4 The mediating role of EA	85
4.5 Theoretical and Research Implications	86
4.5.1 Theoretical implications	86
4.5.2 Research implications	88
4.6 Clinical Implications	90
4.7 Strengths and Limitations	95
4.7.1 Design	95
4.7.2 Participants	96
4.7.3 Measures	97
4.7.4 Procedure	97
4.7.5 Data analysis	98
4.8 Directions for Future Research	99
4.9 Conclusion	100
5. References	102
6. Footnotes	119
7. Appendices	120

List of Tables and Figures

Tables

Table 1. Table of Papers to be Reviewed	30
Table 2. Normality Characteristics of the Data	65
Table 3. Demographic Data of Sample Population (N = 74)	70
Table 4. Correlation Matrix for Primary Variables (N = 74)	73
Table 5. Unstandardised and Standardised Coefficients and Statistical Significance for Mediation Analysis with NRC as the Predictor, EA as the Mediator and Depressive Symptoms as the Outcome Variable	76

Figures

Figure 1. Beck's (1987b) cognitive model of depression	2
Figure 2. Summary of selection procedure for the fifth search	29
Figure 3. Mediation model (Baron & Kenny, 1986)	43
Figure 4. Flowchart for participant recruitment procedure	49
Figure 5. Mediation model (Baron & Kenny, 1986)	52
Figure 6. Mediation model (Baron & Kenny, 1986)	75
Figure 7. Mediation model (Baron & Kenny, 1986) with unstandardised coefficients	77

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1. Introduction

1.1 Chapter Overview

This thesis will focus on the relationship between religious coping, experiential avoidance (EA) and depressive symptoms in a Muslim community sample. In particular, positive religious coping (PRC), negative religious coping (NRC) and experiential avoidance (EA) will be individually tested in a correlation design with depression. A mediation model is proposed whereby the relationship between NRC and depression is further explained by the presence of EA. The chapter will begin by considering Beck's (1987b) cognitive model of depression and its applicability to Muslims within the context of Islamic concepts of the self. Following on from this, the contribution of religious coping and EA to depressive symptomatology will be considered. The literature on religious coping, experiential avoidance and depression in Muslims will then be systematically reviewed. The final part of this chapter will address the rationale for the study and present the research hypotheses.

1.2 Beck's (1987b) Cognitive Model of Depression

Beck's (1987b) theory of depression adopts a vulnerability-stress model whereby a cognitive vulnerability predisposes an individual to react to a negative life event in a way that may lead to the development of depression. This theory describes a negative cognitive triad of beliefs with respect to the self, the world and the future in people with depression (Beck, 1987b). Beck proposed that difficult or stressful experiences in childhood are responsible for producing cognitive vulnerabilities, which manifest in dysfunctional attitudes and schemas (Beck, 2008). In adulthood, when a person experiences a stressful event, these

dysfunctional attitudes and schemas are activated and in turn lead to symptoms of depression (Figure 1).

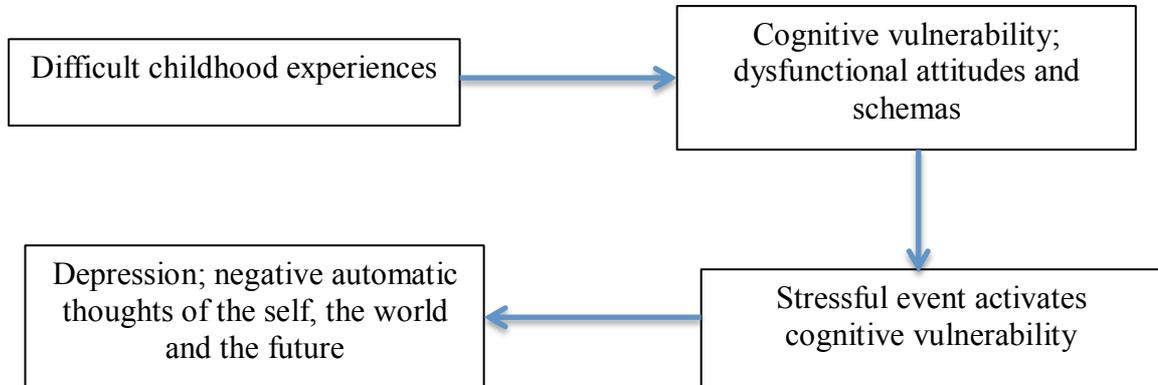


Figure 1. Beck's (1987b) cognitive model of depression.

Literature offering support for Beck's (1987b) model of depression in Caucasian and Western samples is abundant (Beshai, Dobson & Adel, 2012). The concept of the cognitive triad in particular has been investigated and this has yielded robust findings for negative views of the self (Lamberton & Oei, 2008), the world (Greenberg & Beck, 1989) and the future (Clark, Cook & Snow, 1998) in depressed people. In terms of its applicability to Muslim populations, the cognitive triad has also been investigated, but this has yielded more varying outcomes (e.g. Beshai et al., 2012; Stompe et al., 2006). Also, the current Cognitive Behavioural Therapy (CBT) model does not automatically incorporate religious and cultural beliefs within it. Some beliefs that would be seen as negative beliefs and part of the triad e.g. "I am helpless" or "I have no control over my fate" might be more culturally normative and not negatively connoted in Islamic samples where it is believed that everything is the will of Allah. The

intersection between religious and cultural beliefs and depression will be considered in the next sections of this chapter.

1.3 Islam

The word *Islam* comes from the Arabic word for peace, *salaam*, and *Muslim* literally translated means the one who submits to the will of Allah (Ali, Liu & Humedian, 2004). The Muslim religion is believed to have come into existence in the seventh century when the verses of their holy book, the Qur'an, were revealed to Mohamed (the prophet of Islam), through the angel Gabriel (Ali et al., 2004). The first revelation occurred during the lunar month of Ramadan, and this month is regarded as holy by Muslim followers. The Qur'an was originally written in Arabic, and even though it has been translated to many different languages the majority of the terms in Islam remain in Arabic (Ali et al., 2004). As a follower of Islam then, even non-Arabic speakers will have some fundamental knowledge of the Arabic language and probably be able to read the Qur'an in Arabic. Along with the Qur'an, many Muslims also follow the sayings (*hadith*) and teachings (*sunnah*) of the prophet Mohamed (Ali et al., 2004).

Islam is based on five pillars, which are the basic tenets of this religion. The first pillar is the *shahada*, a proclamation that there is only one God (Allah), and Mohamed is God's messenger. The second pillar is *salat* or prayer. Muslims are required to pray five times a day (in any clean, dry place) and honour the Sabbath day (Friday) by attending prayers at a Mosque. The third pillar of Islam is *zakat*, which refers to alms and tax that Muslims pay on their earnings. Typically Muslims give 2.5% of their yearly earnings to those less fortunate. The fourth pillar is *sawm* (fasting), when Muslims who are physically able refrain

from eating, drinking and sexual activity between sunrise and sunset for the month of Ramadan. Fasting is seen as a means to engage in self-reflection and spiritual discipline. It also increases empathy for the poor and hungry. During the holy month of Ramadan (the ninth month in the lunar calendar), Muslims generally engage in more religious activities such as prayer, attending the mosque and reading the Qur'an. The fifth and final pillar of Islam is *hajj*; the pilgrimage to Mecca. Those who can afford to are required to make this pilgrimage once in their lifetime.

Certain concepts in Islam merit special attention due to their impact on a Muslim's perception of themselves, the world and the future. Muslims believe in personal responsibility within the context of divine decree. This means that individuals always have choice in their actions, and that Allah knows what choices they will make (Smither & Khorsandi, 2009). This does not absolve individuals of the responsibility of their actions, because they still have the freedom to make one choice over another. Another idea that Muslims uphold is that all things, for example, good and evil, or sickness and health, come from God (Stompe et al., 2006). Whatever happens in a Muslim's life is believed to be God's will. An example of this is deeply rooted in the Arabic language whereby the word *InshAllah* (if it is God's will) is used frequently to speak of events in the future (Beshai et al., 2012), meaning that an event will only occur if it is God's will. Islam encourages acceptance of the situations that God has created whilst fostering responsibility and promoting positive action in the form of praying, supplications and being proactive (Ali et al., 2004). In order to

understand mental ill health and treatment from a Muslim perspective, the Islamic concept of the self will be considered next.

1.4 The Islamic Self-Concept

According to the Qur'an the basic motivational force in humans is a drive towards oneness with God or *tawhid* (Rasool, 2000). The Islamic concept of the self has been interpreted and described by many in the literature (Smither & Khorsandi, 2009). For the purpose of this thesis, Inayat's (2005) description of the model will be referred to. Inayat (2005) describes four components of the self; *qalb* (spiritual heart), *nafs* (ego¹ or self), *ruh* (soul), and *fitra* (divine potential). The spiritual heart contains the deepest spiritual wisdom, intuition and understanding of the individual, as well as being the mechanism through which *tawhid* is pursued (Smither & Khorsandi, 2009). The human connection with the divine is explained by the soul (*ruh*) and has been described as God's breath that creates a connection between humans and God (Inayat, 2005; Qur'an 32:9 and 66:12). The soul is an important motivation for spiritual development and can be conceptualised as the energy that fuels this development (Smither & Khorsandi, 2009).

Spiritual development occurs through the actions of the most superficial component of the Islamic self; the ego (*nafs*), which itself is broken down into three levels or forms (Inayat, 2005). At the most basic and lowest level is *nafs ammarra* (the commanding self), which represents instinctual negative drives, akin to the id in Freudian terms (Freud, 1923). Mostly, these negative drives are kept at bay and controlled, but when they are not, psychological distress is the

¹ The ego here means the self; it is not referred to in Freudian terms.

result (Inayat, 2005). The next level of the self is *nafs lawwamma* (the self-reproaching self), which is guided by morality above all else. It is an inner conscience that feels remorse and guilt at having succumbed to the instincts of the *nafs ammarra* (Inayat, 2005; Smither & Khorsandi, 2009). If we consider the Freudian model of the psyche again, the *nafs lawwamma* would be likened to the super-ego (Freud, 1923). The highest level of the self is *nafs mutma'inna* (the peaceful self). This state of the self refers to tranquility, acceptance, satisfaction, and inner peace (Inayat, 2005). Through acceptance of God's will, i.e. the world surrounding the individual, along with keeping the commanding self under control, whilst activating the remorseful self, one can reach this contented state (Inayat, 2005; Smither & Khorsandi, 2009). Finally, *fitra* (divine potential) the fourth component of the Islamic self-concept refers to the individual's natural disposition. Islam upholds the optimistic view that all humans are born with a natural innate tendency for goodness rather than evil (Inayat, 2005). In order to actualise *fitra*, individuals should not give in to their evil or negative urges which could result in mental unrest. The next sections of this chapter will consider the origin and treatment of mental illness, specifically depression, within the context of the Islamic self-concept.

1.5 Islam and Mental Illness

The origin of mental illness in Islam is attributed to not living one's life in accordance with the teachings and principles of the religion (El Azayem & Hedayat-Diba, 1994). Muslims can perceive their experience of mental illness as a consequence of not being close to God or as a test from God (Weatherhead & Daiches, 2010). Losing contact with Allah or not experiencing *tawhid* results in

psychological distress (Smither & Khorsandi, 2009) and, if this occurs, it is believed to be the will of Allah (Inayat, 2005). Mental illness can be located in the spiritual heart (qualb), and is understood as incongruences therein. Somatic manifestations are reported by many Muslims with a mental illness, e.g. an aching heart or a pressured heart (Inayat, 2005). Given this concept of the origin of mental illness, it is not surprising then that treatment methods along with prophylactics are located within the religion itself. It is believed that treatment and prevention of mental illness can be achieved through fasting, praying and recitation of the Qur'an (El Azayem & Hedayat-Diba, 1994; Inayat, 2005). Notably, mental wellbeing is not construed as an absence of psychological distress, rather a successful and balanced mixture of the demands placed on Muslims by their religion (El Azayem & Hedayat- Diba, 1994).

Stigma is a feature of reaction to mental illness worldwide, but particularly in Muslim communities where psychological distress is seen as the result of individual action or inaction (Ali et al., 2004). Furthermore, since families (rather than individuals) are thought of as the basic building blocks of communities in collectivistic Muslim societies, mental illness is thought to reside within the family and be a family matter (Ali et al., 2004). Both the notion of stigma and that mental illness is a family matter undoubtedly impact on treatment seeking behaviour amongst Muslims, and this has been shown over and again in the literature where Muslims are reticent to approach mental health services (e.g. Abudabbeh & Aseel, 1999; Al Issa, 2000; Ali et al., 2004; Haque-Khan, 1997). Collectivistic values have also acted as deterrents to suicide in the Muslim world where family cohesion and religious condemnation of suicide are

present (Beshai et al., 2012). Suicide in Islam is regarded as sinful, and interestingly suicide rates drop dramatically in Muslim countries during the holy month of Ramadan (Al-Issa, 1990). With these concepts in mind, depression in the Islamic world will now be addressed.

1.6 Depression in Muslims

Some of the literature on Muslims' experiences of depression illustrates unique phenomenological features of depression in Islamic countries, potentially rendering Beck's (1987b) cognitive triad less relevant in these populations (Beshai et al., 2012). Significantly less guilt, self-reproach, and feelings of unworthiness have been found in samples of depressed Muslims (Bazzoui & Al-Issa, 1966; Stompe et al., 2001). Sami and El-Gawad (1995) randomly selected a sample of 100 depressed outpatients in Egypt and found that their Hamilton Rating Scale for Depression (Hamilton, 1960) scores illustrated more somatic symptoms and less feelings of guilt than existing data on British and Indian samples. Socioeconomic status was not controlled for and it is likely that their sample included a small proportion of Christians, yet this study does challenge the cross-cultural applicability of Beck's (1987b) cognitive model of depression. One possible explanation for the increased guilt in Christian samples relative to Muslim samples could be the concept of original sin (Beshai et al., 2012). This concept is not present in Islam and may be a contributing factor to feelings of self-reproach. Stompe et al. (2006) attribute this difference to Muslims' perception of God whereby all events that occur, come from Allah, and therefore Muslims may engage in an external, rather than an internal, projection of guilt. This could be explained by Muslims not feeling inherently responsible, and

therefore not harbouring feelings of guilt as a result of negatively appraised situations. This may also encourage mixed feelings towards Allah and therefore instigate an internal struggle or incongruence as described in section 1.5 of this chapter. Another explanation offered for these differences in how depression may manifest in Muslims, is that the philosophy of Islam promotes a peaceful acceptance towards events, as these events are perceived to be God's will (Smither & Khorsandi, 2009).

Contrasting results were found by Beshai, Dobson and Adel (2012) who directly tested the applicability of the cognitive triad in an Egyptian Muslim population using a non-Muslim Canadian sample as a control group. They found support for the model in general across both samples, with dysphoric individuals reporting significantly more negative thoughts towards the self, the world and the future than non-dysphoric individuals (Beshai et al., 2012). When the two groups were compared however, significantly more negative thoughts towards the self and the world were endorsed by the Egyptian sample, which was contradictory to initial hypotheses based on the existing literature (Beshai et al., 2012). Beshai et al. (2012) offer some explanations for this difference (e.g. the unusually high level of education in the Egyptian sample). Indeed despite employing a non-Muslim control group, their sampling method is a weakness of this study. The Muslim sample was recruited from a set of students who were all studying medicine and in the same year group, therefore yielding a fairly homogenous subsample that is not representative of Egyptians in general, let alone Arabs and Muslims. The authors acknowledge this weakness and state that it does not detract from the most noteworthy finding of this study, which is the applicability

of Beck's (1987b) cognitive model of depression amongst some Arabic-speaking Egyptians.

Indeed CBT-derived interventions such as a pilot trial of behavioural activation (BA) incorporating teachings from Islam, has found initial promising results in the United Kingdom (UK; Meer, Mir & Serafin, 2012), adding further weight to the applicability of Beck's (1987b) cognitive model of depression to Muslims. This pilot study offered additional material in the form of a booklet with teachings from the Qur'an, which supported the concepts of BA to clients presenting to primary care for depression. This was a small-scale pilot with high attrition rates, no control group, and most of the conclusions drawn were based on qualitative accounts of the therapists and clients. Nonetheless, initial efforts such as these help to shed light on the effectiveness of incorporating Islam into therapy for depressed Muslims. Interestingly, Bhugra and Mastrogianni (2004) posit the notion that due to the blurring of geographical boundaries and cultural assimilation, certain key features of depression that may have been present in one geographical area are now being observed in others. This observation would probably be compounded by advancements in technology such as the Internet, access to media from other cultures, and the general movement of people from one geographical area to another through tourism and immigration.

Due to the dearth of literature, the quality of the existing studies, and the conflicting findings, there is currently no consensus on the cross-cultural validity of Beck's (1987b) model of depression, and, where it has been tested on Muslim populations, studies have yielded variable results. One thing is clear from the literature though, and that is the high rate of prevalence of depression in

Muslims, particularly those living as immigrants in foreign countries. This topic will constitute the next section of this chapter.

1.7 Prevalence of Depression in Muslims

The World Health Organisation (WHO) predicts that by 2020 depression will become the second most debilitating condition worldwide (Murray & Lopez 1996). Significant variability exists between countries on how depression is diagnosed and managed (Nutt et al., 2010). Muslims comprise the second largest religious group in Britain (Office of National Statistics, 2001; ONS) and accounted for 4% of The Care Quality Commission's annual census of patients in mental health services in the UK in 2009 (Care Quality Commission, 2010).

There is a dearth of research on the prevalence of depression amongst migrants, including Muslims, in Britain (Weich et al., 2004). The National Institute for Health and Clinical Excellence (NICE; 2009) reported that certain socioeconomic factors² significantly affect the prevalence of depression, and that these factors are more widespread in migrant populations. Additionally, psychiatric hospital admissions in England were found to be twice as high for immigrants compared to native groups (Cochrane, 1977). Raphaely and O'Moore (2010) collated data across a number of European reviews and found higher prevalence of depression amongst migrants compared to the national population. In the UK, surveys found that 14% of British students experienced mental ill health, compared to 28% of Iraqi, Iranian and Nigerian students, and 22% of Turkish and Egyptian students (Bhugra & Ayonrinde, 2004). These elevated

² Being unemployed, belonging to social classes 4 and below, no formal educational qualifications, living in local authority or Housing Association accommodation, having moved three or more times in the last 2 years, and living in an urban environment.

rates may be due to risk factors such as forced migration, lack of social support, cultural conflict and financial hardship, which illustrates that immigrants in the UK are at a higher risk of mental ill health in general (NICE, 2009).

In a report written for the ONS by Hicks (2013), between April 2012 and March 2013 Arabs in Britain rated their happiness as significantly lower than whites (comprising immigrants and non-immigrants) and scored the lowest of all ethnic groups on the question *how happy were you yesterday?* (Hicks, 2013). This survey included around 165,000 individuals living in the UK, which adds to the generalisability of the findings to the UK population. A possible confounding factor to the results obtained is how people from different ethnic backgrounds approach and answer questions on wellbeing, and this highlights a need to develop more cross-culturally valid measures. Indeed adding to Hicks' (2013) findings, results reported in a national demographic study by the Pew Research Centre in the United States of America (USA) illustrated that Muslim immigrants are somewhat unhappier than Muslims who were born there (Pew Research Centre, 2007, as cited in Kesharvarzi & Haque, 2013). The report also revealed that out of 1,050 American Muslims, 78% reported being happy or very happy with their life, which is lower than the American average of 87% (Pew Research Centre, 2007, as cited in Kesharvarzi & Haque, 2013). The reasons for these findings are unclear but they mirror those reported in the UK, (e.g. Hicks, 2013; NICE, 2009) and further compound the assertion that immigrants, and perhaps especially those from Arab/Muslim backgrounds, consistently report lower mood and more distress than national averages.

Further figures from America show that 49.3% of Arabs (69% of which were Muslim), were found to have clinically significant levels of depression; notably higher than any other ethnic minority (Amer & Hovey, 2012). This study was conducted post 9/11 (data were gathered in 2004) and aimed to assess the mental health of Arabs in America in light of the bombings on the World Trade Centre in 2001, along with the corresponding stigma directed towards Arabs and Muslims at the time (Amer & Hovey, 2012). It is possible that the anti-Arab/Muslim culture in America influenced the elevated depression scores obtained by Amer and Hovey (2012). Additional contributing factors may have been stressors associated with immigration more generally e.g. discrimination and cultural shock (Bhugra & Ayonrinde, 2004). Socioeconomic status and education were not controlled for in the sample but Amer & Hovey (2012) report unusually high levels of income in their sample which would indicate that the elevated depression scores are not due to low socioeconomic status or poverty. Depression rates are clearly elevated in Muslim and Arab populations, and depression is therefore a significant problem. Given these high rates of depression, and evidence for different cultural beliefs and expression of depressive symptoms, it is worth looking at any cultural or religious factors, which may contribute to these high rates of depression, and also any potentially protective cultural or religious factors which could be harnessed in treatment. This will be the focus of the next sections.

1.8 Coping

Coping can be conceptualised as a reaction to the experience of stress (Lyon 2012). Lazarus & Folkman (1984) define stress as a subjective phenomenon,

which is made up of emotions, cognitive appraisals and coping responses. These complex processes interact to cause stress when a person finds himself or herself in a situation where their resources are exceeded by the demands being placed on them, and a form of loss or harm is anticipated (Lyon, 2012). Coping is then described as the attempt to manage the perceived loss or harm and contain emotions in such situations (Lazarus & Folkman 1984; Lyon, 2012).

Coping has been broken down into two main sub-categories by Lazarus & Folkman (1984); problem-focused and emotion-focused. Problem-focused coping employs strategies to tackle a problem by defining it and taking actions to access alternate solutions. This form of coping can be directed inwards (e.g. reappraising) or outwards by changing the environment in some way (Lazarus & Folkman, 1984). Emotion-focused coping aims to decrease the stressful emotions being experienced in a given situation (Lyon, 2012). This includes attempts to engage in avoidance, venting of emotions, blaming of others and paying attention selectively. This form of coping does not directly change a stressful situation although may result in reappraisal of the situation (Lazarus & Folkman, 1984). According to Lazarus & Folkman (1984) when a situation is perceived as unchangeable by an individual, emotion-focused coping will more commonly be employed than problem-focused coping. Evidence from the literature indicates that people engage in both forms of coping to various degrees (Lyon, 2012).

Religious coping and EA are two constructs that describe forms of coping (Bond et al., 2011; Pargament, 1997). Full descriptions of religious coping and EA are addressed in sections 1.9 and 1.10 of this thesis respectively. It serves to situate these forms of coping within the wider literature on coping according to

Lazarus & Folkman (1984) at this point. Religious coping theory can be construed as encompassing both problem and emotion-focused coping in that it describes strategies such problem solving as well as blaming and avoiding (Pargament, 1997). These strategies are not unique to either form of religious coping (PRC and NRC) and rather span across both forms of religious coping. EA on the other hand has been linked to emotion-focused coping specifically and Karekla & Panayiotou (2011) have demonstrated that EA and emotion-focused coping tend to load on the same factor. The following sections describe religious coping and EA in more detail owing to the central role they play in this thesis.

1.9 Religious Coping

Religious coping has received increasing attention in the literature as of late (Pargament, Feuille, & Burdzy, 2011). The quality of being religious as well as specific components of religion have been shown to help those that employ religious coping manage life stressors and mental ill health (Pargament, 1997). Two forms of religious coping have been identified by Pargament (1997); PRC and NRC. PRC indicates a benevolent worldview, spiritual connectedness with others, and a secure spiritual relationship with a transcendent force, while NRC reflects spiritual tensions with oneself, others and a transcendent force (Pargament, 1997). Dein (2006) posits that religion can provide a cognitive framework for appraising and dealing with life events. This links religious coping to Beck's (1987b) model of depression in that religious coping can be a method of dealing with stressful life events that may, or may not, lead to the development of depression. It also links to the cognitive triad, in that PRC and

NRC are conceptualised as ways of positively or negative appraising the self, the world and the future.

In a meta-analysis conducted by Ano and Vasconcelles (2005), NRC was found to significantly positively correlate with psychological distress and PRC was significantly negatively correlated with psychological distress. After pooling data across studies, only 13% of their whole sample was Muslim, and religious coping has not been extensively investigated in this sample. This is surprising given that Muslims are more likely than Christians, Hindus, and Jews to engage in religious coping for the treatment of depression due to their belief in its efficacy (Loewenthal, Cinnerella, Evdoka, & Murphy, 2001). In this latter study, religious coping was measured as part of a larger questionnaire on beliefs about the efficacy of different types of help for depression developed by the authors (Loewenthal et al., 2001). It is interesting that this is one of the first studies to quantitatively compare uses of religious coping across four major religions in a community UK sample. The same authors conducted a similar qualitative study just prior to this one and also found that Muslims were more likely to engage in forms of religious coping because they believed them to be efficacious (Cinerella & Loewenthal, 1999).

To ascertain the direction of the relationship between NRC and depression, Pirutinsky, Rosmarin, Pargament and Midlarsky (2011) employed a community-based Jewish Orthodox sample in a longitudinal study and reported that NRC preceded the development of depression. Although this study used a non-Muslim sample it is one of the first to establish a longitudinal, and possibly causal relationship between NRC and depression. Interestingly, this study did not

measure PRC in order to ascertain whether it buffered against the development of depression at the second time point, and no justification was given for this; rather the focus of the study was on NRC in terms of religious struggle and how this may cause depression (Pirutinsky, Rosmarin, Pargament and Midlarsky, 2011).

Employing a Muslim sample of war refugees from Kosovo and Bosnia, Ai, Peterson and Huang (2003) found that optimism was positively related to PRC and hope was negatively related to NRC. Ai et al. (2003) employed the Brief RCOPE (Pargament, Smith, Koenig, & Perez, 1998) and found it to have good psychometric properties in their sample (e.g. Cronbach's $\alpha = .86$ for PRC and $.81$ for NRC). This is one of the few studies that points to a relationship between PRC and better wellbeing in a Muslim sample. Notably, the relationship between PRC and depression or mental ill health was not investigated by this study. In a more recent study, Gardner, Krägeloh and Henning (2014) explored religious coping (using the Brief RCOPE; Pargament et al., 1998) amongst domestic and international Muslim students in New Zealand. Their results indicated that PRC was positively related to a better quality of life and reduced perceived stress in the international sample while NRC was negatively related to a better quality of life and positively related to increased perceived stress in the domestic sample. One of the reasons for the discrepancy in these findings could be that international students were less acculturated to the host country and therefore adopted more PRC methods than their domestic counterparts. Furthermore, participants were recruited after Friday prayer during Ramadan which may have primed them to over-report how often they engaged in PRC and led them to

endorse more items on a quality of life measure. Ramadan is the holy month in Islam, when Muslims engage in more religious practices and generally attempt to act more piously (Ali et al., 2004). It is likely that most (if not all) of the participants who took part in the study were fasting and this may have further impacted on how they responded to the questionnaires. This study could have benefitted from a measure of social desirability to target some of these limitations.

Religious coping and depression have been briefly addressed in the literature employing purely Muslim samples (e.g. Abu-Raiya, Pargament & Mahoney, 2011; Abu-Raiya, Pargament, Mahoney & Stein, 2008; Khan & Watson, 2006). All studies used a version of Pargament et al.'s (1998) Brief RCOPE scale and found a positive correlation between NRC and depressive symptoms. One study (Abu-Raiya et al., 2008) found that certain items of the NRC predicted depression in their sample. These studies spanned various community samples including Muslims living in America and Pakistani students studying in Pakistan. They offer support for the implication of NRC in depressed Muslims. The relationship between NRC and depression in Muslim populations will be more closely examined in the systematic review in section 1.12. The next section of this chapter however will address another form of coping that is implicated in the development of depression; EA.

1.10 Experiential Avoidance

EA is the attempt to avoid certain private experiences such as thoughts, feelings, and physical sensations, as well as efforts to alter the form or frequency of them (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). It entails escaping,

avoiding or modifying uncomfortable experiences, leading to short-term relief.

Conversely, the longer-term effects of EA have been implicated in mental health difficulties, including depression (Hayes et al., 1996). As already described in section 1.8, Lazarus and Folkman (1984) identified two forms of coping; emotion-focused and problem-focused. Emotion-focused strategies involve EA and are linked to poorer mental health, while problem-focused strategies involve acceptance, taking assertive action, and are linked to better mental health outcomes (Hayes et al., 1996).

EA and acceptance are construed as opposite poles of the same construct, with acceptance being the more adaptive, and predicting better mental health (Karekla & Panayiotou, 2011). EA has therefore been described as a unidimensional construct whereby higher EA is lower acceptance and vice versa (Bond et al., 2011). Bond et al. (2011) explain EA and acceptance in terms of psychological inflexibility and flexibility respectively. They define acceptance as the willingness to experience and not alter the form or frequency of unwanted private events. They posit that differences in these terms are terminological, not substantive, and are interchangeable depending on the sample population employed. Karekla and Panayiotou (2011) demonstrated that EA and coping in general (measured by the Brief COPE; Carver, Scheier & Weintraub, 1989) are similar yet not overlapping constructs, with EA loading on the same factor as emotion-focused coping. The Brief COPE (Carver et al., 1989) measures strategies used by individuals to cope with stressors e.g. emotion coping, humour, active coping and positive reframing.

Current literature on EA employs the Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011), which measures the level of EA/acceptance adopted as a coping strategy when faced with a stressful situation. Plumb, Orsillo and Luterek (2004) found that higher EA (using an earlier version of the AAQ-II) was a significant predictor of depressive symptoms after a stressful life event. Their sample included undergraduate students in America and veterans presenting for post-traumatic stress disorder (PTSD) treatment, who also displayed depressive symptoms. In the veteran subsample, EA accounted for 28% of the variance in depression scores as measured by the Beck Depression Inventory (BDI; Beck, Ward, Mendelsohn, Mock & Erbaugh, 1961). This offers support for the relationship between EA and depression in both clinical and non-clinical American samples. Lhewa (2010) explored adaptive coping in the form of acceptance, religious coping and social support to find that they predicted less distress (whilst EA predicted more distress) in a sample of Tibetan survivors of torture and refugee trauma. Lhewa (2010) also found that acceptance moderated the effects of trauma severity on depression so that depressive symptoms were higher when acceptance was lower. This study is one of the few that adopted the construct of EA with a non-Western sample and offers preliminary support for the cross-cultural applicability of EA.

These studies shed some light on how EA may influence response to stress, and how adopting one coping style over another can influence the likelihood of developing depressive symptoms and experiencing other forms of distress. Although recent researchers have leveled criticism against Western models of depression for not being applicable to Muslim populations (e.g. Sami & El-

Gawad, 1995; Stompe et al., 2001), it would appear that there are certain key psychological mechanisms in the form of EA/acceptance, common to the understanding of depression among Western and non-Western (i.e. Tibetan) populations.

1.11 Bridging the Gap Between Religious Coping and Experiential Avoidance

Religious coping and EA have more or less been discussed separately thus far. This is despite the fact that the concept of acceptance is present in many religious traditions including Christianity (the Christian concept of forbearance), Buddhism (linked to concepts like non-judgment, acceptance and karma), and Islam (the concept of accepting God's will). Addressing religious coping and EA separately (despite the mediation model proposed in the title and chapter overview) is a reflection of the fact that there is currently little literature available that addresses both constructs together.

In a recent paper, Knabb and Grigorian-Routon (2013) tested a mediation model similar to the one proposed in this study as part of a larger model including other constructs. They employed a Christian sample of university students in the USA. Results of the study included a positive correlation between NRC and psychological maladjustment (including depression) along with the finding that EA partially mediated this relationship (Knabb & Grigorian-Routon 2013). The rationale offered for the mediation model was based on the theory behind the construct of EA whereby suffering and pain are not the same, and that suffering stems from an unwillingness to accept painful inner experiences (Hayes et al., 1996). Based on this theoretical understanding, the construct has been

described as a mediating factor between psychiatric symptoms and behavioural disorders by the authors who developed it (Hayes et al., 1996).

Indeed EA has been shown to mediate the relationship between coping styles and negative affective experiences (Kashdan, Barrios, Forsyth & Steger, 2006). In their study on EA, Kashdan, Barrios, Forsyth and Steger (2006) employed an undergraduate American sample and found that EA mediated the effects of maladaptive coping and emotional response styles on anxiety related distress. This study also found that EA mediated the effects of suppression and reappraisal (traditional CBT processes) on diminished daily affective positive experiences, whereby EA predicted negative affect over and above the two emotional regulation strategies (suppression and reappraisal; Kashdan et al., 2006). Although this study employed a narrow sample, it offers support for the mediating role of EA in the development of psychopathology and illustrates how EA may also mediate the relationship between NRC (a maladaptive coping style) and depression.

Further research has demonstrated how EA can mediate the relationship between coping and general psychopathology in a population with chronic pain (Costa & Pinto-Gouveia, 2011). Employing a sample of patients in primary care, Costa and Pinto-Gouveia (2011) found that EA mediated the relationship between rational and detached coping styles, and depression and stress. This illustrates that these patients were better able to cope with depression and stress when they were more accepting (rather than avoiding) of their chronic pain. In an empirical review of 28 papers on EA, Chawla and Ostafin (2007) propose exploring this construct as a mediating factor in the development of mental

illness, since their findings suggest that it mediates the relationship between problematic coping and psychopathology.

The paper by Knabb and Grigorian-Routon (2013) is the first instance of religious coping and EA being tested together in the literature, and emphasises the novelty of the current research as well as adding to the literature base for the hypotheses proposed in section 1.15 of this chapter. These concepts then link EA and religious coping to Beck's (1987b) model of depression in that EA may be an important mediator in the relationship between cognitive vulnerability and the development of depression. If NRC, (a cognitive vulnerability) is employed as a maladaptive coping style, the presence of EA may mediate the relationship between NRC and depression thus offering a theoretical rationale for the mediation model proposed in the present study. The next section presents a systematic review of the literature on the three main constructs addressed by this study; depression, religious coping and EA.

1.12 Systematic Review of the Literature

A systematic review of the literature was undertaken in order to answer the question: Are religious coping and experiential avoidance implicated in the development of depression in an adult Muslim population?

1.12.1 Selection criteria. In order to be eligible for inclusion in the review, studies had to report that at least 10% of their sample population was adult Muslim. Religious coping had to be measured either by the Brief Religious Coping Scale (RCOPE; Pargament et al., 1998) or the Psychological Measure of Islamic Religiousness (PMIR; Abu Raiya et al., 2008) so as to ensure that the same construct was being measured across studies. EA could be measured using

the AAQ-II (Bond et al., 2011), a measure of cognitive flexibility/inflexibility, or a measure of avoidance coping (e.g. subscale of the COPE inventory; Carver et al., 1989). Depression and depressive symptoms could be measured using any tool, but studies not including this construct were omitted.

1.12.2 Search strategy. A literature search was conducted using the electronic databases Embase, Medline, PsychINFO and PsychARTICLES on 18th December 2014. As it was anticipated that there would be very few studies which looked at all three variables (depression, EA and religious coping) in a Muslim sample, it was decided to complete a series of literature searches for different combinations of the variables. The following search terms were entered separately in order to maximise sensitivity:

1. Islam*
2. Muslim*
3. Arab*
4. 1 OR 2 OR 3
5. Depress*
6. Experiential AND avoidance
7. AAQ
8. 6 OR 7
9. Religious AND coping
10. RCOPE
11. 9 OR 10
12. 4 AND 5 AND 8 AND 11

No limits were applied to the results of this search and duplicates were removed.

The initial search using the terms outlined above yielded nine papers. Titles, abstracts, and in some cases methodology sections were screened for eligibility according to the aforementioned criteria and only one study was found to be appropriate (Masuda, Mandavia & Tully, 2014). Ten more searches of the same databases were completed using combinations of the four main search subjects, EA, religious coping, Islam and depression. The specific search terms and number of papers each search yielded after duplicates were removed are outlined below. For the second search, the search terms were:

1. Islam*
2. Muslim*
3. Arab*
4. 1 OR 2 OR 3
5. Experiential AND avoidance
6. AAQ
7. 5 OR 6
8. Religious AND coping
9. RCOPE
10. 8 OR 9
11. 4 AND 7 AND 10

This search yielded 12 papers, only one of which was eligible, and this was the one already located in the first search.

The search terms for the third search were:

1. Islam*

2. Muslim*
3. Arab*
4. 1 OR 2 OR 3
5. Depress*
6. Experiential AND avoidance
7. AAQ
8. 6 OR 7
9. 4 AND 5 AND 8

This search yielded 26 papers with the same results as the first two searches where the paper by Masuda, Mandavia and Tully (2014) was the only one eligible for inclusion in the review.

The search terms for the fourth search were:

1. Depress*
2. Experiential AND avoidance
3. AAQ
4. 2 OR 3
5. Religious AND coping
6. RCOPE
7. 5 OR 6
8. 1 AND 4 AND 7

This search yielded 62 results. Masuda et al.'s (2014) paper was the only study eligible for inclusion in this review.

The search terms for the fifth search were:

1. Islam*

2. Muslim*
3. Arab*
4. 1 OR 2 OR 3
5. Depress*
6. Religious AND coping
7. RCOPE
8. 6 OR 7
9. 4 AND 5 AND 8

This search yielded 226 results after duplicates were removed. Results were screened according to the eligibility criteria and a total of six suitable papers, which included the one already identified were found.

The search terms for the sixth search were:

1. Islam*
2. Muslim*
3. Arab*
4. 1 OR 2 OR 3
5. Experiential AND avoidance
6. AAQ
7. 5 OR 6
8. 4 AND 7

This search yielded 42 papers, and after eligibility screening, only one study (Masuda et al., 2014) was eligible. The remaining four searches yielded numbers of studies in excess of 500 (between 502 and 3618) and therefore were deemed impracticable to manually search and screen.

The references of the six papers found thus far were manually scrutinised for further studies that could meet the eligibility criteria and one more was found. A further paper was identified by searching for influential authors in the field such as Abu-Raiya, Pargament, Khan, Hayes and Bond. The final two papers included in this review were found in the author's own personal library. In their paper, which addresses searching for literature on religion and mental health, Wright, Cottrell and Mir (2014) recommend using personal libraries to source studies that may not be identified through routine database searches. Wright et al. (2014) also recommend using the database Cumulative Index to Nursing and Allied Health Literature (CINAHL) in addition to Embase, Medline and PsychINFO as they located additional papers this way. The first six searches outlined above were repeated in CINAHL yet this yielded no unique eligible papers. Finally, the database ArabPsyNet, which covers non-Western journals and reports, was searched as recommended by Wright et al. (2014). Combinations of search terms cannot be entered into this database, so the terms were entered individually and each set of results was manually screened. One paper was located (Abdel-Kawi, 2002), although it was in Arabic and could not be accessed. The paper addressed coping styles and depression in a Muslim population and the abstract (which was in English and available at <http://arabpsynet.com/paper/conspapierdetail.asp?reference=3015>) stated that emotion-focused coping was implicated in the development of depression in this population. The search strategy and selection criteria outlined, yielded a total number of 10 papers to be reviewed. The selection procedure for the fifth search (which yielded the most number of papers) is illustrated in Figure 2.

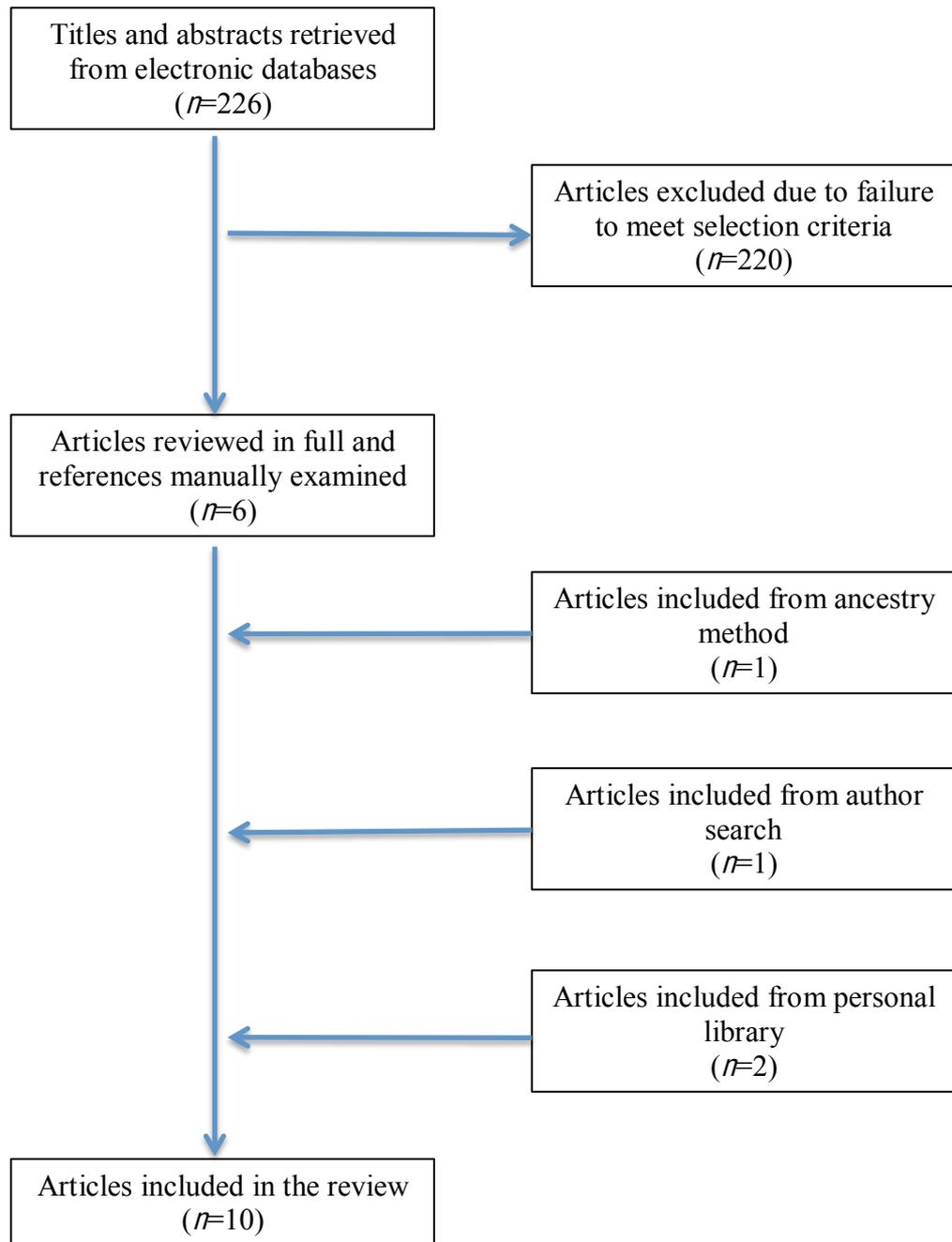


Figure 2. Summary of selection procedure for the fifth search.

1.12.3 Table of papers to be reviewed

Table 1. *Table of Papers to be Reviewed*

Author(s)	Design	Sample Size	Population (% Muslim)	Constructs (measure)	Outcome
1. Masuda, Mandavia and Tully (2014)	Cross-sectional correlation, one group	116	Asian students in the USA (19%)	EA (AAQ-II), Depression (BSI)	Greater EA associated with greater depression
2. Kuo, Arnold and Rodriguez-Rubio (2013)	Cross-sectional correlation, one group	301	Students in Canada (14.3%)	EA (CCC), Depression (BSI)	Avoidance coping increased psychological distress including depression
3. Khawaja (2007)	Cross-sectional correlation, one group	280	Migrants in Australia (100%)	EA (COPE) Depression (HSCL)	Avoidance coping predicted psychological distress including depression
4. Abu-Raiya, Pargament and Mahoney (2011)	Cross-sectional correlation, one group	138	Community-based sample in the USA (100%)	Religious coping (RCOPE), Depression (CES-D)	NRC was correlated with depression
5. Nurasikin et al. (2012)	Cross-sectional correlation, one group	228	Outpatients in a psychiatric clinic in Malaysia (47.4%)	Religious coping (RCOPE), Depression (DASS)	NRC was correlated with psychological distress including depression

Author(s)	Design	Sample Size	Population (% Muslim)	Constructs (measure)	Outcome
6. Khan, Watson and Chen (2011)	Cross-sectional, correlation and comparison of two groups	322	Pakistani community-based and clinical sample (100%)	Religious coping (PMIR) Depression (GHQ)	PMIR negative appraisals correlated with poorer psychological functioning including depression
7. Abu-Raiya, Pargament, Mahoney and Stein (2008)	Cross-sectional, validation of a scale	340	Worldwide Internet community-based sample (100%)	Religious coping (PMIR) Depression (CES-D)	Certain PMIR negative appraisals predict depression
8. Braam, Schrier, Tuinebreijer, Beekman, Dekker and de Wit (2010)	Cross-sectional, correlation and comparison of four groups	776	Dutch, Moroccan, Turkish and Surinamese/Antillean groups in the Netherlands (50%)	Religious coping (RCOPE-10), Depression (SCL-90-R)	Some NRC items positively correlated with depression
9. Khan and Watson (2006)	Cross-sectional correlation, one group	129	Pakistani students (100%)	Religious coping (RCOPE), Depression (BSI)	NRC positively correlated with depression
10. Feder et al. (2013)	Cross-sectional correlation, one group	200	Pakistani earthquake survivors (97%)	Religious coping (RCOPE-6), Depression (PANAS)	Some NRC items positively correlated with negative affect

Note. EA = Experiential Avoidance, AAQ-II = Acceptance and Action Questionnaire-II, BSI = Brief Symptom Inventory, CCC = Cross-Cultural Coping Scale, HSCL = Hopkins Symptom Checklist, CES-D = Centre for Epidemiological Research-Depressed Mood Scale, NRC = Negative Religious Coping, DASS = Depression Anxiety Stress Scale, PMIR = Psychological Measure of Islamic

Doctoral Thesis: An investigation into whether
experiential avoidance acts as a mediator in the relationship
between religious coping and depression in an adult Muslim population

Dina Bedair

Religiousness, GHQ = Global Health Questionnaire, RCOPE-10 = RCOPE 10 item, SCL-90-R = Symptom Checklist-90 Revised,
RCOPE-6 = RCOPE 6 item, PANAS = Positive and Negative Schedule.

1.12.4 Results of the literature review. Of the 10 papers reviewed none addressed both religious coping and EA in the same study. Three papers [1, 2 and 3] investigated whether EA was implicated in the development of depression, while seven papers [4, 5, 6, 7, 8, 9 and 10] addressed religious coping and depression. In general, sample sizes were ample and ranged between 116 and 776 participants. All of the studies used a cross-sectional design, and two of these employed more than one group of participants for the purpose of comparison [6 and 8]. The percentage of participants who were Muslim varied widely between studies; some employed only Muslim samples while others had figures as low as 14.3% [2]. Cultural background, language, and whether participants were immigrants or living in their home country also differed greatly across the papers reviewed. Some studies offered their participants translated measures in Arabic, Urdu, or Bahasa Melayu [3, 4, 5, 6, 8, 9 and 10] while others only administered English questionnaire packs [1, 2 and 7].

Measurement of the constructs being investigated was not consistent across studies, and this is arguably one of the most influential factors on the validity of comparisons and generalisations made between studies, and the conclusions that can be reached. Of the three studies that investigated EA [1, 2 and 3] none employed the same measure of EA, although two [1 and 2] used the same measure of depression (the Brief Symptom Inventory [BSI]; Derogatis & Melisaratos, 1983). In terms of religious coping, the RCOPE (Pargament et al., 1998) was the most widely used measure [4, 5 and 9], and one study employed an alternative 10-item version of the scale [8], while another employed a six-item version [10]. The remaining two studies [6 and 7] used the PMIR (Abu Raiya et al., 2008), which encompasses parts of the NRC subscale of the RCOPE. In fact

some studies broke NRC down into individual items and investigated these separately [6, 7, 8 and 10]. Depression was often measured as part of a more generic measure of psychological distress and not always reported on individually [2, 3, 5 and 6], although all studies did include a measure of depression as per inclusion criteria. Notably, none of the studies were anchored by a particular theoretical model of depression, although coping theory (Lazarus & Folkman, 1984) and EA (Hayes et al., 1996) were discussed.

1.12.4.1 Experiential avoidance and depression. The three studies that addressed EA and depression found that either depression or psychological distress including depression were correlated with a form of EA [1, 2 and 3]. The first study (Masuda et al., 2014) employed the AAQ-II (Bond et al., 2011) and investigated a specific measure of depression, the BSI (Derogatis & Melisaratos, 1983). They report a positive correlation of $r = .55$, $p < .01$. Although this is a moderate correlation, illustrating that the more one engages in EA, the more likely one is to experience depressive symptoms, the sample comprised Asian students, 19% of which were Muslim, therefore limiting the generalisability of its findings. The sample population employed was actually a sub-sample of 116 Asian American students (from a pool of 800 psychology undergraduate students attending university in a metropolitan area in the United States). The sample was relatively homogeneous with a mean age of 19.89 years ($SD = 2.72$, range 18-31 years) and 64% identified their families as middle or upper middle class. Despite the narrow age range and relatively privileged economic status, this is notably the only instance of the use of the AAQ-II with a Muslim population found in the literature.

Avoidance coping in more general terms was measured by the next two studies [2 and 3], and they also addressed depression in more general terms as part of a wider scale measuring psychological distress. Even though both of these papers employ psychological distress measures that have a depression subscale incorporated into them (BSI; Derogatis & Melisaratos, 1983 and Hopkins Symptom Checklist [HSCL]; Derogatis, Lipman, Rickels, Uhlenhuth & Covi, 1974), they only report the total score of general psychological distress rather than the depression subscale score. Although both of these studies found that avoidance coping was correlated with psychological distress, avoidance coping was measured by two different scales (Cross-Cultural Coping Scale [CCC]; Kuo, Roysircar & Newby-Clark, 2006 and the COPE; Carver et al., 1989) thus making direct comparisons difficult. The construct of avoidance coping was described similarly by both papers, and correlations with psychopathology were reported (with regards to avoidance coping), thus illustrating some face and criterion validity of both measures. The COPE (Carver et al., 1989) displayed better internal consistency with Cronbach's $\alpha = .77$, compared to $\alpha = .70$ for the CCC (Kuo et al., 2006). The CCC (Kuo et al., 2006) was specifically developed for use with collectivistic non-Western cultures and therefore may have been more appropriate for use with the samples employed, yet overall, both measures appeared valid and appropriate for the studies they were used in.

Khawaja (2007) conducted a regression analysis and found that avoidance coping predicted psychological distress ($r = .36, p < .01$), which is the only instance of such a finding (i.e. prediction rather than correlation) in the literature employing a Muslim sample. Kuo, Arnold and Rodriguez-Rubio (2013) report a positive correlation of $r = .28, p < .001$ for the relationship between avoidance

coping and psychological distress, which despite being significant represents quite a weak correlation. Khawaja's sample population were all Muslim immigrants living in Australia, while Kuo et al.'s (2013) had a broader sample of Canadian students, only 14.3% of which were Muslim. It is interesting that a stronger correlation was reported in the exclusively Muslim sample, although this difference might be attributed to different measures used and to other, unspecified differences between the studies.

1.12.4.2 Religious coping and depression. The RCOPE (Pargament et al., 1998) was investigated alongside a specific measure of depression in two of the studies reviewed [4 and 9]. In the first of these studies Abu-Raiya, Pargament and Mahoney (2011) found NRC and depression (measured by the Centre for Epidemiological Research-Depressed Mood Scale [CES-D]; Radloff, 1977) to be positively correlated, $r = .32$, $p < .01$. In the second of these studies, Khan and Watson (2006) also reported a positive correlation between NRC and depression (measured by the BSI; Derogatis & Melisaratos, 1983), $r = .43$, $p < .01$. These studies both employed a fully Muslim sample and participants comprised university students along with community-based adults, thus a more generalisable sample in terms of answering the question of this review. The results from these two studies can be grouped together fairly reliably since they employed the same measure of religious coping. Correlations found were weak to moderate, suggesting that NRC may be implicated in the development of depression in an adult Muslim population, but also that NRC only accounts for part of the variance in this relationship.

Two studies employed a variation of the RCOPE as a measure of religious coping [8 and 10]. Feder et al. (2013) adopted a six-item version which has

shown acceptable psychometric properties in the literature (e.g. Pargament, Koenig & Perez, 2000), yet Feder et al.'s (2013) study yielded quite low internal consistency values and they therefore only employed two out of three items from the NRC subscale in their analysis (anger at God and feeling punished by God). This was a weakness of the study, as there were no a priori reasons to exclude one of the NRC items and values for Cronbach's α were not provided. The results of the correlations of the two NRC items with depression (measured by the Positive and Negative Affect Schedule [PANAS]; Watson, Clark & Tellegen, 1988) were $r = .16, p < .05$ for feeling angry at God and $r = .33, p < .001$ for feeling punished by God. The PANAS (Watson et al., 1988) is a measure of positive and negative affect more broadly rather than a specific measure of depression. The results obtained indicate weak correlations, and add some weight to the argument that NRC may be implicated in the development of depression yet specifically through a correlation with negative affect as opposed to other depressive symptoms. These results also question whether NRC is in fact a single construct, or whether it is comprised of more than one concept i.e. punishing God appraisals and anger at God.

Braam et al. (2008) found that upon omission of the *punishing God appraisal* item, internal consistency of the NRC subscale increased in their study employing an elderly Dutch sample population (Cronbach's α increased from .27 to .57). The increased internal consistency value is still considered poor and just above the acceptable value of $\alpha = .5$ (Kline, 2000), which raises questions about the validity of the NRC scale in a sample of elderly Dutch. Based on this finding, and quite low internal consistency of the NRC subscale across ethnic groups in their study, Braam et al. (2010) analysed each of the five NRC items separately.

This study included a Muslim subsample and is included in this review [10]. The authors did not aim to investigate the NRC items separately, yet much like Feder et al., (2013) unacceptable internal consistency of the NRC scale prompted this decision. Braam et al. (2010) found that four out of the five items of the NRC scale were significantly associated with depressive symptoms; punishment appraisal, feeling abandoned, questioning the existence of God, and expressing anger at God. They also found that the punishing God appraisal item was the most frequently endorsed NRC item across the four cultural groups in their study (Dutch, Moroccan, Turkish and Surinamese/Antillean), and interestingly the one item that did not load on the NRC subscale across ethnic groups. These two studies [8 and 10] cast doubt on the validity of the NRC subscale as a single construct and illustrate that punishing God appraisals may be an important factor in the development of depression amongst adult Muslims, thus perhaps meriting separate consideration in future studies. In line with these findings, the next two studies addressed in this review [6 and 7] employed the PMIR (Abu Raiya et al., 2008) as a measure of religious coping that also includes punishing God appraisals.

In their development and validation of the PMIR, Abu Raiya, Pargament, Mahoney and Stein (2008), found that punishing Allah appraisals significantly predicted depression (measured by CES-D; Radloff, 1977) $r = .14, p < .05$. Similarly, Khan, Watson and Chen (2011) found that punishing Allah appraisals (measured by the PMIR; Abu Raiya et al., 2008) significantly correlated with poor psychological functioning including depression (measured by the Global Health Questionnaire [GHQ]; Goldberg & Hillier, 1979) $r = .20, p < .001$. Both of these studies employed completely Muslim samples, thus illustrating the

importance of punishing Allah appraisals, whether as part of, or separate from, the NRC subscale. Unfortunately, Khan et al. (2011) did not investigate the relationship of religious coping with depression specifically; rather a general psychological functioning measure was employed, which means that it is difficult to draw conclusions in terms of depression. Similarly Nurasikin et al. (2012) found a positive correlation with the RCOPE and a general measure of psychopathology including depression, yet they did not specify the relationship with depression on its own. They employed the Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995) and found a moderate correlation of $r = .47, p < .01$ with the RCOPE in a population of Malay psychiatric patients (47.4% Muslim). This result should be interpreted with caution given that the sample population used is quite different from the one posed in the question of this review i.e. adult Muslims in general, (representing non-clinical populations).

1.12.5 Discussion of literature review findings. In order to answer the question: Are religious coping and experiential avoidance implicated in the development of depression in an adult Muslim population, a systematic review of the literature was conducted according to guidelines set out by Wright et al. (2014). Results of the review illustrated that both religious coping and EA were not investigated together, and far more studies were found investigating the role of religious coping than that of EA (seven versus three). In each of the 10 studies reviewed, results indicated that either EA (or another form of avoidance coping), or a form of religious coping, was implicated in the development of depression or poor psychological functioning including depression. This may very well be down to publication bias whereby only significant results get published, or it may be an indication of the role of EA and religious coping in the development of

depression amongst adult Muslims. All of the studies reviewed adopted a cross-sectional design, therefore making causal relationships difficult to ascertain. Two studies [3 and 7] conducted regression analyses, indicating that EA and religious coping (respectively) predicted psychological distress including depression and depressive symptoms (respectively). There were no longitudinal studies found, and this means that the question of whether EA and religious coping are implicated in the development of depression cannot be answered. It would be more accurate to state that according to the current literature, there certainly seems to be a positive relationship between the presence of EA or NRC and psychological distress including depression, although these relationships are not necessarily causal.

The magnitude of the relationships reported in the studies reviewed generally yielded weak to moderate values. Although these were all in the predicted direction (i.e. more EA or NRC was correlated with more psychological distress including depression), these relationships are not very strong. In other words, it seems that each construct on its own does not account for a great deal of the variability of psychological distress including depression. Generalisations such as these are difficult to make with any certainty though given the variability in measures used and sample populations employed across the 10 studies. There does seem to be some evidence for the role of EA and religious coping in adult Muslims who experience psychological distress including depression. Despite the fact that none of the 10 studies discussed their results in terms of a model of depression, the tentative results obtained from this review lend themselves to Beck's (1987b) cognitive model of depression. It could be argued that this model is applicable to adult Muslims, and that in these

populations the cognitive vulnerability described by Beck (1987b) is manifested, at least in part, by NRC, and mediated by the presence of EA, thus leading to depression. True to Beckian and CBT models of psychopathology, it may be that depressive symptoms are caused by, and also maintained by, the presence of NRC and EA. Clinical implications of this literature review will be considered in more detail within the context of this chapter as a whole in the following section.

1.13 Clinical Implications

Muslims' experiences of depression may be different to that of non-Muslims (Beshai et al., 2012). Muslims are more likely than any other group to employ religious coping when faced with depression (Loewenthal et al., 2001). Different views of the self, the world and the future upheld by Muslims may be informed by the teachings of Islam and therefore implicate different treatment targets for depression. The intricacies of the Islamic self-concept along with notions of the origin and maintenance of mental ill health may point to the need to incorporate Islam, or at the very least, concepts that are in line with the teachings of this religion, into treatments for depression (e.g. Meer et al., 2012). Islam is seen as a way of life by its followers and they integrate its teachings into every aspect of their daily lives (Ali et al., 2004). The literature on how depression presents in Muslims is both scant and inconclusive. Cognitive Behavioural approaches to depression generally target Negative Automatic Thoughts (NAT; Beck, 1967), but what if these present differently in Muslims? Indeed significantly less guilt and self-reproach were found in samples of depressed Muslims (Bazzoui & Al-Issa, 1966; Stompe et al., 2001), which suggests that not all aspects of the cognitive model are cross-culturally generalisable.

It appears that EA may be a feature of the experience of depressed Muslims (e.g. Masuda et al., 2014; Kuo, Arnold & Rodriguez-Rubio, 2013; Khawaja, 2007). Acceptance and Commitment Therapy (ACT; Hayes & Wilson, 1994) is a form of talking therapy that specifically targets EA through acceptance (as opposed to avoidance), and promotes commitment and behaviour change to increase psychological flexibility. ACT explicitly borrows ideas from Buddhism, yet the principles of ACT are very compatible with the teachings and philosophy of Islam, e.g. acceptance of all the situations that God has created (both good and bad) whilst fostering responsibility and promoting positive action (Ali et al., 2004). It may be then, that treatment recommendations for depressed Muslims need to incorporate important aspects of Islam such as religious coping, in order to be culturally appropriate and effective (e.g. fusion therapy; Meer et al., 2012). Also perhaps if EA proves to have a robust relationship with depressive symptoms in Muslim populations, it may be important to employ ACT principles in a culturally appropriate way.

1.14 Summary and Rationale

Depression may present differently in Muslims (Beshai et al., 2012). Religious coping and EA/acceptance are two different forms of coping (Lhewa, 2010). According to Beck's (1987b) model of depression, the way individuals cope with stressors may lead to the development of depression. PRC and acceptance are problem-focused, adaptive forms of coping and correlate with lower symptoms of depression (Lhewa, 2010). NRC and EA are emotion-focused, maladaptive forms of coping and correlate with higher depressive symptoms (Hayes et al., 2004; Pargament et al., 2011). Islamic teachings foster acceptance and positive action, and an a priori prediction is that well adjusted,

practicing Muslims will engage in PRC and acceptance, whilst those engaging in NRC and EA will display more depressive symptoms. The current study proposes the mediation model in Figure 3 whereby the relationship between NRC and depression is mediated by EA. This is based on findings in the literature, which place EA as a mediator between maladaptive forms of coping like NRC, and psychopathology such as depression (e.g. Costa & Pinto-Gouveia, 2011; Kashdan et al., 2006).

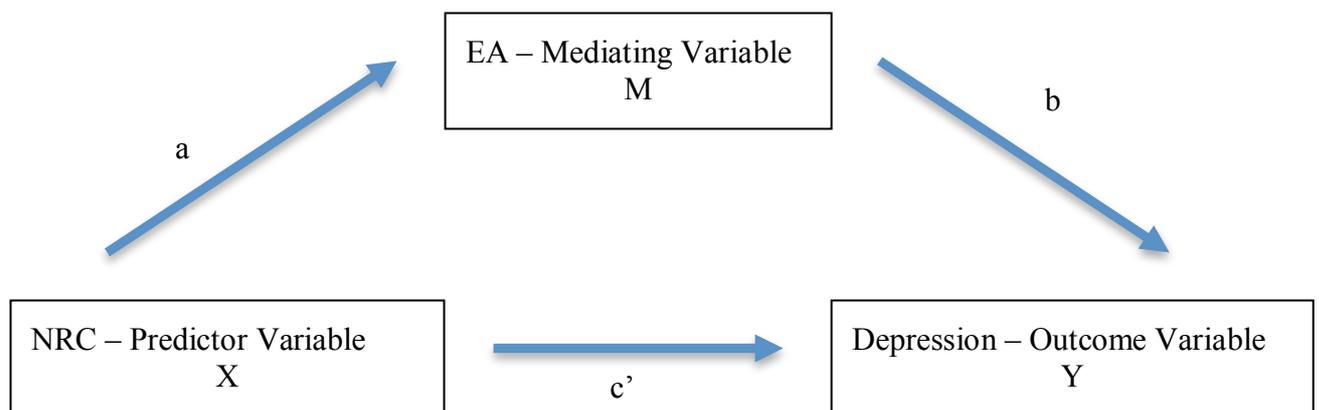


Figure 3. Mediation model (Baron & Kenny, 1986).

Note. EA = experiential avoidance; NRC = Negative Religious Coping; a = indirect effect; b = indirect effect; c' = direct effect; X = predictor variable; M = mediating variable; Y = outcome variable.

Based on the literature reviewed and the mediation model presented, the hypotheses in the following section are proposed.

1.15 Hypotheses

1. Higher levels of negative religious coping will significantly correlate with higher symptoms of depression in an adult Muslim population (path c').

2. Higher levels of experiential avoidance (lower acceptance) will significantly correlate with higher symptoms of depression in an adult Muslim population (*b* path).

3. Higher levels of positive religious coping will significantly correlate with lower symptoms of depression in an adult Muslim population.

4. Higher levels of experiential avoidance (lower acceptance) will mediate the relationship between higher negative religious coping and higher symptoms of depression in an adult Muslim population (*a* and *b* paths).

2. Method

2.1 Chapter Overview

This chapter describes the methodology adopted in the study. It begins with a brief description of the design, followed by ethical approval and ethical considerations. The procedure for recruitment and data collection is then presented along with participant characteristics and a power calculation. The chapter concludes with a description of the measures used and the planned statistical analyses.

2.2 Design

A cross-sectional, correlation and mediation design addressed the hypotheses. This design was chosen, as it is the best fit for the hypotheses, which propose relationships between two variables collected at one time-point, as well as a mediation model.

2.3 Ethical Approval

Ethical approval was granted by The Faculty of Medicine and Health Sciences Research Ethics Committee at The University of East Anglia on 9th April 2014 (Ref: 2013/2014 - 39; Appendix A).

2.3.1 Ethical considerations. In obtaining consent, participants were not asked to provide their names or signatures, as this can be culturally inappropriate given the sample population (Jobson & O’Kearney, 2008). The cover page of the questionnaire pack (Appendix B) stated that by completing and returning questionnaires, participants gave consent to their data being used in the study. This is akin to the protocol followed by other studies employing similar populations (e.g. Jobson & O’Kearney, 2008). Participants were informed in the participant information sheet (Appendix C) that they could change their mind

about participating in the study without giving a reason at any time up to when they returned the questionnaire pack. They were also informed that they did not have to complete any of the questions that they did not want to. The participant information sheet stated that since no identifiable information was on the questionnaire packs, once returned, the researcher was not able to identify individual questionnaires in order to remove them from the study.

Information provided by participants for the study was kept confidential according to current data protection policy. Questionnaires were kept in a locked cabinet at the University of East Anglia (UEA) for the duration of the study, and will be securely archived for 10 years.

Throughout participation in the study, in the event of participants experiencing distress, they were advised to contact their community leader, a Muslim Community Helpline, or The Samaritans. Contact details for these groups were provided in the participant information sheet and at the end of the questionnaire pack. Contact details for the primary researcher and an external source (Professor Ken Laidlaw, director of the Doctorate in Clinical Psychology Programme at UEA) were provided in the participant information sheet in case a participant had concerns about how the study was run or wanted to make a complaint.

Coercion, deception and debriefing did not appear to pose any difficulties in this study. Participants had the opportunity to read the information sheet and keep it for at least 24 hours (usually one week) before deciding to participate or not. They were asked to approach the community leader or the primary researcher if they wanted to participate, therefore decreasing the chance of coercion. Additionally, participants were told that where possible, the

community leader was not informed whether potential participants actually participated in the study or not. Deception is not a feature of this study as participants were informed in the participant information sheet that they were going to be asked questions about their coping styles, religious beliefs and mood. A debrief was deemed unnecessary and not practical (since some questionnaires were returned by post). The last page of the questionnaire pack thanked the participant and provided the researcher's contact details should the participant wish to contact them or request a copy of the results of the study.

2.4 Procedure

Participants were recruited from Arabic-speaking Muslim community groups and Muslim associations in the UK. Certain geographical areas such as parts of London were prioritised based on local demographics (predominantly Arabic-speaking Muslim residents). Personal contacts of the primary researcher in these areas were also contacted in order to gain access to potential participants through snowball sampling methods.

2.4.1 Invitation. Community leaders e.g. president of the Egyptian society in London and treasurer of the West Norfolk Islamic Association were contacted, and the primary researcher explained the study and inclusion criteria to them. Copies of the participant information sheet were translated to Arabic following the WHO (2013) guidelines as described in section 2.6 for the questionnaire pack, and given to the leaders to distribute amongst interested members of the community (please see Appendix C for the English version and Appendix D for the Arabic version). The primary researcher was available to distribute information sheets and speak to interested community members about the study.

2.4.2 Data collection. The primary researcher distributed questionnaire packs (Appendix B) to interested participants by returning to each site at a specified later date. The community leaders were also provided with questionnaire packs for those interested in participating in the study. Best practice guidelines stipulate a 24-hour period between giving participants the information sheet and collecting data. This procedure was followed as default, but if participants requested a questionnaire pack on the researcher's first visit (after having read and understood the information sheet), they were provided with one. Each pack contained a stamped addressed envelope for participants to return the completed questionnaires to the primary researcher's UEA address. Participants were given the opportunity to enter into a prize draw to win one of two £25 Amazon vouchers. If they wished to take part in this draw, they were asked to complete a separate form with their personal details; name and either phone number, or email address or postal address (please see Appendix E for the English version and Appendix F for the Arabic version of the prize draw information sheet). This form was collected by the community leader or primary researcher in the first instance and separated from the questionnaire pack in order to keep personal details separate from the questionnaires. Where this was not possible, participants were asked to enclose the prize draw form in the stamped addressed envelope along with the questionnaire pack, and this form was separated from the data on receipt. After the results of the prize draw, (when a sufficient sample size was obtained), all participant personal information was destroyed. Figure 4 illustrates the recruitment procedure.

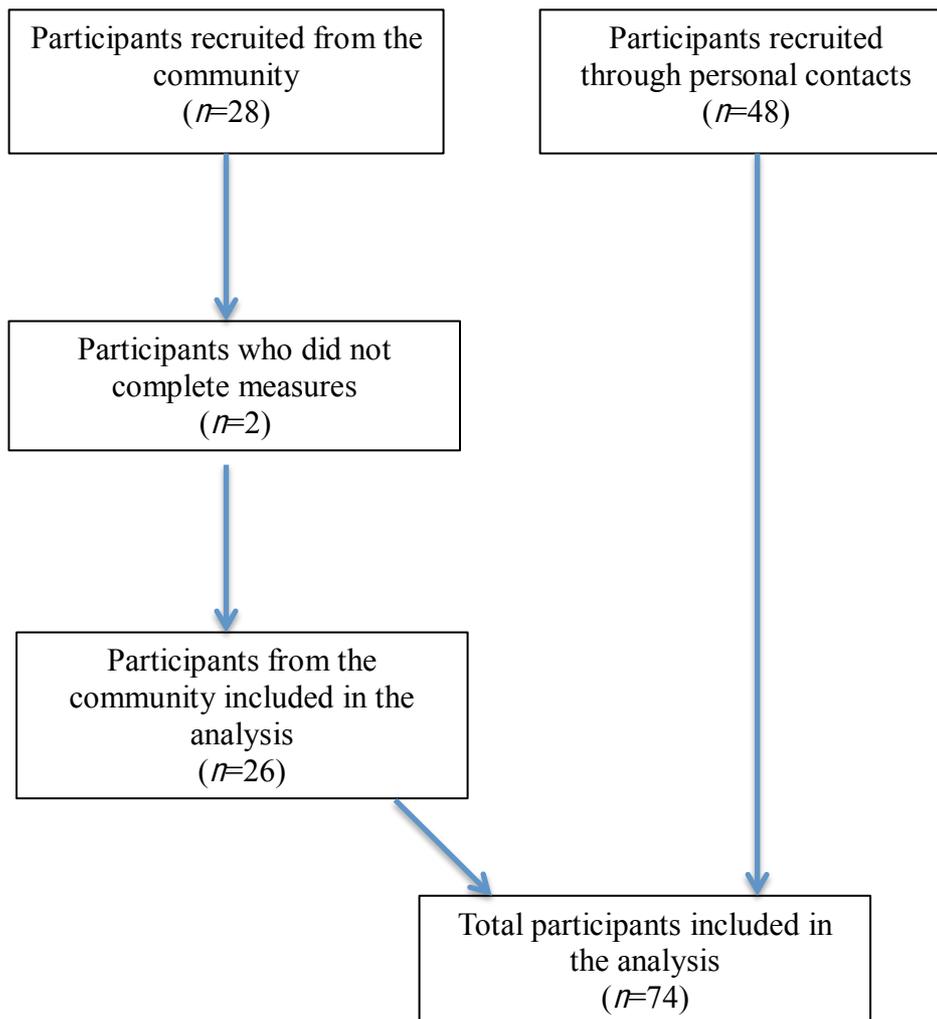


Figure 4. Flowchart for participant recruitment procedure.

2.4.3 Additional contact. The primary researcher's UEA email address and study mobile phone number were included in the information sheet in case participants had any questions. Summaries of the findings of the study were provided to community leaders, and individual participants could request a copy directly from the primary researcher.

2.5 Participants

Participants were recruited from a community-based sample including local Muslim groups, women's groups, and community centers. A community sample rather than a clinical one was employed because a correlational design

was the most appropriate given the research hypotheses and more variability in the data was expected from a community sample. Inclusion criteria were first generation, Muslim, Arabic-speaking adults (at least 18 years old). Participants had to be literate in Modern Standard Arabic in order to complete the questionnaires. Exclusion criteria included non-Muslim individuals, those who were not first generation immigrants, individuals under 18 years of age, and people who did not have sufficient grasp of the Arabic language needed to complete the questionnaires.

2.5.1 Power and sample size. In order to ensure that the planned statistical analyses would have enough power to detect statistical significance, sample size calculations were conducted. For the calculations of three bivariate correlations the computer program G*Power version 3.1.3 (Faul, Erdfelder, Buchner & Lang, 2009) was used. In each case, the significance level was set to $\alpha = .05$, statistical power was .95, and the calculations were based on a one-tailed analysis since the direction of the correlations were proposed in the hypotheses. For the first correlation (higher NRC correlating with higher depressive symptoms) an effect size of $r = .43$ was reported by Khan and Watson (2006). Their study was conducted in a Muslim population using measures translated into Urdu and hence is the most representative in terms of the sample population employed for this study. This power calculation produced a target sample size of 54.

For the second correlation (higher EA correlating with higher depressive symptoms) effect sizes pertaining to mixed, mainly Caucasian samples were employed, as EA using the AAQ-II has not been investigated in an Arabic-speaking Muslim population (to the author's knowledge). An effect size of $r = .71$ was reported for this relationship by Bond et al. (2011), yielding a proposed

sample size of 16 for the present study. More conservative effect sizes have been reported in the literature e.g. $r = .52$ (Kashdan et al., 2006) and in fact Hayes, Luoma, Bond, Masuda and Lillis (2006) calculated a mean effect size of $r = .42$ for this relationship in a review of the literature. Estimating the most conservative effect size of $r = .42$ in order to yield the maximum sample size required, the G*Power calculation recommended a sample size of 56 for the present study.

For the third correlation (higher PRC correlating with lower depressive symptoms) literature on Muslim populations has yielded non-significant results, therefore an effect size cannot be computed for this relationship employing a Muslim sample. Significant correlations have been reported in non-Muslim (Caucasian and mainly Christian) samples however, and Cole (2005) reported an effect size of $r = .55$ for this relationship, which would result in a minimum proposed sample size of 31 based on the G*Power calculation.

For the mediation analysis, Fritz and MacKinnon (2007) recommend using the bias-corrected bootstrap test, as it has been empirically proven to be extremely powerful. Further evidence for the use of this form of mediation analysis is detailed in section 2.7.4 at the end of this chapter. To estimate the minimum sample size required given .8 power, Fritz and MacKinnon (2007) provide a table that uses effect sizes of the a and b paths as illustrated in the mediation model in Figure 5. The mediation model proposed in this study has not been previously employed in the sample population in question (Arabic-speaking Muslims), and therefore effect sizes are estimated based on the most appropriate relationships found in the literature between the three variables.

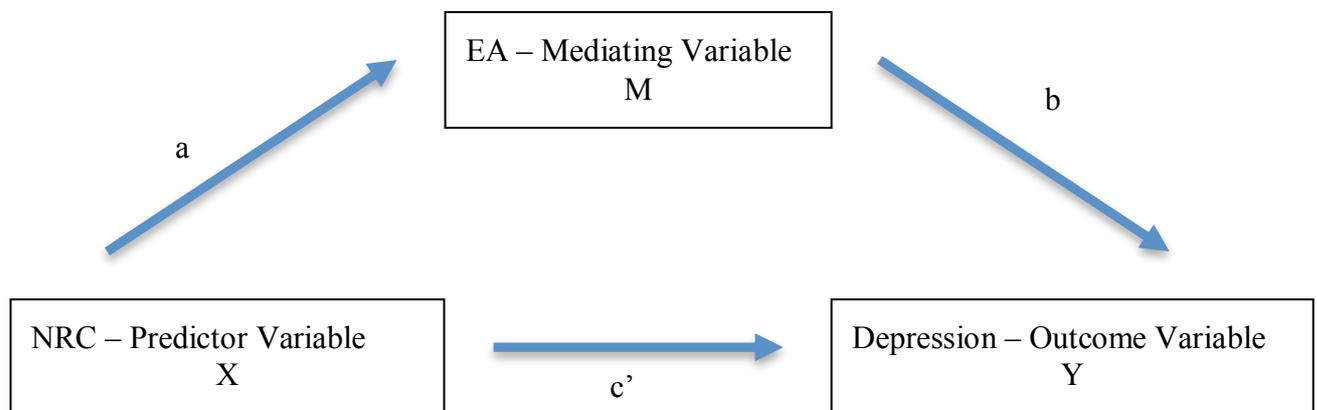


Figure 5. Mediation model (Baron & Kenny, 1986).

Note. EA = experiential avoidance; NRC = Negative Religious Coping; a = indirect effect; b = indirect effect; c' = direct effect; X = predictor variable; M = mediating variable; Y = outcome variable.

For the a path an effect size of $r = .47$ was reported by Knabb and Grigorian-Routon (2013). This study measured the relationship between NRC and EA in a sample of Christian university students. Although the sample population is quite different from the sample employed by this study, and they administered a different measure of EA, no other occurrence of these two constructs was found in the literature. This illustrates the novelty of the current study and indicated that an effect size of $r = .47$ was the best estimate for the a path. For the b path, effect sizes of between medium and large have been reported in the literature (e.g. $.47$ by Fledderus, Bohlmeijer & Pieterse, 2010; $.5$ by Plumb, Orsillo & Luterek 2004). In the first study, Fledderus, Bohlmeijer and Pieterse (2010) administered a Dutch translation of the AAQ-II to adult, Dutch, mainly female participants with mild to moderate anxiety and depression. This was seen as an acceptable comparison to the current study as the same measure

of EA was employed and also translated to another language (as per the present study). The study carried out by Plumb et al. (2004) used the Acceptance and Action Questionnaire-I (AAQ-I), which is an older version of the AAQ-II and administered it to American male veterans being treated for PTSD. Despite these large effect sizes, the more conservative value of $r = .42$ for a mean effect size of the relationship between EA and depression reported by Hayes et al. (2006) was employed in the sample size calculation for the current mediation analysis. With an estimated effect size of $r = .47$ for the a path and $r = .42$ for the b path, Fritz and MacKinnon (2007) recommend a sample size of 71 to achieve .8 power when conducting a bias-corrected bootstrapped mediation analysis. This study therefore aimed to recruit a minimum of 71 participants.

2.6 Measures

The measures employed in this study were translated to Arabic in order to maximise understanding of the participants and tap into constructs and ideas specific to Islam, which was originally recorded in Arabic through the Qur'an (please see Appendix B for the English version and Appendix G for the Arabic version of the questionnaire pack). Furthermore, those who are literate in Arabic were expected to be less acculturated to British norms, be first generation immigrants, and uphold predominantly Muslim values (as per inclusion criteria). The Arabic language can be divided into three subtypes (Cote, 2009). Colloquial Arabic consists of many dialects and differs greatly from one Arabic-speaking country to another. Modern standard Arabic on the other hand upholds a more formal approach to the language and is understood ubiquitously across Arabic-speaking countries. This is the subtype that is used in administration and education due to it being the same across countries. The third subtype is classical

Arabic which is the archaic language used in the Qur'an. Not all Arabic-speaking Muslims would have a good grasp of classical Arabic as it is only used in the context of the Qur'an. Due to its universality, modern standard Arabic was the subtype of the Arabic language chosen for the purpose of translating the material for this study.

The measures were translated to modern standard Arabic according to WHO guidelines, which stipulate forward and back translation before piloting on a population similar to that of the study (WHO, 2013). The WHO emphasise that the focus of the final material be cross-cultural and conceptual, rather than linguistic or literal equivalence. Forward and back translation of the material was carried out by bilingual individuals who were also professional translators. An expert panel consisting of two trainee clinical psychologists and two expert translators (all bi-lingual in Arabic and English) then considered the back translation for inconsistencies and possible inadequate translations of certain concepts. Inadequate translations were amended through consensus of the panel. The back-translated material was independently compared to the original copy by a clinical psychologist and the primary researcher in order to highlight discrepancies. These were then collated and changed in the Arabic version by the professional translators accordingly before piloting. Overall, very minor changes to the translated and back-translated material were required. Five phrases were amended in order to more fully capture the psychological concept being conveyed rather than having literal equivalence, e.g. changing *feeling blue* to *feeling sad*.

The Arabic questionnaire pack was piloted on five individuals meeting the inclusion criteria for the study. Feedback was sought from the pilot, and

suggestions were addressed by consensus of two bilingual individuals (one of which was the primary researcher and the other a professional translator). Where consensus could not be reached, an external source (another bilingual trainee clinical psychologist) was consulted. In total, seven changes resulted from the pilot, and these were mainly grammatical errors, spelling mistakes and again substituting one word for another, which better grasped the concept being explained.

The questionnaires employed in this study were freely available to download and use. The total time to complete the questionnaire pack was around 25 minutes and the English version can be found in Appendix B.

2.6.1 Brief RCOPE (Pargament et al., 1998). This is a 14-item self-report measure of PRC and NRC. Items are scored on a four-point Likert scale with answers ranging from *I do not do this at all* to *I do this a lot*. The first seven items yield a PRC score, and items eight to 14 yield an NRC score. Higher scores on each subscale indicate more use of that type of religious coping. Using a translated Urdu version of the Brief RCOPE, Khan and Watson (2006) administered the scale to a Muslim population. Cronbach's alphas for PRC and NRC were $\alpha = .75$ and $\alpha = .60$ respectively, indicating acceptable internal consistency of the two scales. This is the gold standard measure of religious coping in the literature.

2.6.2 Acceptance and Action Questionnaire-II (Bond et al., 2011). This is a self-report seven-item questionnaire measuring EA and its converse, acceptance. Answers are scored on a seven-point Likert scale ranging from *never true* to *always true*, and higher scores indicate more EA (lower scores indicate more acceptance). The AAQ-II has been validated on a clinical and non-clinical

sample of around 2,800 mainly Caucasian, English speaking adults (Bond et al., 2011). Higher levels of EA were associated with higher levels of general psychopathology including depression. Bond et al. (2011) demonstrated good psychometric properties with high internal consistency (Cronbach's $\alpha = .84$) and good test re-test reliability at three and 12 months ($r = .81$ and $r = .79$ respectively). A Spanish version of the scale found good internal consistency, reporting Cronbach's alpha to fall between $\alpha = .75$ and $\alpha = .93$ (Ruiz, Langer-Herrera, Luciano, Cangas & Beltran, 2013), and an unpublished Arabic translation is available on the Association for Contextual Behavioral Science website (contextualscience.org; Mustafa, n.d.). The author of this measure and Stephen Hayes (President of the Association for Contextual Behavioral Science and author of many papers on EA) were contacted for permission to use the Arabic version of the scale, which they granted. No psychometric data were available for the Arabic version of the scale and therefore the current study translated the AAQ-II independently. Upon translation and back translation of the AAQ-II English version, some inconsistencies were found between the two Arabic versions. These were resolved by two bilingual individuals; the primary researcher and a professional interpreter.

2.6.3 The Hopkins Symptom Checklist (Derogatis et al., 1974). This is a self-report inventory assessing mental health symptoms including a 15-item depression subscale. For the purpose of this study, only the depression subscale was used. Items were scored on a four-point Likert scale ranging from *not at all* to *extremely*. Higher scores indicate higher symptoms of depression. The depression subscale has been demonstrated to have good internal consistency

(Cronbach's $\alpha = .86$) and test-retest reliability ($r = .81$; Derogatis et al., 1974).

The HSCL is regularly translated and used in cross-cultural research (e.g. Mollica, Wyshak, Marneffe, Khuon & Lavelle, 1987b). In fact, more recently, the scale was translated into Arabic and used on an Iraqi population by Wagner, Schulz and Knaevelsrud (2012). It demonstrated good psychometric properties with high internal consistency (Cronbach's $\alpha = .89$) in this population. Test re-test data were not available for the Arabic version but a version translated to Kiswahili yielded a test re-test coefficient of $r = .85$ at one week (Lee, Kaaya, Mbwambo, Smith-Fawzi & Leshabari, 2008).

For clinical purposes the total score of the HSCL depression subscale is divided by 15 therefore yielding a mean score. Mean scores of 1.75 and above are interpreted as an indication of clinical levels of depression (Winokur, Winokur, Rickels & Cox, 1984). Since this study is not concerned with whether participants meet the clinical cutoff point for depression, total scores on the HSCL were used as they ensured greater spread of the output of this construct. This measure was chosen as opposed to other depression measures e.g. BDI (Beck et al., 1961) as it is deemed a culturally robust measure of depression in Arabic-speaking populations (e.g. Gupta, Nayak, Khoursheed & Roy, 1999). The HSCL featured once in the literature review presented in section 1.12 of this thesis (Khawaja, 2007). There appears to be no prominent measure of depression which best captures this construct within an Arabic-speaking Muslim population, as evidenced by the numerous measures adopted by the studies reviewed. Finally, the HSCL is freely available to access and use, whereas other measures (e.g. BDI; Beck, 1961) would have incurred costs that may not have been possible to cover by the allocated budget for this thesis.

2.6.4 Religiosity. Two questions on religiosity were included in the questionnaire pack, assessing how religious participants perceive themselves to be. The questions were scored on a five-point Likert scale (*not at all* to *extremely*) asking how religious the participant considers him/herself to be and how important Islam is in their life. These questions are based on concepts from the PMIR (Abu Raiya et al., 2008), which is a self-report measure developed by the same author as the Brief RCOPE and displays good psychometric properties in a Muslim sample.

2.6.5 Marlowe-Crown Social Desirability Scale, Short Form C (MC-SDS C; Reynolds, 1982). This is a 13-item self-report measure of social desirability developed for use with non-clinical samples. Answers are scored on a *yes/no* basis and higher scores indicate more social desirability. Zook & Sipps (1985) found KR-20 overall to be .74 (a special case of Cronbach's alpha; Cronbach 1951, cited in Zook & Sipps, 1985). Concurrent validity for the original 33-item scale was found to be $r = .93$ (Reynolds, 1982). This is the most widely used measure of social desirability. Expressing doubt in God or religion is generally considered taboo in Islam. This may have affected respondents' answers in terms of trying to portray themselves or Islam in a positive light (Abu-Raiya, Pargament, Stein, & Mahoney, 2007). This scale was included in order to measure respondents' tendency to provide answers that would be viewed more positively by their peers and in line with social norms.

2.6.6 Demographics. The questionnaire pack (Appendix B) included brief questions on demographic information such as age, gender, country of origin, and how long the participant had lived in the UK. In order to maintain

brevity of the questionnaire pack, demographic information such as which recruitment site (e.g. a community center) the participant was recruited from was omitted.

2.7 Planned Statistical Analysis

Data were recorded by participants on the questionnaire pack and later entered into a Microsoft Excel spreadsheet. No personal identifiable data were included in the spreadsheet. All data were analysed using Statistical Package for Social Science (SPSS) version 22. Descriptive statistics were obtained and psychometric properties of the measures were assessed. Data were examined for normality, to determine whether parametric or non-parametric tests were suitable. Data were found to be non-normally distributed and non-parametric tests were employed in the analyses.

Parametric statistical tests rely on a number of assumptions, such as a normally distributed data set, in order to yield accurate results (Field, 2009). Non-parametric statistical tests however do not assume a normally distributed data set and are therefore more appropriate for data sets that violate this assumption (such as the present one). Non-parametric tests are less powerful than their parametric counterparts meaning that they are less able to detect statistical significance in a data set (Hoskin, n.d.). Additionally, non-parametric tests such as Spearman's rho for example, rank data points before calculating a correlational coefficient of the variables in question (Field, 2009).

One way to overcome the violation of a normally distributed data set is to transform the data (Field, 2009). There are many ways that data can be transformed (e.g. log transformation or square root transformation) so that they bear more resemblance to a normal distribution and hence do not violate this assumption

when employing parametric statistical tests. Grayson (2004) notes that although there are no statistical consequences per se of using a transformed data set, there may be scientific or empirical costs to doing so. The argument put forth is that the transformed data would then pertain to a different construct than the one originally measured, and therefore claims such as clinical implications derived from the results may be inaccurate (Grayson, 2004). Owing to Grayson's (2004) argument, the data set was not transformed, and non-parametric tests were employed in the analyses.

2.7.1 Hypothesis one: higher levels of negative religious coping will significantly correlate with higher symptoms of depression in an adult Muslim population. To test this hypothesis, a one-tailed Spearman's rho correlation was conducted.

2.7.2 Hypothesis two: higher levels of experiential avoidance will significantly correlate with higher symptoms of depression in an adult Muslim population. To test this hypothesis, a one-tailed Spearman's rho correlation was conducted.

2.7.3 Hypothesis three: higher levels of positive religious coping will significantly correlate with lower symptoms of depression in an adult Muslim population. To test this hypothesis, a one-tailed Spearman's rho correlation was conducted.

2.7.4 Hypothesis four: higher experiential avoidance will mediate the relationship between higher levels of negative religious coping and higher symptoms of depression in an adult Muslim population. To test this hypothesis a mediation analysis was employed. Mediation models propose that the relationship between a predictor variable (NRC in this case) with an outcome

variable (depressive symptoms in this case) is at least partially accounted for, by a mediating variable (EA in this case). According to Baron and Kenny (1986) for full mediation to be statistically significant the total effect of X (independent variable) on Y (dependent variable) must be significant, the total effect of X on M (mediating variable) must be significant, the effect of M on Y (controlled for X) must be significant, and the direct effect of X on Y (adjusted for M) must be non-significant. Partial mediation can be demonstrated if in the last condition, the effect of X on Y controlling for M is smaller than the total effect of X on Y. The Sobel test was historically employed to determine the significance of the indirect effect (Baron & Kenny, 1986). More recently, researchers have leveled criticism against this approach (e.g. Hayes, 2013; Shrout & Bolger, 2002). One of Hayes' (2013) main concerns is that this analysis assumes that the sampling distribution of the indirect effect is normally distributed, which it often is not; indeed, the data for the current study were found to be non-normally distributed. Consequently, Baron & Kenny's (1986) approach to mediation analysis along with the Sobel test require quite large sample sizes in order to achieve power ample enough to detect a statistically significant indirect effect (Fritz & MacKinnon, 2007).

An alternative way to test for mediation, i.e. the indirect effect of a mediating variable, is to use bootstrapping (Hayes, 2013). In fact Fritz and MacKinnon (2007) have ascertained that bias-corrected bootstrapping is one of the most powerful tests of an indirect effect. Bootstrapping is a resampling method, whereby observations from the original data set are resampled many (often thousands) of times with replacement from the original data set, creating an empirically derived sampling distribution (Field, 2009; Hayes, 2013).

Bootstrapping is nonparametric, and therefore appropriate for non-normally distributed data (Hayes, 2013). Bias-corrected bootstrapping adjusts for skew in the bootstrapped data (Fritz & MacKinnon, 2007), and Jose (2013) advocates the use of bootstrapping in mediation to ensure that assumptions of the test employed are met. EA as a mediator between NRC and depression was therefore tested using the bias-corrected bootstrap test.

2.7.5. Exploratory analyses. Social desirability was explored as a confounding variable in the above hypotheses. Non-parametric partial correlations (Spearman's rho) controlling for social desirability were conducted to ascertain if social desirability was in fact a confounding variable on the proposed relationships between the primary variables.

3. Results

3.1 Chapter Overview

This chapter begins by describing preliminary data screening including the treatment of missing data and tests for normality of the data. Descriptive and demographic data are then presented, and the original research hypotheses are subsequently tested using the correlational and meditation methods described in Chapter 2. Exploratory analyses of the data around social desirability are considered and the chapter concludes with a summary of the results.

3.2 Preliminary Data Screening

The data were spot checked for accuracy of data entry and measures were screened for missing data. The data set was then subjected to tests of normality.

3.2.1 Missing data. Of the total 76 questionnaires returned, two of these (2.6%) included only demographic data and questionnaire items were completely blank. These were omitted from further analysis. Measures for the independent variables of PRC, NRC, EA and the dependent outcome variable of depression were examined for missing data. Since less than 5% of the data were missing (varying between 0.4% and 1.4% across all measures), missing values were replaced by mean substitution as recommended by Tabachnick and Fidell (2007). More data were found to be missing from the social desirability measure, which is not a primary variable for this study. Three participants omitted more than two (out of a possible 13) responses on this measure, which means that more than 15% of social desirability data were missing for these participants, and therefore their social desirability total scores were not used in the analysis. The remaining missing social desirability data comprised 0.9% and were therefore also replaced by mean substitution (Tabachnick & Fidell, 2007).

3.2.2 Testing for normality. Histograms of the five variables were visually inspected and the Shapiro-Wilk test of normality was conducted. This test was chosen over any other tests (e.g. the Kolmogorov-Smirnov test) as it has been proven to be the most powerful and is appropriate for use with relatively small sample sizes (Razali & Wah, 2011). Upon visual inspection of the histograms, depression scores appeared fairly normally distributed while PRC and social desirability scores appeared negatively skewed, and NRC and EA scores appeared positively skewed. The histograms for these data are presented in Appendix H. Table 2 lists skewness and kurtosis values along with their standard error and the range of each variable. Z-scores were calculated for skewness and kurtosis of the five study variables (Appendix I) and significant scores for skewness and kurtosis are denoted by asterisks in Table 2. All of the variables indicated significant skewness, or both significant skewness and kurtosis. Shapiro-Wilk tests revealed that none of the study variables were normally distributed; PRC $W(74) = .81, p < .001$; NRC $W(74) = .89, p < .001$; EA $W(74) = .86, p < .001$; depression $W(74) = .96, p < .05$; social desirability $W(71) = .89, p < .001$.

Table 2

Normality Characteristics of the Data

Measure	<i>N</i>	<i>M (SD)</i>	Skewness (<i>SE</i>)	Kurtosis (<i>SE</i>)	Range
PRC	74	25.38 (3.08)	-1.61 (.28)***	2.71 (.55)***	14-28
NRC	74	12.07 (4.44)	1.08 (.28)***	.69 (.55)	7-24
AAQ-II	74	15.41 (8.51)	1.42 (.28)***	2.62 (.55)***	7-49
HSCL	74	26.50 (7.07)	.60 (.28)*	.46 (.55)	15-47
MC-SDS	71	21.96 (3.11)	-1.11 (.29)***	.67 (.56)	13-26

Note. HSCL = Hopkins Symptom Checklist; AAQ-II = Acceptance and Action Questionnaire-II; PRC = Positive Religious Coping; NRC = Negative Religious Coping; MC-SDS = Marlowe-Crown Social Desirability Scale.

Significant results of z-score calculations are denoted by asterisks.

* $p < .05$. ** $p < .01$. *** $p < .001$.

3.3 Descriptive Data of Study Variables

The study variables are explored in further detail in this subsection, and comparisons are made to findings in the literature.

3.3.1 Positive Religious Coping. Within this study's sample, the mean PRC score was 25.38 ($SD = 3.08$) and the data were found to be negatively skewed and leptokurtic (skewness = -1.61; kurtosis = 2.71). This is comparable to other Muslim (Pakistani) samples ($M = 21.07$, $SD = 4.13$) as investigated by Khan and Watson (2006) with an Urdu translated version of the measure. Since the range of possible scores for PRC are 7 – 28, it is suspected that Khan and Watson (2006) yielded negatively skewed data for this scale given their values for the mean and standard deviation, although this is not directly reported. This trend of endorsing more of the PRC statements therefore yielding higher scores (i.e. negatively skewed distributions) has also been shown in non-Muslim

populations (Pargament et al., 2011). Internal consistency of this scale in the present study was found to be acceptable with a Cronbach's $\alpha = .76$. This is again comparable to previous findings in the literature e.g. $\alpha = .75$ (Khan & Watson, 2006) in their Pakistani sample, and $\alpha = .71$ in a subsample of Muslim Moroccans (Braam et al., 2010). In a review of non-Muslim samples, Pargament, Feuille, and Burdzy (2011) found a median value of $\alpha = .76$ (range $\alpha = .67 - .94$) for internal consistency, therefore indicating some variability of internal consistency for this scale in the literature. These findings indicate that the present sample responded in a way which is fairly typical of how Muslims respond on the PRC scale, and the sample is therefore likely to be representative.

3.3.2 Negative Religious Coping. The mean NRC score obtained in this sample was 12.07 ($SD = 4.44$) and these data were positively skewed (skewness = 1.08). Khan and Watson (2006) reported a slightly higher mean score in their Muslim sample ($M = 16.59$, $SD = 4.27$). In non-Muslim populations, mean NRC scores have ranged from 8 – 14 ($SD = 2.5 - 4.5$) indicating possible positive skewness since the total obtainable scores range from 7 – 28 (Pargament et al., 2011). Mean NRC scores are generally found to be lower than mean PRC scores (Pargament et al., 2011). The data from this study provide further evidence for this discrepancy between mean PRC and NRC scores and suggest that responses on this scale are broadly similar to other populations' responses. Internal consistency of NRC in the present study was found to be good with a Cronbach's $\alpha = .80$. This is higher than Khan and Watson's value of $\alpha = .60$, yet comparable to non-Muslim samples where the median value was reported to be $\alpha = .81$ by Pargament et al. (2011). Generally in the literature, internal consistency of the PRC scale is found to be higher than the NRC scale (Pargament et al., 2011), yet

this was not true for the current study where the NRC scale displayed higher internal consistency than the PRC scale.

3.3.3 Experiential avoidance. This construct was measured using the AAQ-II in the present study, yielding a mean score of 15.41 ($SD = 8.51$), and a positively skewed and leptokurtic distribution (skewness = 5.00, kurtosis = 2.60). Studies employing the AAQ-II with a Muslim or Arabic-speaking population have not been identified in the literature for the purpose of comparison with this study. In developing the measure, Bond et al. (2011) found a mean score of 18.53 ($SD = 7.52$) amongst a sample of adult employees of a bank across the UK (97% of which identified as white). A Spanish translated version of the AAQ-II was administered to a large non-clinical sample and found a mean score of 21.22 ($SD = 7.76$; Ruiz et al., 2013). Masuda et al., (2014) found a mean score of 22.79 ($SD = 9.10$) in their Asian American student sample, which consisted of 19% Muslim participants. These figures are somewhat comparable to the present study, yet notably all samples found higher mean scores for the AAQ-II, which indicates lower levels of EA traits than in the present sample. The AAQ-II had excellent internal consistency in the present sample with a Cronbach's $\alpha = .90$. This is higher than values reported in the literature by Bond et al. (2011) and Ruiz Langer-Herrera, Luciano, Cangas and Beltran (2013) which were $\alpha = .84$ and $\alpha = .88$ respectively. Masuda et al. (2014) found internal consistency to be Cronbach's $\alpha = .92$ which is high and comparable to the present study.

3.3.4 Depression. The HSCL depression subscale was used to detect the level of depressive symptoms. A mean score of 26.50 ($SD = 7.07$) was found and the distribution was slightly positively skewed (skewness = .60). In a study employing an Arabic-speaking Iraqi population this measure was administered

pre and post treatment to a community sample that identified as having experienced a previous trauma (Wagner, Schulz & Knaevelsrud, 2012). The measure was also translated into Arabic and mean scores were 41.7 ($SD = 9.45$) pre-treatment and 27.75 ($SD = 9.00$) post-treatment. The post-treatment scores were similar to the scores found by the present study suggesting that the sample population of the present study is fairly typical in terms of the prevalence of depressive symptoms in an Arabic-speaking community sample. In the present sample 37 participants (50%) scored above the clinical cutoff score for depression, which is a total score that equals 1.75 or more when divided by 15 (Winokur et al., 1984). This is comparable to scores reported by Wagner et al., (2012) whereby 46% of their sample was found to be above the clinical cutoff point post-treatment. Internal consistency of the scale in the current study was good with a Cronbach's $\alpha = .88$, and this is very similar to the value reported by Wagner et al. (2012) of $\alpha = .89$.

3.3.5 Social desirability. The MC-SDS short form C was used to measure social desirability in this study. The mean score was 21.96 ($SD = 3.11$) and the distribution was found to be negatively skewed (skewness = -1.11). A study by Verardi et al. (2010) employed the same version of this measure and found a mean score of 16.70 ($SD = 4.84$) in an Algerian community-based subsample, indicating that social desirability may have been slightly higher in the current study. The MC-SDS yielded a Cronbach's α of .78 in the present data set which is slightly lower than that obtained by Reynolds ($\alpha = .88$; 1982).

3.3.6 Religiosity. Two questions on religiosity were included in the questionnaire pack asking how religious participants perceive themselves to be and how important Islam is in their life. Participants tended to generally endorse

the highest two responses to these questions (*quite a bit* and *extremely*) which yielded mean scores of 3.81 ($SD = .99$) and 4.64 ($SD = .77$) for the two questions respectively. The range for these questions was 1 – 5 illustrating how negatively skewed these two questions were and how important Islam is for these participants. The participants also clearly viewed themselves as being quite religious. There are no direct comparable data in the literature for these two questions but Abu Raiya et al. (2008) report similar findings for broadly similar questions in a Muslim population, indicating that the sample population of this study is relatively similar to other Muslim populations in terms of religiosity.

3.4 Demographic Data

All recruited participants met inclusion criteria for the study therefore none of the data collected were omitted on this basis. Demographic data of the sample population are illustrated in Table 3. Seventy-four completed questionnaires were returned and of these, 44 (60%) were male ($M_{age} = 42$) and 29 (39%) were female ($M_{age} = 38$). Since the Muslim holy month of Ramadan fell during the recruitment period, data were also collected on whether the questionnaires were completed during Ramadan or not. This was based on the date that the questionnaires were returned and illustrated that 46 questionnaires (62%) were returned during Ramadan. The number of questionnaires completed at each recruitment site cannot be computed but the general population recruited from was recorded. Participants fall into one of two population categories; *community* denoting that they were recruited through community groups and a community leader, or *personal*, denoting that they were recruited using snowball sampling through an initial personal contact. In total 37% ($n = 28$) were collected from the community and 63% ($n = 48$) through an initial personal contact. The

mean length of time participants had lived in the UK was 13.25 years (range 0 to 45 years). Participants' countries of origin were Egypt, Sudan, Kuwait, Iraq, Palestine, Yemen, Lebanon, and Jordan. All participants were given the option to be entered into a draw to win one of two £25 Amazon vouchers, and 19 participants (25% of the original 76 responders) opted to enter this draw. It is not possible to report on attrition rates, the number of people approached to partake in the study or the number who declined based on the design of this study. This is because community leaders and personal contacts did not keep a record of how many people they approached to partake in the study.

Table 3
Demographic Data of Sample Population (N = 74)

	<i>N (%)</i>	<i>M (SD)</i>	Range
Gender			
Male	44 (60)		
Female	29 (39)		
Age in years	72 (95)	40.64 (13.05)	18 - 67
Length of time in UK in years	71 (93)	13.25 (9.84)	0 - 45
Country of origin			
Egypt	38 (51)		
Sudan	16 (22)		
Kuwait	5 (7)		
Other	11 (15)		
Missing	4 (5)		

3.5 Hypothesis Testing

3.5.1 Hypothesis one. Hypothesis one stated that higher levels of NRC would significantly correlate with higher symptoms of depression in an adult Muslim population. A scatterplot graph of the two variables was visually inspected and the relationship appeared to be fairly linear (Appendix J). A non-parametric bivariate correlation (Spearman's rho) was conducted since the variables in question violated the parametric assumption of normally distributed data. A one-tailed test was chosen because the hypothesis stated a direction for the proposed correlation, i.e. positively correlated. This hypothesis was found to hold true as higher levels of NRC were significantly, moderately and positively correlated with higher levels of depression $r_s(72) = .45, p < .001$. Since Spearman's rho is a ranked correlation, squaring the correlational coefficient does not yield a measure of effect; instead, the correlational coefficient itself is taken as the effect size (Field, 2009). The effect size of this correlation is a moderate one of $r_s = .45$. Cohen (1988) describes a small effect size as $r = .2$, a medium effect size as $r = .3$ and a large effect size as $r = .5$.

3.5.2 Hypothesis two. This hypothesis stated that higher levels of EA would significantly correlate with higher symptoms of depression in an adult Muslim population. A scatterplot graph of the two variables was visually inspected and the relationship appeared to be fairly linear (Appendix J). A non-parametric bivariate correlation (Spearman's rho) was conducted since the variables in question violated the parametric assumption of normally distributed data. A one-tailed test was chosen because the hypothesis stated a direction for the proposed correlation, i.e. positively correlated. The null hypothesis was rejected as higher levels of EA were significantly, strongly and positively

correlated with higher levels of depression $r_s(72) = .60, p < .001$. This correlation yielded a large effect size of $r_s = .60$ (Cohen, 1988).

3.5.3 Hypothesis three. Hypothesis three stated that higher levels of PRC would significantly correlate with lower symptoms of depression in an adult Muslim population. A scatterplot graph of the proposed relationship was visually inspected and the relationship did not appear to be linear (Appendix J). A non-parametric bivariate correlation (Spearman's rho) was conducted since the variables in question violated the parametric assumption of normally distributed data. A one-tailed test was chosen because the hypothesis stated a direction for the proposed correlation, i.e. negatively correlated. The null hypothesis was retained as higher levels of PRC were not found to correlate with depressive symptoms $r_s(72) = .11, p = .17$.

3.5.4 Further correlational analyses. After testing the first three hypotheses, two-tailed Spearman's rho correlations of the four primary study variables were conducted (Table 4). Two-tailed correlations were chosen in order to investigate any further significant correlations that may exist, but were not originally hypothesised, and therefore the direction of relationship if it existed was not stated. An additional significant relationship was found as a result of these analyses in that NRC was found to significantly, moderately and positively correlate with EA, $r_s(72) = .41, p < .001$. This correlation yielded a moderate effect size of $r_s = .41$ (Cohen, 1988). Even though this correlation was not explicitly hypothesised, the result is unsurprising given the mediation model presented in hypothesis four where NRC is expected to predict EA (path *a*).

Table 4

Correlation Matrix for Primary Variables (N = 74)

Measure	PRC	NRC	AAQ-II	HSCL
PRC	-			
NRC	.05	-		
AAQ-II	.06	.41***	-	
HSCL	.11	.45***	.61**	-

Note. Coefficients reported are for a Spearman's rho two-tailed test; PRC = Positive Religious Coping; NRC = Negative Religious Coping; AAQ-II = Acceptance and Action Questionnaire – II; HSCL = Hopkins Symptom Checklist – Depression subscale.

Significant results are denoted by asterisks.

* $p < .05$. ** $p < .01$. *** $p < .001$.

3.5.5 Hypothesis four. Hypothesis four proposed that higher levels of EA would mediate the relationship between higher levels of NRC and higher symptoms of depression in an adult Muslim population. This hypothesis was tested using a bias-corrected bootstrapped mediation analysis (Hayes, 2013). This test was chosen as it is suitable for non-normally distributed data and the sample size obtained (Fritz & MacKinnon, 2007; Hayes, 2013). PROCESS version 2.13 (released in September 2014) was downloaded from <http://www.processmacro.org/download.html>. This is a macro for SPSS developed by Hayes (2013) allowing bias-corrected bootstrapped mediation analyses to be conducted in SPSS. Values for NRC, EA and HSCL (the depression measure) were entered into the bias-corrected bootstrapped mediation analysis with 10,000 bootstrapped samples and 95% confidence intervals. Hayes

(2013) recommends using between 5,000 and 10,000 bootstrapped samples, as samples larger than this do not significantly increase the power of the test. The 95% confidence interval means that we can be 95% certain that a statistically significant effect of mediation is observed as long as the confidence intervals do not contain zero (Hayes, 2013).

Before addressing the statistical model of PROCESS in more detail and presenting the results of the mediation analysis, it serves to mention the individual paths of a simple mediation model. Figure 6 illustrates that the relationship between the predictor variable and the mediating variable is called indirect effect and labeled a . The relationship between the mediating variable and outcome variable is also called indirect effect and labeled b . The relationship between the predictor variable and outcome variable is called the direct effect (of predictor on outcome) and labeled c' . The total effect of the predictor on the outcome is not depicted by the model and is generally labeled c (e.g. Hayes, 2013). The total indirect effect is termed ab and is the product of the two indirect effects. This is also the effect that indicates whether the model implies that the mediating variable indeed mediates the relationship between the predictor and outcome variables. From this information the following equations can be derived:

1. $c = c' + ab$ (total effect = direct effect + total indirect effect)
2. $ab = c - c'$ (total indirect effect = total effect – direct effect)

These are valuable concepts to bear in mind when considering the results of a mediation analysis as they clarify the relationships between the paths of the model and indicate how mediation is calculated.

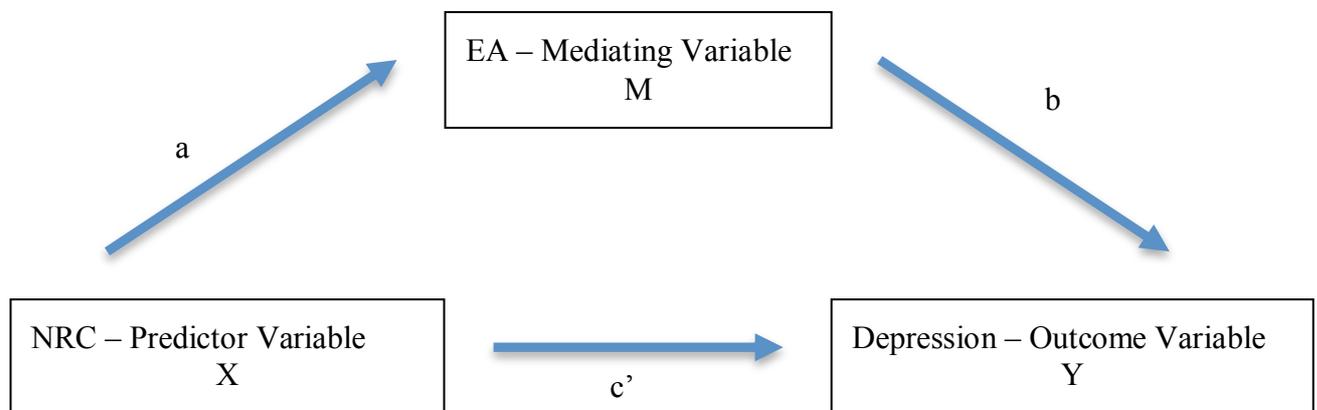


Figure 6. Mediation model (Baron & Kenny, 1986).

Note. EA = experiential avoidance; NRC = Negative Religious Coping; a = indirect effect; b = indirect effect; c' = direct effect; X = predictor variable; M = mediating variable; Y = outcome variable.

Bias-corrected bootstrapped mediation in PROCESS uses ordinary least squares (OLS) as a measure of regression between variables entered into the model (Hayes, 2013). This method of regression calculates a line of best fit, which most closely approximates the individual data points (Hayes, 2013). This is obtained by squaring the residuals (distance from actual data points) and yields an equation, which gives the least distance from the squared residuals. Using a bias-corrected bootstrapped sample overcomes the danger of violating the assumptions of OLS such as normal distribution of residual errors, a normally distributed data set, and linear relationships between variables (Jose, 2013). Furthermore, since none of the obtained correlations between the proposed variables exceeded a correlational coefficient of 0.7, collinearity does not pose a problem in the present data set (Jose, 2013). To test for homoscedasticity, a regression of standardised residuals was plotted for each of the three variables

NRC, EA and depression (Appendix K). Lines of fit of these plots were flat across the graphs indicating that the assumption of homoscedasticity was met for all variables in the mediation analysis (Field, 2009).

The results of the mediation analysis are displayed in Table 5. These revealed that the unstandardised indirect effect of EA on the relationship between NRC and depression was 0.254 based on a bootstrapped sample of 10,000 (the standardised indirect effect was 0.159). The 95% bias-corrected confidence interval around the bootstrapped mean for the indirect effect was LLCI = 0.200, ULCI = 0.6025. Since the confidence interval does not contain zero, it can be stated with 95% certainty (i.e. $p < .05$) that EA is a significant mediator in the relationship between NRC and depression (Hayes, 2013; Shrout & Bolger, 2002).

Table 5

Unstandardised and Standardised Coefficients and Statistical Significance for Mediation Analysis with NRC as the Predictor, EA as the Mediator and Depressive Symptoms as the Outcome Variable

	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	LLCI	ULCI
Path <i>a</i>	0.584	0.215	0.304	2.712	0.008	0.155	1.013
Path <i>b</i>	0.435	0.080	0.523	5.463	<0.001	0.276	0.593
Path <i>c</i>	0.636	0.172	0.399	3.701	<0.001	0.294	0.980
Path <i>c'</i>	0.383	0.153	0.240	2.509	0.041	0.079	0.687

Note. LLCI = Lower Limit Confidence Interval; ULCI = Upper Limit Confidence Interval

Path *a* yielded a positive coefficient meaning that the original direction of relationship hypothesised has been proven (i.e. greater NRC predicts greater EA). Similarly the *b* and *c'* paths yielded positive coefficients meaning that

greater NRC and greater EA both predict more depressive symptoms, and that the relationship between greater NRC and more depressive symptoms is partially explained by the presence of more EA. Unstandardised B coefficients of the paths have been superimposed on the mediation diagram in Figure 7. Hayes (2013) recommends reporting unstandardised coefficients because results obtained are based on arbitrary scales of the measures employed, and standardising the effects does not make them comparable across studies since standardised effects are scaled in terms of variability in each sample.

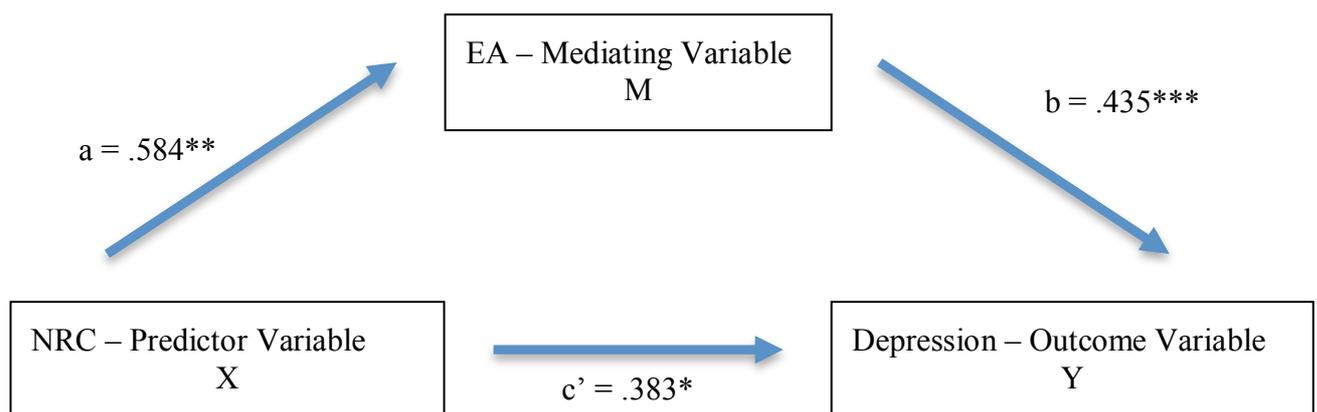


Figure 7. Mediation model (Baron & Kenny, 1986) with unstandardised coefficients.

Note. EA = experiential avoidance; NRC = Negative Religious Coping; a = indirect effect; b = indirect effect; c' = direct effect; X = predictor variable; M = mediating variable; Y = outcome variable.

* $p < .05$. ** $p < .01$. *** $p < .001$.

3.6 Exploratory Analyses

3.6.1 Social desirability as a confounding variable. In studies where taboo topics are explored, the desire to be socially accepted and not be seen to go against one's culture can sometimes affect self-report measures (King & Bruner, 2000). This is particularly so for collectivistic communities such as Arabs and

Muslims (Amer, Hovey, Fox & Rezcallah, 2008). To explore whether this desire had affected the relationships found in the present study, the questionnaire pack included a measure for social desirability (MC-SDS). Tabachnick and Fidell (2007) recommend that a variable be explored as a confounder if it is correlated with any of the other study variables in question. To this end, non-parametric two-tailed correlations using Spearman's rho were carried out in order to explore whether the MC-SDS was correlated with any of the primary study variables (PRC, NRC, EA and depression). Missing data were excluded listwise because the MC-SDS had a total $n = 71$ compared to $n = 74$ for the primary variables. Three significant correlations were found with the MC-SDS: PRC, $r_s(69) = .32, p < .01$; AAQ-II, $r_s(69) = -.31, p < .01$; and HSCL, $r_s(69) = -.24, p = .04$. Although these correlations are relatively weak in magnitude, they are statistically significant and also their direction is intuitive, i.e. more social desirability is correlated with endorsing more items on the PRC and less items on the AAQ-II and HSCL. These relationships indicate that social desirability may in fact have been a confounding variable in the results reported thus far. To explore this further, partial correlations were conducted.

SPSS does not readily calculate partial non-parametric correlations and therefore additional syntax was accessed from the IBM website (developers of SPSS; <http://www-01.ibm.com/support/docview.wss?uid=swg21474822>). This allowed for partial non-parametric correlations to be conducted using Spearman's rho. Partial correlations were calculated for the four primary variables while controlling for social desirability. The analysis was conducted using two-tailed tests and missing data were excluded listwise. The original

significant relationships presented in sections 3.5.1 – 4 remained significant after controlling for social desirability.

The relationship between NRC and depression remained unchanged when social desirability was controlled for $r_s(68) = .45, p < .001$. The relationship between EA and depression decreased slightly in magnitude when social desirability was controlled for $r_s(68) = .57, p < .001$, yet this result remained statistically significant at $p < .001$. The relationship between PRC and depression remained non-significant after social desirability was controlled for. The additional significant correlation between EA and NRC that was discovered through the correlation matrix, remained significant after controlling for social desirability $r_s(68) = .39, p = .001$. This relationship decreased slightly in magnitude when social desirability was controlled for, yet the result remained statistically significant at $p < .001$. Therefore, across all variables, magnitude of the relationships and their significance levels changed slightly but the correlations remained largely similar to the results obtained without controlling for social desirability.

3.7 Chapter Summary

The data for this study were found to be non-normally distributed and therefore non-parametric analyses were employed throughout the results chapter. The mean scores obtained on the scales generally reflected consensus with other Muslim populations and therefore it can be inferred that this sample responded in a way which is fairly typical of Arabic-speaking Muslims. The first two hypotheses were proven and the null hypotheses were rejected. Higher levels of NRC were significantly, moderately and positively correlated with higher levels of depression $r_s(72) = .45, p < .001$. Higher levels of EA were significantly,

strongly and positively correlated with higher levels of depression $r_s(72) = .60, p < .001$. The third hypothesis was not found to be true and higher PRC was not correlated with lower depression. An additional significant relationship was discovered through the correlation matrix; NRC was found to moderately positively correlate with EA $r_s(72) = .41, p < .001$. The mediation model presented in the fourth hypothesis was statistically significant at 95% confidence and the unstandardised indirect effect was 0.254 (LLCI = 0.200, ULCI = 0.6025). This illustrates that the relationship between higher NRC and higher depressive symptoms is indeed mediated by higher EA. Social desirability as a confounding variable was explored, and the significant relationships reported remained largely unchanged when social desirability was controlled for. This indicates that social desirability was not a significant confounding variable in the relationships reported. These findings will be discussed further and clinical implications will be considered in the final chapter.

4. Discussion

4.1 Chapter Overview

This chapter begins with a recap on the aims of the study and a brief summary of the research findings. These findings are then contextualised by drawing on comparisons and inconsistencies within the current literature. The theoretical and research implications are then addressed, followed by the clinical implications of the findings. The strengths and limitations of the study are presented and directions for future research are considered.

4.2 Aims of the Research

This study aimed to explore depression in a sample of Arabic-speaking Muslims living in the UK. More specifically, the roles of religious coping and EA in relation to depression were investigated. A review of the literature on religious coping, EA and depression in Muslims illustrated that although not much research exists on the topic, NRC and EA were positively correlated with depressive symptoms in this population (e.g. Khan & Watson, 2006; Khawaja, 2007). The present study aimed to see if these findings were replicable, and also to investigate whether PRC was negatively correlated with depressive symptoms. The final aim of this research was to test a mediation model whereby EA mediated the relationship between NRC and depression. This model has been shown to be applicable in a Christian student sample by Knabb and Grigorian-Routon (2013), and was therefore proposed in the current sample of Arabic-speaking Muslims recruited from the community.

4.3 Summary of Research Findings

4.3.1 Hypothesis one. The first hypothesis stated that NRC would be positively correlated with depressive symptoms. In the sample population

employed, NRC was found to be moderately positively correlated with depressive symptoms therefore supporting the first hypothesis. This result means that the more a participant used NRC methods the more likely they were to experience symptoms of depression.

4.3.2 Hypothesis two. The second hypothesis stated that EA would be positively correlated with depressive symptoms. In the current sample EA was found to be strongly positively correlated with depressive symptoms and therefore the null hypothesis was rejected. This result means that the more that participants engaged in EA as a coping method, the more likely they were to experience symptoms of depression.

4.3.3 Hypothesis three. This hypothesis stated that PRC would be negatively correlated with symptoms of depression. The null hypothesis was retained, as no significant correlation was found between PRC and depressive symptoms in the current sample.

4.3.4 Hypothesis four. The fourth hypothesis proposed a mediation model whereby EA would mediate the relationship between NRC and depression. It was hypothesised that the relationship between greater NRC and greater symptoms of depression was at least partially explained by the presence of EA. The mediation model was found to be significant, therefore indicating that EA was a significant mediator in the relationship between NRC and symptoms of depression. This result means that participants who employed NRC were more likely to experience depressive symptoms and that this relationship was further explained by participants also using EA as a coping method.

4.4 Comparisons with the Literature

The results obtained in the present study were found to be more or less consistent with the existing literature. This is particularly true for the first three hypotheses. Since the mediation model proposed has not been tested in a Muslim population before, direct comparisons with existing literature for the fourth hypothesis cannot be made. Each hypothesis will now be addressed in turn.

4.4.1 Depression and NRC. Of the four hypotheses proposed in the current study, the relationship between NRC and depression in Muslim populations is probably the most widely researched (e.g. Abu-Raiya et al., 2011; Kahn & Watson, 2006), yet despite this, the topic of religious coping amongst Muslims in general has not been extensively addressed in the literature (Pargament et al., 2011). The finding that NRC and depressive symptoms vary together in the same direction in the present study was consistent with other research investigating this relationship in Muslim samples (e.g. Abu-Raiya et al., 2011; Khan & Watson, 2006; Nurasikin et al., 2012). These findings suggest that when Muslim individuals employ NRC methods to deal with stressful life events, they are also more likely to be experiencing symptoms of depression. This outcome has been consistent across different types of Muslim samples, e.g. a community sample in the USA (Abu-Raiya et al., 2011), outpatients in a Malaysian psychiatric clinic (Nurasikin et al., 2012), a Pakistani community and clinical sample (Khan et al., 2011), a worldwide Internet-based sample (Abu-Raiya et al., 2008), adults in the community in the Netherlands (Braam et al., 2010), Pakistani students (Khan & Watson, 2006), and finally Pakistani earthquake survivors (Feder et al., 2013). The variety of settings and populations in which this relationship has been found adds weight to the results of the current

study. It also indicates that indeed the relationship between NRC and depression does exist in Muslim populations.

4.4.2 Depression and EA. In contrast to the relationship between NRC and depression in Muslim samples, EA as a standalone construct and in relation to depression has received hardly any attention in literature employing Muslim samples. Where it has been investigated, EA was found to be associated with depressive symptoms, much like the present findings (Kuo et al., 2013; Masuda et al., 2014). In a further study, Khawaja (2007) found that EA predicted depressive symptoms in a population of Muslims living in Australia. These studies offer promise for the relationship between EA and depression in Muslims and indeed this was the strongest of the relationships found in the present study. The current study employed a completely Muslim sample living in a non-Muslim country much like Khawaja (2007). The other two studies investigating EA, had samples comprising less than 20% Muslims (Kuo et al., 2013; Masuda et al., 2014) thus limiting the scope for comparisons between these studies and the present one. The current study was the first to employ the AAQ-II with a 100% Muslim sample as Khawaja (2007) administered the COPE (Carver et al., 1989) to measure avoidance coping in her study. The results found in this study offer initial support for the role of EA in the development and maintenance of depression in a Muslim sample. Causal claims are unverified though, as longitudinal and experimental designs are needed to support the results of the regression analysis conducted by Khawaja (2007) in which avoidance coping predicted depression.

4.4.3 Depression and PRC. An inverse relationship was proposed between PRC and depression based on the finding that PRC was negatively

correlated with psychological distress in a meta-analysis conducted by Ano and Vasconcelles (2005) in which 13% of their sample were Muslim. In a predominantly Muslim sample from Kosovo and Bosnia, PRC was found to be positively correlated with optimism (Ai, Peterson & Huang, 2003). Additionally, Muslim students in New Zealand displayed positive correlations between PRC and a better quality of life (Gardner et al., 2014). Other studies which have looked at depression and negative affect found no support for the inverse relationship between PRC and depression/negative affect in Muslims (e.g. Abu-Raiya et al., 2011; Braam et al., 2010; Feder et al., 2013; Khan & Watson 2006; Nurasikin 2012). Adding to this, Feder et al. employed the PANAS (Watson et al., 1988), which is a measure of negative affect more broadly and found no correlation with PRC in their sample. This illustrates that PRC was found to be uncorrelated with both symptoms of depression and negative affect more generally in Muslim samples. This is surprising given that PRC is associated with a better quality of life and increased wellbeing (Ai et al., 2003; Gardner et al., 2014). The results of the present study then are consistent with the literature amongst Muslims where PRC is not related to depression.

4.4.4 The mediating role of EA. As mentioned in section 4.4, the mediation model proposed in the current study has not been previously tested in a Muslim population. Employing a Christian student sample, Knabb and Grigorian-Routon (2013) found that EA mediated the relationship between NRC and depressive symptoms, which is consistent with the results of the present study. In another study employing a non-Muslim population, it has been shown that EA mediated the relationship between more general coping and psychopathology (Costa & Pinto-Gouveia, 2011) and, in an empirical review of

EA, Chawla and Ostafin (2007) propose exploring this construct as a mediating factor in the development of psychological distress and mental illness.

In the current study the relationship between NRC and depression was mediated by EA in an Arabic-speaking Muslim sample. If discussed separately, the c' and b paths of the mediation model pertain to the first two hypotheses proposed by this study and are therefore addressed in sections 4.4.1 and 4.4.2 of this chapter. The mediation model does however adopt regression analyses and therefore illustrates that NRC and EA predict depression in the model proposed. The a path, however which proposes a relationship between NRC and EA in a Muslim sample has not been investigated in the literature and therefore comparisons cannot be made. This highlights the novelty of the finding that NRC correlates with, and also predicts EA in a Muslim sample. The results of the mediation analysis indicate that EA, which we know to be correlated to depression, partially accounts for the relationship between NRC and depression. The clinical implications of this will be discussed in section 4.6.

4.5 Theoretical and Research Implications

The findings of this study will now be addressed in terms of the implications for theory and research. Particular attention is given to the applicability to Muslim populations.

4.5.1 Theoretical implications. NRC and EA may be implicated in the development of depression in Muslims given the results of the mediation model tested in this study. Since the model employs regression analyses between the three variables, it is proposed that NRC and EA predict depression and that NRC predicts EA in the current sample, although causal claims are unverified, as longitudinal and experimental designs are needed to ascertain this. The results

offer support for the cross-cultural application of Pargament's (1997) theory of religious coping whereby NRC is identified as a maladaptive form of coping.

The relationship between NRC and depression is a manifestation of this theory and has thus been shown to hold in adult Muslims in the current study.

These results also offer some support for Beck's (1987b) cognitive model of depression whereby NRC can be construed as a cognitive vulnerability that leads to depression. Beck's (1987b) theory describes a negative cognitive triad of beliefs with respect to the self, the world and the future in people with depression and this is similar to beliefs expressed by those who employ NRC. Some of the NRC items seem to correspond with aspects of Beck's (1987b) negative cognitive triad, for example feeling punished by God is akin to negative beliefs about the self and the world, *wondering whether God had abandoned me* and *questioned God's love for me* appear to be related to negative beliefs about the world, *questioned the power of God* seems to resemble negative beliefs about the future. The last example is especially true for a devout Muslim, whereby belief in God's power offers a sense of assurance to Muslims and instills confidence in the future since God is powerful and can influence the course of events.

A further theoretical implication of this study is the applicability of EA as a coping strategy (Hayes et al., 1996) in Muslim samples. It appears that data from the current study on Muslims yield similar findings to data on non-Muslim samples (e.g. Plumb et al., 2004) whereby more EA predicts more depressive symptoms. This offers support for the cross-cultural validity of Hayes et al.'s, (1996) theory of avoidance/acceptance coping.

Turning attention back to religious coping, PRC was found to be unrelated to depression in the present study, which whilst consistent with current

literature, also supports Pargament's (1997) theory on religious coping. This theory identifies that those who engage in PRC tend to be better adjusted in general and enjoy a better quality of life (Ai et al., 2003; Gardner et al., 2014). A tentative conclusion then is that while PRC is associated with better adjustment in general, it does not appear to buffer against the development of depression. Of course longitudinal data (rather than cross-sectional) are required in order to fully investigate this assertion. In the present study PRC was investigated in a correlational relationship (which does not infer causation) and therefore it may be that individuals who currently enjoy a better quality of life also employ PRC at any given time. This would mean that actually it is through being psychologically well adjusted that individuals end up employing PRC when faced with stress. A multitude of factors could be at play though and perhaps individual contexts and cultures are responsible for the relationship between PRC and psychological adjustment. PRC has been uncorrelated with depression in Muslim populations but not in non-Muslim populations (Ano & Vasconcelles, 2005; Khan & Watson, 2006;) thus highlighting that differences do exist between the two groups.

4.5.2 Research implications. This study provides preliminary evidence for the relationship between EA, NRC and depressive symptoms in a Muslim sample, and the results described here would need to be replicated in future studies. In considering the relationship of NRC (and perhaps PRC) to depression, directionality is important. Although some studies (e.g. Abu-Raiya et al., 2008) have shown that NRC predicts depression in Muslim samples, and others have found a positive correlation between these variables (e.g. Abu-Raiya et al., 2011; 2013; Khan & Watson, 2006) the direction of the relationship in a Muslim

sample is unclear. Studies investigating how state-dependent religious coping may be are merited, as it is possible that NRC is symptomatic of a depressive disorder, with negative appraisals of the self, world and future then becoming highly activated. NRC has been shown to precede the development of depression in one study, which employed a Jewish sample (Pirutinsky et al., 2011), and further longitudinal studies such as this are required in order to ascertain directionality of the religious coping – depression relationship.

Additionally, this is the first study to demonstrate a potentially mediating role of EA in the relationship between NRC and depression in Muslims. In their review of EA, Chawla and Ostafin (2007) recommend investigating the mediating role of EA further. It appears that although direct relationships between variables exist e.g. NRC and depression, there may be further factors influencing this relationship. The current research found EA to be a significant mediator of this relationship therefore highlighting the importance of considering this mediating role in future studies employing similar constructs and populations.

Social desirability has been identified as a confounding factor in some studies addressing sensitive topics (King & Bruner, 2000). Although social desirability did not significantly impact on the findings of this study, it was correlated with PRC, EA and depression. This illustrates that there may be a need to include measures of social desirability when investigating sensitive topics, and that this is particularly true for Arab and Muslim populations (Amer et al., 2008). Muslims have a tendency to portray themselves and particularly Islam in a positive light (Abu-Raiya et al., 2007). This stems from ideologies within the religion itself and is also a characteristic of collectivistic communities (Amer et

al., 2008). Given the weak correlations found in the current research, it would seem that social desirability could be a confounding factor in studies employing similar sample populations and particularly if sensitive or taboo topics are being investigated.

All of the measures used in the current study were originally developed for Western samples. Although some of the measures have been used in non-Western samples before (e.g. the RCOPE by Khan & Watson, 2006) they have not yet been validated on populations other than mainly white Caucasian individuals. This study contributes to the research base in terms of offering Arabic-translated versions of the measures employed along with their respective internal consistency. WHO guidelines (2013) for translation of measures were strictly upheld throughout the process, therefore suggesting that the Arabic versions of the measures are as closely representative of the English versions as possible without standardising them. This does not necessarily mean that the Arabic versions are measuring the same constructs as the English versions (although it is hoped that they are), and further research validating these measures in Arabic-speaking populations is warranted.

4.6 Clinical Implications

Muslims appear to experience depression in a broadly similar way to that of their non-Muslim counterparts (Beshai et al., 2012). Indeed, in the present sample NRC and EA both correlated with symptoms of depression as has been shown in non-Muslim populations (Chawla & Ostafin, 2007; Ano & Vasconcelles, 2005). In addition, the current sample of Arabic-speaking Muslims were found to act in a comparable way whereby EA significantly mediated the relationship between NRC and depressive symptoms as well as predicted

depression, which parallels the findings from the Christian sample employed by Knabb and Grigorian-Routon (2013). This suggests that one treatment target for depressed Muslims could be EA, and this naturally suggests ACT (Hayes & Wilson, 1994) as a possible treatment modality. In the current study, the correlation between EA and depression was the strongest ($r_s = .61$) thus indicating that EA would be a valuable treatment target in itself for depressed Muslims.

The results of the present study may also inform adaptations of other therapy models so that they can be more culturally consonant and possibly more effective as advocated by Masters (2010). In a systematic review of adapted CBT for religious individuals, Lim, Sim, Renjan, Sam and Quah (2014) concluded that the majority of studies reviewed did not find religious CBT to be effective and those that did, had not maintained gains at follow up. A further conclusion of the authors was that considering the methodological limitations of the studies reviewed, religiously modified CBT cannot be considered a well-established intervention at this point and it may be an acceptable treatment for highly religious individuals who would like to incorporate religion into their treatment (Lim, sim, Renjan, Sam & Quah, 2014). It appears that therapies augmenting CBT methods with Islamic teaching may be effective in Muslim populations. An illustrative example is the work carried out by Meer, Mir and Serafin (2012) whereby they incorporated Islamic concepts and teachings of the prophet Mohamed into BA techniques delivered through a primary care setting in the UK to Muslims with depression. The results of the current study, and in particular the mediation model, suggest that alongside Meer et al.'s (2012) work, some aspects

of ACT can be delivered to depressed Muslims in order to educate them about, and reduce EA as a coping strategy.

In general, those that identify themselves as Muslim tend to be quite religious, and religion features ubiquitously in their lives (Ali et al., 2004). Indeed in the present sample this was also the case as revealed by the negatively skewed results of the questions on religiosity, indicating that participants were likely to endorse statements on the importance of Islam in their life and on being religious. This adds further weight to the argument to include Islam and Islamic concepts in treatment for depressed Muslims. In particular, according to the results of this study, NRC could be another effective treatment target for this population. NRC was found to moderately correlate with depression ($r_s = .45$) as well as significantly predict depression in the mediation model. Given that PRC was unrelated to depression in the current study, it would appear that attempts to lower the use of NRC rather than increase the use of PRC would be more effective in treating depression in Muslim populations. This approach is contrary to what is being encouraged in the current (yet scarce) literature on the treatment for depression in Muslims (e.g. Hamdan, 2007) and it feels counter-intuitive to disregard the use of PRC altogether. Perhaps with further research on the topic, the role of PRC in the course of depression will become clearer through investigation of how PRC is associated with better quality of life and general wellbeing.

Augmenting current psychological therapies with religious teachings that encourage a more compassionate and accepting approach might be helpful for some people for whom their religiosity is a defining characteristic. Islam teaches acceptance of the circumstances that an individual finds him/herself in since

these situations have been created by Allah, and questioning the will of Allah is a sin in Islam (Smither & Khorsandi, 2009; Stompe et al., 2006). Along with acceptance, Islam encourages individuals to commit to taking positive action (Ali et al., 2004), which is akin to principles of ACT (Hayes & Wilson, 1994). Mental illness is thought to arise from living a life that is not in accordance with the teachings of Islam (El Azayem & Hedayat-Diba, 1994) and therefore augmenting therapies with concepts such as acceptance may be an important clinical application of the current research. By focusing on incorporating Islamic principles into therapy, this would naturally target NRC methods since it can be argued that NRC is not in line with true Islamic teachings and philosophy. Questioning God's love and power (items 4 and 7 on the NRC subscale) and deciding that the devil made a certain situation happen (item 6 on the NRC subscale) are all contrary to the teachings of Islam and can in fact be considered blasphemous (Hamdan, 2007). Perhaps it is the dissonance experienced by Muslims who endorse NRC methods yet still identify as practicing Muslims that causes an internal struggle and may then lead to depression. This is in line with incongruences within the heart as described by Inayat (2005) in her description of the Islamic self-concept and the origin of psychological distress. It would appear then, that treatments incorporating Islamic principles, particularly those of acceptance and positive action, are likely to be effective for depressed Muslims.

In terms of CBT, it would be important in treatment to directly ask about NRC, as without an understanding of how NRC might manifest in a Muslim population, challenging some thoughts (which may be supported by NRC) might meet with resistance. In a qualitative study conducted by Dura-Vila, Hagger, Dein & Leavey, (2011) psychiatrists working in London were asked about how

they resolved their own religious beliefs within therapeutic relationships with clients. Findings of this study suggested that migrant psychiatrists came from religiously oriented cultures, and that they experienced a dissonance between how they practiced in their home countries and how they practice in the UK. Participants in this study reported incorporating patients' religious beliefs into treatment when practicing in their home countries, yet not doing so when in the UK (Dura-Vila, Hagger, Dein & Leavey, 2011). This was mainly down to the UK being a secular society and recommendations of this study were for more training on religious and cultural values to be provided for clinicians in the National Health Service (NHS).

The present study suggests the importance of acknowledging cultural and religious aspects within training for therapists in general. Understanding religious aspects that may contribute to the development and maintenance of depression in Muslims e.g. NRC, would facilitate therapists in offering culturally appropriate interventions. Indeed there is evidence that therapy is more effective when the therapist understands and is sensitive to the client's cultural and religious background (Al-Krenawi, Maoz & Reicher, 1994). This is not to say that Muslim clients would benefit more from a Muslim therapist, rather that an understanding by non-Muslim therapists is warranted. In fact non-Muslim therapists can be more appropriate given ideas of shame and stigma around mental illness, and in reducing fears around confidentiality issues amongst often closely-knit Muslim communities (Cinnirella & Loewenthal, 1999). Along with an understanding of Islam, an open mind is also valuable when treating Muslim clients, due to the heterogeneity amongst Muslims in terms of culture and in how strictly Islamic concepts are upheld (Walpole, McMillan, House, Cottrell & Mir,

2013). Muslims originate from a diverse range of cultures and cultural factors may have more of an impact (than religion) on an individual's development of depression and their concept of mental illness more generally. Distinctions between religion and culture are often difficult to make, and instead, approaching a Muslim client as an individual, with their own individual worldview seems to be more appropriate (Meer et al., 2012). Indeed just because a client identifies as Muslim may not mean that they want to address Islam, or incorporate its teachings into their therapy. This was evident from interviews conducted with both therapists and service users in Meer et al.'s (2012) study on incorporating Islam into BA for Muslims with depression.

4.7 Strengths and Limitations

The strengths and limitations of the current study will now be considered. This section addresses the design of the study, participants, measures employed, the procedure adopted and data analysis.

4.7.1 Design. The cross-sectional design of this study facilitated recruitment of an ample-sized sample to achieve 80% power, along with completion of the research within the time constraints. Since cross-sectional designs only collect data at one time point, inferences about causality are limited. This limitation is further compounded by adopting correlational analyses, which cannot assume causality; rather they simply assert that a significant relationship exists between two variables. The mediation model on the other hand does address causality, as the predictor variable is assumed to cause variance in the outcome and mediator variables, and the mediator variable causes variance in the outcome variable (Jose, 2013). The design was appropriate for the research hypotheses posed and these hypotheses were adequately tested. A between-

groups design employing a non-Muslim control group similar to Beshai et al.'s (2012) study could have answered further questions and afforded comparisons between Muslims and non-Muslims, as within the current study what is specific to a Muslim sample cannot be truly identified.

The results of this study indicated that 62% of the questionnaires were returned during the month of Ramadan. Since Ramadan is the Muslim holy month and Muslims tend to be more religious during this time, and engage in more religious activities (Ali et al., 2004) this may have had an impact on the way that participants answered the questionnaires, particularly the questions pertaining to religion. A further methodological weakness of this study was that the demographic sheet of the questionnaire did not ask participants to identify which recruitment site they were recruited from e.g. a particular community centre. This means that only basic information on how participants entered the study was collected (whether it was through a personal contact or through a community leader). It was not possible to calculate the number of people approached to partake in the study and how many declined due to community leaders not being asked to collect this information. Likewise, attrition rates could not be calculated since it was impossible to know how many people began filling out the questionnaire and then decided to opt out. Although it would have been valuable to gather this information, the process would have been cumbersome and perhaps have hindered participant recruitment.

4.7.2 Participants. The participants in the present study varied greatly in terms of age, length of time they had been living in the UK, and nationality. This does appear to be representative of migrants in the UK including first generation Arabic-speaking Muslims (Jayaweera, 2011), therefore making the results of the

study more generalisable and increasing external validity. The number of participants recruited to take part in the study was sufficient in order to detect significant relationships in the data and this is a strength of the research. Recruitment was mainly carried out through opportunistic and snowball sampling methods though, and this may have posed a threat to the external validity of the study. The highest level of education reached by participants may have been a confounding factor, and a weakness of this study is that information on education level was not collected.

4.7.3 Measures. The measures employed in this study were developed in English and standardised on Western populations. A weakness of this study then is that the measures had to be translated to Arabic. Although this was done according to WHO (2013) guidelines, it is possible that inconsistencies in translation have impacted on the validity of the measures and thus the constructs being tested. The measures generally performed well in the current study with Cronbach's internal consistencies of between $\alpha = .76$ and $\alpha = .90$. Formal feedback from the pilot phase along with informal feedback from participants throughout recruitment indicated that the questionnaires were easy to understand and complete. A notable strength of this study is that the questionnaires were translated to Arabic (and back translated to increase validity), therefore making it easier for native Arabic speakers to understand them. Additionally, certain concepts specific to Islam are more readily understood in Arabic and these may have been misinterpreted if the questionnaire pack was in English.

4.7.4 Procedure. A limitation of this study is that participants were often recruited through a community leader or someone that they respected and viewed as a leader. This may have put pressure on participants to take part in the study

and also may have influenced how they answered certain questions for fear of being judged by their leader. Recruitment through the Internet may have combated this limitation. Internet recruitment was considered yet it was decided against because this method of recruitment would have led to a biased sample due to omission of participants who did not have access to the Internet or who were skeptical about submitting personal information online.

A strength of this study is that the procedure for recruitment was designed to maximise the number of participants who took part whilst also ensuring that the research was not taxing for them. Participants were offered the chance to enter into a prize draw to win Amazon vouchers and this may have enticed some people to partake in the study who would not have done so otherwise. Indeed, two questionnaire packs were returned with only demographic information and the prize draw sheet, illustrating the possible confounding impact of offering such an incentive. Interestingly, only 25% of participants opted to enter this draw and through informal conversations during recruitment it was established that most of these participants simply wanted to further research on Muslim mental health and were happy to take part in the study for the sake of academia. The idea that entering into the draw may have been construed as gambling (which is not permitted in Islam) was considered, and through conversations with some participants and community leaders it was established that this was not the case and therefore the prize draw did not act as a barrier to participants.

4.7.5 Data analysis. One of the strengths of this study is that very little data were found to be missing and this afforded mean substitution of missing data. The statistical analyses used were appropriate in answering the questions

and also suitable for the non-normal distribution of data yielded. All tests achieved at least 80% power thus facilitating the identification of significant relationships. As mentioned in section 4.7.1 causality could not be assumed between variables due to adopting a correlation test in a cross-sectional design. The mediation model employed however was able to provide some initial support for tentative hypotheses about the direction of causality between variables. There are presently many different ways of conducting mediation analysis (Hayes, 2013). A strength of this research is that it employed up-to-date tests for mediation which involved bootstrapping. Fritz and MacKinnon (2007) recommend using the bias-corrected bootstrap test for mediation as it has been empirically proven to be extremely powerful. This was the method used in the current research. A further strength was the use of Hayes' (2013) PROCESS macro for SPSS, which afforded a precise and efficient way to test for mediation (Hayes, 2013).

4.8 Directions for Future Research

The present study employed a cross-sectional design and as discussed in section 4.7.1, by employing a longitudinal design, further evidence for causal relationships could be collected. Additionally, by using a non-Muslim control group, comparisons could be made which would clarify specific characteristics that are common between both groups, and characteristics that are specific to Muslims.

It is likely that other factors, for example social or cultural differences, may be impacting on the relationships found in the present study. A direction for future research would be to employ some of the more intricate moderated mediation models that Hayes (2013) describes. This would further clarify how

religious coping and EA might be impacting on the development or maintenance of depression in Muslims.

Although no relationship was found between PRC and depression in the current Muslim sample, this relationship warrants further testing as the evidence across other populations is mixed. Future research could regress depressive symptoms onto PRC or employ a longitudinal design to ascertain whether PRC predicts less depression in Muslims. Adding to this, further exploration of the relationship between PRC and wellbeing would be clinically valuable. PRC has consistently been uncorrelated with depression in Muslim populations but this is not so for non-Muslim populations (e.g. Ano & Vasconcelles, 2005; Khan & Watson, 2006;) thus giving rise to questions about why this may be. Questions such as these could be addressed in future research employing a between-groups design that has a non-Muslim control group.

One of the weaknesses of the current study is that the measures used were developed for an English-speaking Caucasian population. There is a need for developing and standardising more Muslim/Arabic specific measures for use in clinical and research settings.

4.9 Conclusion

This thesis aimed to further the understanding of depression in Arabic-speaking Muslims. The role of religious coping and EA with regards to depression were examined in this population. Depressive symptoms were found to positively correlate with NRC and EA indicating that these variables are potential treatment targets for Muslims with depression. Additionally, a mediation model whereby the relationship between NRC and depression was significantly mediated by EA, suggests that NRC and EA may predict depressive

symptoms rather than simply correlating with them. This means that treatments that target EA, such as ACT, or treatments that are culturally adapted to focus on decreasing EA and NRC could be of potential benefit. Clinical implications of the findings included delivery of ACT to depressed Muslims and incorporating Islamic ideology or spiritual teaching into therapy in order to target NRC. Future directions for research include developing appropriate measures for Arab and Muslim populations along with adopting a between-groups design in order to make meaningful comparisons between Muslims and non-Muslims. Finally, the present study illustrated that Muslims' experiences of depression are similar in many ways to their non-Muslim counterparts. Differences do exist between these two groups though and Muslims are more likely than Christians, Hindus, and Jews to use religious coping for the treatment of depression due to their belief in its efficacy (Loewenthal et al., 2001). Hopefully the preliminary findings from this study may contribute towards moving away from our current ethnocentric and Western psychological models (see, Sue, 1992) to models, which take into account cultural and religious contributions so that they are both more relevant, and effective, for specific populations.

5. References

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6. Footnotes

¹ The ego here means the self; it is not referred to in Freudian terms.

² Being unemployed, belonging to social classes 4 and below, no formal educational qualifications, living in local authority or Housing Association accommodation, having moved three or more times in the last 2 years, and living in an urban environment.

7. Appendices

List of Appendices

A Ethical Approval

B Questionnaire Pack – English Version

C Participant Information Sheet – English Version

D Participant Information Sheet – Arabic Version

E Prize Draw Information – English Version

F Prize Draw Information – Arabic Version

G Questionnaire Pack – Arabic Version

H Histograms With Normality Curves for Study Variables

I Z-Scores for Skewness and Kurtosis

J Scatterplot Diagrams of Hypothesised Correlations

K Scatterplot Diagrams of Standardised Residual

Doctoral Thesis: An investigation into whether experiential avoidance acts as a mediator in the relationship between religious coping and depression in an adult Muslim population

Dina Bedair

Appendix A
Ethical Approval

Faculty of Medicine and Health Sciences Research Ethics Committee



Dina Bedair
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9th April 2014

Dear Dina,

Title: An investigation into whether experiential avoidance acts as a mediator in the relationship between religious coping and depression in an adult Muslim population.
Reference 2013/2014 - 39

Thank you for your e-mail dated 9th April 2014 notifying us of the amendments you would like to make to your above proposal. These have been considered by the Chair of the Faculty Research Ethics Committee and we can now confirm that your amendments have been approved.

Please can 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 can you also arrange to send us a report once your project is completed.

Yours sincerely,

A handwritten signature in blue ink that reads 'Yvonne Kirkham'.

Yvonne Kirkham
Project Officer

cc Deirdre Williams

Appendix B
Questionnaire Pack – English Version

**Thank you for taking the time to participate in this study.
These questionnaires should take about 25 minutes to complete.**

Please tick here to confirm that you are Muslim

Please tick here to confirm that you were not born in the United Kingdom

Please tick here to confirm that you are at least 18 years of age

Kindly note that by completing and returning this questionnaire pack, you are consenting to the use of the information provided within, for the purpose of research.

You can withdraw from participating in this study without giving a reason at any time until you return this questionnaire pack

If you choose to provide your personal details for the prize draw, they will be kept separate from this questionnaire pack and not used in the research study.

Please answer the following questions about you:

Gender (please tick): Male Female

How old are you? _____

What is your country of origin? _____

How long have you been living in the United Kingdom for? __ years__months

Below you will find a list of statements. Please rate how true each statement is for you by circling the relevant number (1-7). Please only circle one number for each statement

	Never True	Very Rarely True	Seldom True	Sometimes True	Frequently True	Almost Always True	Always True
My painful experiences and memories make it difficult for me to live a life that I would value	1	2	3	4	5	6	7
I'm afraid of my feelings	1	2	3	4	5	6	7
I worry about not being able to control my worries and feelings	1	2	3	4	5	6	7
My painful memories prevent me from having a fulfilling life	1	2	3	4	5	6	7
Emotions cause problems in my life	1	2	3	4	5	6	7

It seems like most people are handling their lives better than I am	1	2	3	4	5	6	7
Worries get in the way of my success	1	2	3	4	5	6	7

Please read the following statements and circle one answer that best describes what you do when faced with a difficult situation. It may be helpful to try to remember a situation that you found particularly difficult.

	I do not do this at all	I rarely do this	I sometimes do this	I do this a lot
I look for a stronger connection with Allah	1	2	3	4
I seek Allah's love and care	1	2	3	4
I seek help from Allah in letting go of my anger	1	2	3	4
I try to put my plans into action together with Allah	1	2	3	4
I try to see how Allah may be trying to strengthen me in the situation	1	2	3	4
I ask Allah for forgiveness for my sins	1	2	3	4
I focus on religion to stop worrying about my problems	1	2	3	4
I wonder whether Allah has abandoned me	1	2	3	4
I feel punished by Allah for my lack of devotion	1	2	3	4
I wonder what I did for Allah to punish me	1	2	3	4
I question Allah's love for me	1	2	3	4
I wonder whether my religious community have abandoned me	1	2	3	4
I decide that the devil has made this happen	1	2	3	4
I question the power of Allah	1	2	3	4

Listed below are some problems that people sometimes have. Please read each one carefully and decide how much each one bothered or distressed you in the last week, including today. Please circle one number for each problem.

	Not at all	A Little	Quite a bit	Extremely
Feeling low in energy, slowed down	1	2	3	4
Blaming yourself for things	1	2	3	4
Crying easily	1	2	3	4
Loss of sexual interest or pleasure	1	2	3	4
Poor appetite	1	2	3	4
Difficulty falling asleep or staying asleep	1	2	3	4
Feeling hopeless about the future	1	2	3	4
Feeling blue or sad	1	2	3	4
Feeling lonely	1	2	3	4
Thoughts of ending your life	1	2	3	4
Feeling of being trapped or caught	1	2	3	4
Worrying too much about things	1	2	3	4
Feeling no interest in things	1	2	3	4
Feeling everything is an effort	1	2	3	4
Feelings of worthlessness	1	2	3	4

For each question, please circle the answer that best reflects how you generally think of yourself.

	Not at all	A little	Somewhat	Quite a bit	Extremely
How religious do you consider yourself to be?	1	2	3	4	5
How important is Islam in your life?	1	2	3	4	5

For the following statements, please think about each statement and circle either true or false to reflect how true each one is for you.

It is sometimes hard for me to go on with my work if I am not encouraged.	True	False
I sometimes feel resentful when I don't get my way.	True	False
On a few occasions, I have given up doing something because I thought too little of my ability.	True	False
There have been times when I felt like rebelling against people in authority even though I knew they were right.	True	False
No matter who I'm talking to, I'm always a good listener.	True	False
There have been occasions when I took advantage of someone.	True	False
I'm always willing to admit it when I make a mistake.	True	False
I sometimes try to get even rather than forgive and forget.	True	False
I am always courteous, even to people who are disagreeable.	True	False
I have never been irked when people expressed ideas very different from my own.	True	False
There have been times when I was quite jealous of the good fortune of others.	True	False
I am sometimes irritated by people who ask favours of me.	True	False
I have never deliberately said something that hurt someone's feelings.	True	False

**Thank you for completing the questionnaires. The
information you have provided is much appreciated.**

If you have any questions, please feel free to contact the primary
researcher:

Dina ElSayed Bedair

Trainee Clinical Psychologist

Norwich Medical School

University of East Anglia, Norwich NR4 7TJ

Email: d.bedair@uea.ac.uk

Phone: 07804552684

If you feel distressed in any way as a result of these
questionnaires please contact The Muslim Community Helpline
on 020 8904 8193 or 020 8908 6715 (Monday – Friday, 10:00 –
13:00). Alternatively you can call The Samaritans on 08457 90 90
90 (24 hours a day, 365 days a year).

**Please hand the completed questionnaire pack back to the
researcher, or use the stamped addressed envelope
enclosed.
Thank you.**

Appendix C
Participant Information Sheet – English Version

**A study exploring how Muslims cope with
low mood and difficult situations**

I would like to invite you to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being carried out and what it will involve for you. Please read the following information and take time to decide whether or not you wish to take part. If you wish, you can talk to other people or to the researcher about the study before you decide whether or not to take part. This information sheet is for you to keep should you wish to look over it again.

1. What is the purpose of the study?

The aim of this study is to explore how Muslims cope with low mood and difficult situations, such as feeling stressed or an adverse life event. It will also investigate how being religious, and using different coping styles can affect people's mood. The study is being carried out by a trainee clinical psychologist, Dina ElSayed Bedair, and a clinical tutor, Dr. Deirdre Williams, at the University of East Anglia.

2. Why have I been invited to take part?

You have been invited to take part in the study because you are an Arabic speaking, first generation Muslim. I hope to include around 100 people in this study.

3. Do I have to take part?

No. It is up to you to decide whether or not to take part. Your participation is completely voluntary. After you have read this information, you can decide whether or not you would like to take part. If you decide not to take part, you do not have to give any reason for doing so.

4. What will happen if I do take part?

- If you agree to take part in the study you can approach your community leader or the researcher in order to arrange for you to fill out the questionnaire pack.
- The questionnaire pack is also in Arabic and will involve you answering some questions about your religion, how you cope with difficult situations, and your mood. It should take about 25 minutes to complete the questionnaire pack.
- You can receive your questionnaire pack by meeting with the researcher at the community venue where you received this information sheet, or by asking the community leader who gave you this information sheet for a pack. Dates and times when the

researcher will be available in your community can be provided by your community leader.

- Once completed, you can return the questionnaire pack to the researcher by handing them to her or by using the freepost envelope provided.
- If you require any help filling out the questionnaires you can contact the researcher by email or phone using the details at the bottom of this information sheet.
- At the end of the study there will be a prize draw and two people will be chosen randomly and given a £25 Amazon voucher each, as a thank you for participating in the study. If you wish to be entered into this draw, the researcher will take your personal details (name and either phone number, email address or postal address) in order to inform you if you have won. These personal details will be kept separate from the questionnaire packs and destroyed after the research has ended.

5. Can I stop taking part if I change my mind?

Yes, you can change your mind about participating in the study at any time before returning the completed questionnaire pack. If you choose to do this, you do not have to give any reason for doing so. Also, you do not have to complete any of the questionnaires that you don't want to. Since your name will not be on the questionnaires, once you return them, the researcher will not be able to identify your questionnaires in order to remove them from the study.

6. How will the information I provide be kept confidential?

All information you provide will be kept confidential according to ethical and legal practice. If you wish to give your personal details (name and either phone number, postal address or email address), to the researcher for entry into the prize draw, then they will be kept separate from the questionnaires that you will be asked to complete for the research. All information that you provide will be kept securely in locked cabinets for the duration of the study. When the study ends, the research questionnaires will be securely archived for ten years, in line with the current policy. Your personal information (if you choose to provide it) will not be stored and will be destroyed at the end of the research after the prize draw takes place.

7. What will happen to the results of the research study?

The results of this research will be written up as a thesis for the University of East Anglia. All information will be reported as anonymous data. The results may also be written into articles and potentially published in academic journals which would be available to the public. If you are interested in finding out about the results of this study, you can request a summary from your community leader or the researcher.

8. What are the possible disadvantages or risks of taking part?

The questionnaires will ask you to think about how you cope when faced with difficult situations. They will also ask you about your religious beliefs and to rate your mood. These topics may be upsetting for you to think about. If you do feel distressed at any time during the study you can stop without giving any reason. You can also discuss your difficulties with your faith or community leader. If you feel you would like further support you can contact The Muslim Community Helpline on 020 8904 8193 or 020 8908 6715 (Monday – Friday, 10:00 – 13:00). Alternatively you can call The Samaritans on 08457 90 90 90 (24 hours a day, 365 days a year).

9. What are the possible benefits of taking part?

It is hoped that this research will improve our understanding of how Muslims cope with difficult situations. This can help to inform psychological therapies or forms of support for Muslims who may be struggling to cope with difficulties in their life or with low mood. There is also the chance to win one of the two prizes of £25 Amazon vouchers as a thank you for your time.

10. Complaints

If you have any concerns about this study you can contact professor Ken Laidlaw Norwich Medical School, Room 2.11, Elizabeth Fry Building, University of East Anglia, Norwich NR4 7TJ. Telephone: +44 (0)1603 59 3600.

11. Who is organising and funding the research?

This research is organised by Dina ElSayed Bedair and Dr. Deirdre Williams, and is funded by the University of East Anglia Doctoral Programme in Clinical Psychology.

12. Has this study been approved?

All research at the University of East Anglia is reviewed by an independent group of people called a research committee, to protect your interests. This study has been reviewed and given a favourable opinion by the Faculty of Medicine and Health Research Ethics Committee.

13. Further information

If you have any questions, or would like more information, please contact the primary researcher:

Primary researcher: Dina ElSayed Bedair

Trainee Clinical Psychologist

Norwich Medical School

University of East Anglia, Norwich NR4 7TJ

Email: d.bedair@uea.ac.uk

Phone: 07804552684

***Thank you for taking time to read this information sheet,
please keep this information for your records***

Appendix D
Participant Information Sheet – Arabic Version



دراسة لإستكشاف كيف يتعامل المسلمون
مع حالات تدني المزاج النفسي والمواقف الصعبة

أود أن أدعوك للمشاركة في دراسة بحثية. قبل أن تقرر ما إذا كنت تنوي المشاركة أو لا، من المهم بالنسبة لك أن تفهم لماذا يتم تنفيذ هذا البحث وما مدى تأثير ذلك عليك. يرجى قراءة المعلومات التالية وخذ من الوقت ما تريده لتقرر ما إذا كنت ترغب أو لا ترغب في المشاركة. إذا كنت ترغب يمكنك التحدث إلى أي شخص آخر أو للباحث عن الدراسة قبل أن تقرر المشاركة من عدمه. يمكنك الاحتفاظ بورقة المعلومات هذه إذا كنت ترغب أن تعود للنظر إليها مرة أخرى.

1. ما هو الغرض من هذه الدراسة؟

الهدف من هذه الدراسة هو استكشاف كيف يتعامل المسلمون مع حالات التدني المزاجية والمواقف الصعبة، مثل الشعور بالتوتر أو حدث سلبي في الحياة. سوف تحقق الدراسة أيضا في كيف يمكن أن يؤثر التدني واستخدام أساليب التكيف المختلفة على مزاج الأشخاص. ويجري تنفيذ الدراسة من قبل دينا السيد بدير (عالمه نفسية تحت التدريب)، والمدرّبه الكلينيكية الدكتورة ديردرا وليامز، من جامعة إيست أنجليا.

2. لماذا تم دعوتي للمشاركة؟

لقد دعيت للمشاركة في الدراسة لأنك تتحدث العربية و مسلم من الجيل الأول. نأمل أن تشمل هذه الدراسة نحو 100 شخص.

3. هل يجب أن أشارك؟

لا ليس بالضرورة. والأمر متروك لك لتقرر ما إذا كنت ترغب في المشاركة أو عدم المشاركة. مشاركتك طوعه تماما. بعد أن تقرأ هذه المعلومات، يمكنك أن تقرر ما إذا كنت ترغب في المشاركة أو لا. إذا قررت عدم المشاركة ليس عليك إعطاء أي سبب لذلك.

4. ماذا سيحدث لو شاركت؟

- إذا كنت موافق على المشاركة في الدراسة يمكنك الإتصال بقائد مجموعتك أو الباحث للترتيب لملء مجموعة الاستبيان.
- مجموعة الاستبيان أيضا باللغة العربية وستشمل الإجابة على بعض الأسئلة عن دينك و كيف يمكنك التعامل مع المواقف الصعبة وحالتك المزاجية. ونتوقع أن تستغرق حوالي 25 دقيقة لإكمال مجموعة الاستبيان.
- يمكنك الحصول على مجموعة الاستبيان الخاصة بك من خلال لقاء الباحث في مكان الإجتماع حيث تلقيت ورقة المعلومات هذه أو عن طريق الإتصال بقائد مجموعتك الذي قدم لك ورقة المعلومات للحصول على مجموعة الاستبيان.
- التواريخ والأوقات المتواجد فيها الباحث سوف تكون متاحة في منطقتك من قبل قائد مجموعتك.
- وبمجرد الانتهاء يمكنك إعادة مجموعة الاستبيان للباحث من خلال تسليمهم لها أو باستخدام ظرف الـ freepost الذي تم تقديمه لك.
- إذا كنت بحاجة إلى أي مساعدة في ملء الاستبيانات يمكنك الاتصال بالباحث عن طريق البريد الإلكتروني أو الهاتف. جميع التفاصيل موجوده في الجزء السفلي من ورقة المعلومات هذه.
- عند استكمال الدراسة سوف يكون هناك سحب على جائزة وسيتم اختيار شخصين بشكل عشوائي وإعطاء كل منهما قسيمة الأمازون بمبلغ £25 لشكرهم على المشاركة في الدراسة. إذا كنت ترغب في الدخول في السحب علي تلك الجائزة فعليك إعطاء الباحث التفاصيل الشخصية الخاصة بك (الاسم بالكامل وإما رقم الهاتف أو عنوان البريد الإلكتروني أو العنوان البريدي) من أجل إبلاغك في حالة فوزك. وستبقى هذه التفاصيل الشخصية منفصلة عن مجموعة الاستبيان وسوف يتم التخلص منها بعد الإنتهاء من البحث.

5. هل يمكنني التوقف عن المشاركة إذا غيرت رأيي؟

نعم، يمكنك تغيير رأيك حول المشاركة في الدراسة في أي وقت قبل إعادتك لمجموعة الاستبيان المكتملة. ليس عليك إعطاء أي أسباب إذا اخترت القيام بذلك. وأيضاً يمكنك عدم تكملة أي جزء من أجزاء الإستبيان إذا لم تكن لديك رغبة في ذلك. في حالة إعادتك لمجموعة الاستبيان مكتملة لن يكون في وسعنا عدم إدراجها في الدراسة حيث أن اسمك لن يكون على مجموعة الاستبيان و بمجرد إعادتها فإن الباحث لن تستطيع أن تميز مجموعة الاستبيان الخاصة بك من أجل عدم إدراجها في الدراسة.

6. كيف يمكن أن تبقى المعلومات المقدمة مني سرية؟

جميع المعلومات التي تقدمها ستكون سرية وفقاً للقواعد الأخلاقية والقانونية. إذا كنت ترغب في إعطاء الباحث التفاصيل الشخصية الخاصة بك (الاسم بالكامل وإما رقم الهاتف أو عنوان البريد الإلكتروني أو العنوان البريدي) للدخول في السحب على الجائزة فإنها سوف تبقى منفصلة عن مجموعة الاستبيان التي سيطلب منك ملؤها للبحث. وستبقى جميع المعلومات التي تقدمها بشكل آمن في خزائن مغلقة لمدة الدراسة. عندما تنتهي هذه الدراسة سيتم أرشفة الاستبيانات البحثية بشكل آمن لمدة عشر سنوات، وذلك تمثيلاً مع سياسة العمل الحالية. لن يتم تخزين المعلومات الشخصية الخاصة بك (إذا اخترت أن تقدم هذه المعلومات) وسوف يتم تدميرها في نهاية البحث بعد السحب على الجائزة.

7. ماذا سيحدث لنتائج الدراسة البحثية؟

ستتم كتابة نتائج هذا البحث على أنها أطروحة لجامعة إيست أنجليا. وسيتم التعامل على ان جميع المعلومات بيانات مجهولة المصدر. ويمكن أيضاً أن تنشر النتائج في مقالات و منشورات للمجلات الأكاديمية والتي ستكون متاحة للعامه. إذا كنت مهتم بمعرفة نتائج هذه الدراسة، فيمكنك طلب ملخص من قائد مجموعتك أو من الباحث.

8. ما هي العيوب أو المخاطر المحتملة بالمشاركة؟

مجموعة الاستبيان سوف تطلب منك أن تفكر كيف تتعامل عندما تواجه المواقف الصعبة. كما أنها سوف تسألك عن معتقداتك الدينية وتقييم لحالتك المزاجية. التفكير هذه المواضيع قد يكون مزعج بالنسبة لك. إذا شعرت بالإحباط في أي وقت خلال الدراسة يمكنك أن تتوقف دون إعطاء أي سبب. يمكنك أيضاً مناقشة الصعوبات الخاصة بك مع قائد مجموعتك او مع رجل دين. إذا كنت تشعر بالرغبة في مزيد من الدعم يمكنك الاتصال بخط مساعدة المجتمع الإسلامي علي 02089048193 أو 02089086715 (أيام الإثنين حتي الجمعة من 10:00 حتي 13:00) أو يمكنك الاتصال بخط السامريون على 08457909090 (24 ساعة في اليوم، 365 يوماً في السنة).

9. ما هي الفوائد المحتملة من المشاركة؟

نأمل أن هذا البحث سيؤدي إلى تحسين فهمنا لكيفية تعامل المسلمون مع المواقف الصعبة. مما سيساعد العالمون النفسيين أو المجموعات الداعمة للمسلمين على فهم كيفية التعامل مع الصعوبات أو تدني الحالة المزاجية التي يواجهونها في حياتهم. هناك أيضاً فرصة لكي تفوز بواحدة من جائزتين بمبلغ £ 25 لقسائم الأمازون كعربون شكر على وقتك.

10. الشكاوى

إذا كان لديك أية مخاوف حول هذه الدراسة يمكنك الاتصال ب :

Professor Ken Laidlaw, Norwich Medical School, Room 2.11, Elizabeth fry Building,
University of East Anglia, Norwich NR4 7TJ. Telephone: +44 (0)1603 59 3600.

11. من هو منظم وممول هذا البحث؟

يتم تنظيم هذا البحث من قبل دينا السيد بدير والدكتورة ديردري ويليامز ، ويتم تمويله من قبل برنامج الدكتوراه في علم النفس الكلينيكي في جامعة أنجليا الشرقية.

12. هل تم اعتماد هذه الدراسة؟

يتم مراجعة جميع البحوث في جامعة إيست انجليا من قبل مجموعة مستقلة من الأشخاص تسمى لجنة البحوث و ذلك لحماية مصالحك. وقد روجعت هذه الدراسة وحظيت برأي إيجابي من قبل كلية الطب ولجنة أخلاقيات البحوث الصحية.

13. للمزيد من المعلومات

إذا كان لديك أي أسئلة أو ترغب في مزيد من المعلومات، يرجى الاتصال بالباحث الرئيسي:

Dina ElSayed Bedair
Trainee Clinical Psychologist
Norwich Medical School
University of East Anglia, Norwich NR4 7TJ
Email: d.bedair@uea.ac.uk
Phone: 07804552684

شكرا لأخذ الوقت لقراءة ورقة المعلومات هذه، يرجى الاحتفاظ بهذه المعلومات لسجلاتك.

Appendix E
Prize Draw Information – English Version

If you would like to be entered into the prize draw for a chance to win one of 2 £25 Amazon vouchers please fill in the details below and return to the researcher or your community leader. Please note that these details will be kept separate from the questionnaire packs.

Thank you.

Name: _____

AND

Telephone Number: _____

OR

Email Address: _____

OR

Postal Address: _____

Appendix F
Prize Draw Information – Arabic Version

١٠٠٪ كذا 20 غ؛ في (أدخ 6 في (لسد؛ على (لجان، 7 للحصص 6 على فرصة للف، ب*د' م%تت! £25 قس! (لأما، *F 2جى م6ء (لتفاص"6
% 20 ١٤ 20 ١٤ 20 ١٤ للباح*% فاذ' مجم*عتل.
"2جى ملاحP% ١٠٠! (لتفاص"6 س!F (لاحتقاP يا منفصلة ع! مجم*عة لاستب!ا! شك2 لل.

_____ : (لأما)

!

_____ : (لتا*و*!)

!"

_____ : (لألك2*نى)

!"

_____ : (لأ2*! T)

Appendix G
Questionnaire Pack – Arabic Version



شكرا لوقتكم للمشاركة في هذه الدراسة
إكمال هذا الاستبيان قد يستغرق حوالي 25 دقيقة.

- يرجى وضع علامة هنا للتأكيد علي أنك مسلم
- يرجى وضع علامة هنا للتأكيد علي أنك لم تولد في المملكة المتحدة
- يرجى وضع علامة هنا للتأكيد أنك لا تقل عن 18 سنة من العمر

برجاء الإحاطة بأنه من خلال استكمال وإعادة مجموعة هذا الاستبيان، فإنك توافق على استخدام المعلومات المقدمة ضمنه لغرض البحث.

يمكنك الإنسحاب من هذه الدراسة في أي وقت وليس عليك إعطاء اي أسباب قبل إعادتك لمجموعة الاستبيان المكتملة.

إذا إختوت أن تعطي التفاصيل الشخصية الخاصة بك للدخول في السحب على الجائزة فإن هذه البيانات سوف تبقى منفصلة عن مجموعة الاستبيان و لن تستعمل في دراسة البحث.

الرجاء الإجابة على الأسئلة التالية عنك:

الجنس (يرجى وضع علامة): رجل امرأة

كم تبلغ من العمر: _____

ما هو موطنك الأصلي: _____

منذ متى وأنت تعيش في المملكة المتحدة؟ _____ سنة و _____ شهر

تجد أدناه قائمة من البيانات. يرجى تصنيف مدى صحة كل بيان بالنسبة لك بوضع دائرة حول الرقم المناسب (1-7). يرجى وضع دائرة واحدة فقط لكل بيان.

ليس صحيحا أبدا	نادرا جدا يكون صحيح	نادرا يكون صحيح	صحيح في بعض الأوقات	صحيح في معظم الأوقات	غالبا صحيح	دائما صحيح	
1	2	3	4	5	6	7	تجاربي الحياتية المؤلمة و ذكرياتي المؤلمة تجعل من الصعوبة علي أن أعيش حياة ذات قيمة بالنسبة لي
1	2	3	4	5	6	7	إنني أخشى من مشاعري
1	2	3	4	5	6	7	إنني قلق حيال عدم قدرتي علي السيطرة علي مشاعري و مخاوفي
1	2	3	4	5	6	7	ذكرياتي المؤلمة تمنعني من أن أعيش حياة مرضية لي
1	2	3	4	5	6	7	العواطف تسبب مشاكل في حياتي
1	2	3	4	5	6	7	يبدو لي أن معظم الناس يتدبرون حياتهم بشكل أفضل مني
1	2	3	4	5	6	7	القلق و همومي يثقلانني في طريق نجاحي

يرجى قراءة العبارات التالية وضع دائرة واحدة علي الإجابة التي تصف ما تفعله عندما تواجه وضعاً صعباً. قد يكون من المفيد محاولة تذكر حالة بعينها والتي وجدت فيها صعوبة خاصة.

أنا أفعل ذلك كثيراً	قد أفعل ذلك بعض الأوقات	نادراً ما أفعل ذلك	لا أفعل ذلك مطلقاً	
4	3	2	1	أتطلع إلي صلة أقوى مع الله
4	3	2	1	أسعى لمحبة الله ورعايته
4	3	2	1	أنا أطلب مساعدة الله في التخلص من غضبي
4	3	2	1	أنا أحاول مراعاة الله عندما أضع خططي
4	3	2	1	أنا أحاول أن أرى كيف قد يحاول الله أن يقويني في وضع ما
4	3	2	1	أسأل الله الصفح عن خطاياي
4	3	2	1	أركز على الدين لكي لا أقلق بشأن مشاكلي
4	3	2	1	أتساءل عما إذا كان الله قد تخلى عني
4	3	2	1	أشعر بأن الله يعاقبني لعدم إخلاصي
4	3	2	1	أتساءل عن ما فعلته لكي يعاقبني الله
4	3	2	1	أتساءل إذا كان الله يحبني
4	3	2	1	أتساءل عما إذا كان مجتمعي الديني قد تخلى عني
4	3	2	1	أقرأ أن الشيطان قد جعل هذا يحدث
4	3	2	1	أنا أتشكك في قوة الله

مدرج أدناه بعض المشاكل التي لدى الأشخاص في بعض الأحيان. يرجى قراءة كل واحدة بعناية وقرر ما إذا كنت شعرت بالإزعاج أو بالأسى بأي منها خلال الأسبوع الماضي بما في ذلك اليوم. يرجى وضع دائرة واحدة حول رقم كل مشكلة.

إطلاقاً	قليلاً	كثيراً	جداً	
1	2	3	4	شعور بإنخفاض في الطاقة و تباطؤ
1	2	3	4	تلوم نفسك علي أشياء
1	2	3	4	تبكي بسهولة
1	2	3	4	فقدان الإهتمام الجنسي والمتعة الجنسية
1	2	3	4	فقدان الشهية
1	2	3	4	صعوبة في النوم أو الإستمرار في النوم
1	2	3	4	الشعور بفقدان الأمل في المستقبل
1	2	3	4	الشعور بالحزن
1	2	3	4	الشعور بالوحدة
1	2	3	4	التفكير في إنهاء حياتك
1	2	3	4	شعور بالإنحصار أو التقيد
1	2	3	4	القلق كثيرا بالأشياء
1	2	3	4	الشعور بعدم الإهتمام بالأشياء
1	2	3	4	الشعور بأن كل شئ مجهود
1	2	3	4	الشعور بأنه لا قيمة لك

يرجى وضع دائرة لكل سؤال حول الإجابة التي تتناسب مع كيف تفكر عموماً في نفسك.

إطلاقاً	قليلاً	بعض الشيء	كثيراً	كثيراً جداً	
1	2	3	4	5	ما هو مدى تدينك؟
1	2	3	4	5	ما مدى أهمية الإسلام في حياتك؟

بالنسبة للعبارات التالية، يرجى التفكير في كل بيان ووضع دائرة حول صواب أو خطأ لتعكس مدى صحة كل واحدة منها بالنسبة لك.

خطأ	صواب	أحياناً يكون من الصعب علي المضي في عملي إذا لم يشجعني أحد
خطأ	صواب	أحياناً أشعر بالإمتعاض عندما لا أحصل علي ما أريد
خطأ	صواب	في بعض الأحيان ينست من فعل شيء لشعوري بضائلة قدراتي
خطأ	صواب	كانت هناك أوقات عندما يجتاحني شعور بالتمرد ضد أولي الأمر مع اني أعرف انهم علي حق
خطأ	صواب	بغض النظر مع من أتحدث، فأنا دائماً مُنصت جيد
خطأ	صواب	كانت هناك مناسبات عندما استغلّيت شخص
خطأ	صواب	أنا دائماً مستعد للإعتراف بخطني عندما أخطئ
خطأ	صواب	أنا في بعض الأحيان أحاول الثأر بدلا من الصفح والنسيان
خطأ	صواب	أنا دائماً مثال للكياسة، حتى مع الناس الذين يصعب تقبلهم
خطأ	صواب	لم يحدث أن إنزعجت ابدا عندما أعرب الناس عن أفكار مختلفة تماما عن أفكاري
خطأ	صواب	كانت هناك أوقات عندما كنت غيور من حسن حظ الآخرين
خطأ	صواب	أنا أنزعج بعض الأحيان من الناس الذين يطلبون معروف مني
خطأ	صواب	لم يسبق لي أن قلت عمدا شيئا أدي إلي إيذاء مشاعر الآخرين

شكرا لك لملء الاستبيان. المعلومات التي قدمت هي محل تقدير كبير.

إذا كان لديك أي أسئلة برجاء ألا تتردد في الاتصال بالباحث الرئيسي:

Dina ElSayed Bedair
Trainee Clinical Psychologist
Norwich Medical School
University of East Anglia, Norwich NR4 7TJ
Email: d.bedair@uea.ac.uk
Phone: 07804552684

إذا شعرت بالإنزعاج من جراء هذا الاستبيان يمكنك الاتصال بخط مساعدة المجتمع الإسلامي علي
02089048193 أو 02089086715 (أيام الإثنين حتي الجمعة من 10:00 حتي 13:00) أو
يمكنك الاتصال بخط السامريون على 08457909090 (24 ساعة في اليوم، 365 يوما في السنة).

يرجى تسليم مجموعة الاستبيان هذه بعد ملئها إلى الباحثة أو باستخدام المظروف طيه المكتوب عليه
العنوان.

شكرا

Appendix H
Histograms With Normality Curves for Study Variables

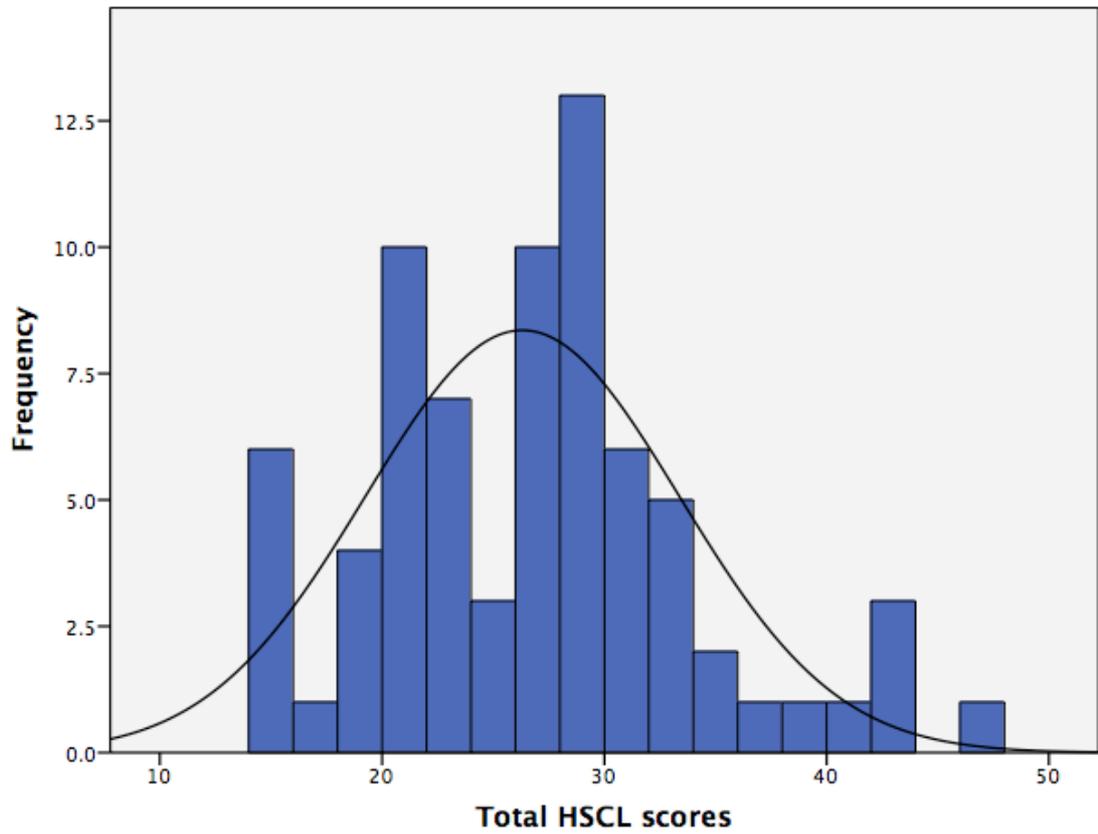


Figure H1. Histogram of depression scores.

Note. HSCL = Hopkins Symptom Checklist, Depression Subscale.

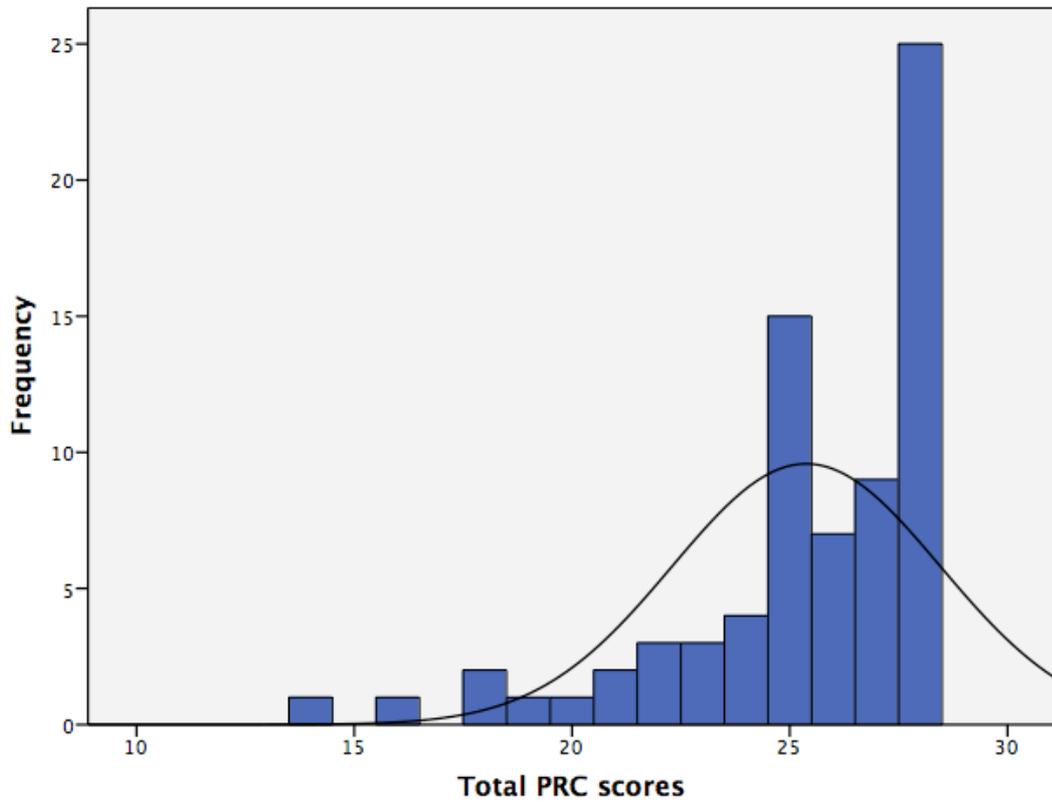


Figure H2. Histogram of Positive Religious Coping scores.
Note. PRC = Positive Religious Coping.

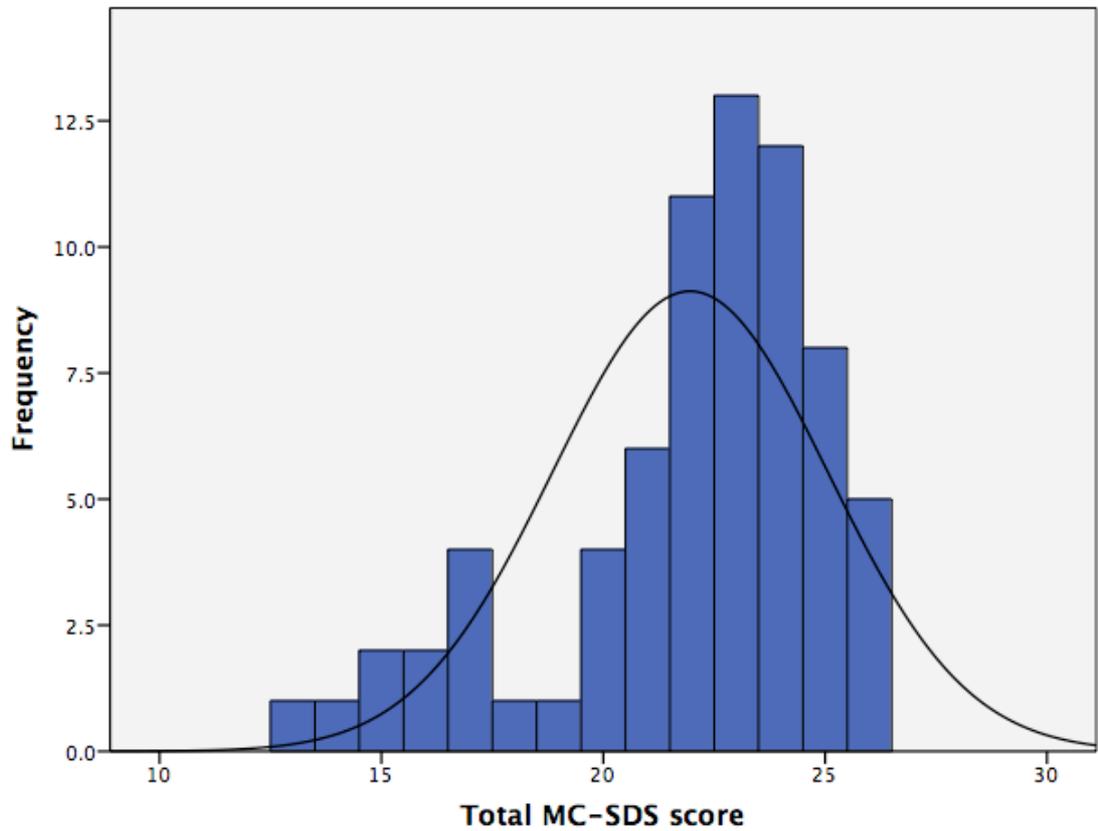


Figure H3. Histogram of Marlowe-Crown-Social Desirability Scale scores.
Note. MC-SDS = Marlowe-Crown Social Desirability Scale.

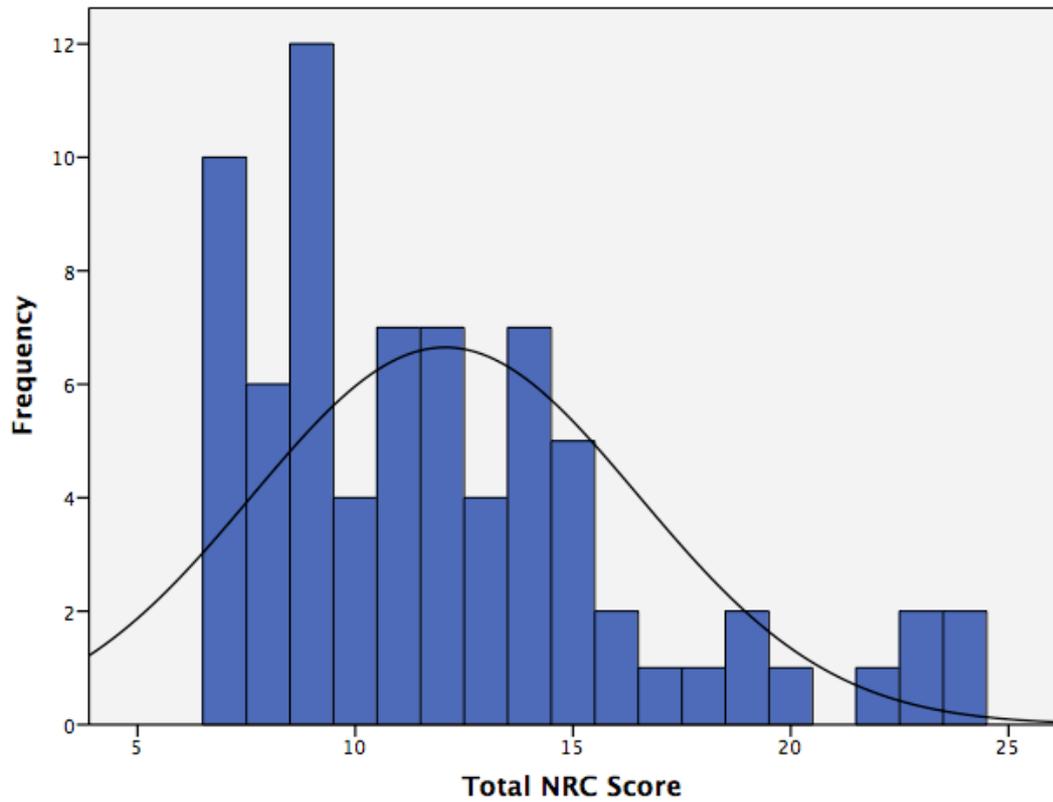


Figure H4. Histogram of Negative Religious Coping scores.
Note. NRC = Negative Religious Coping.

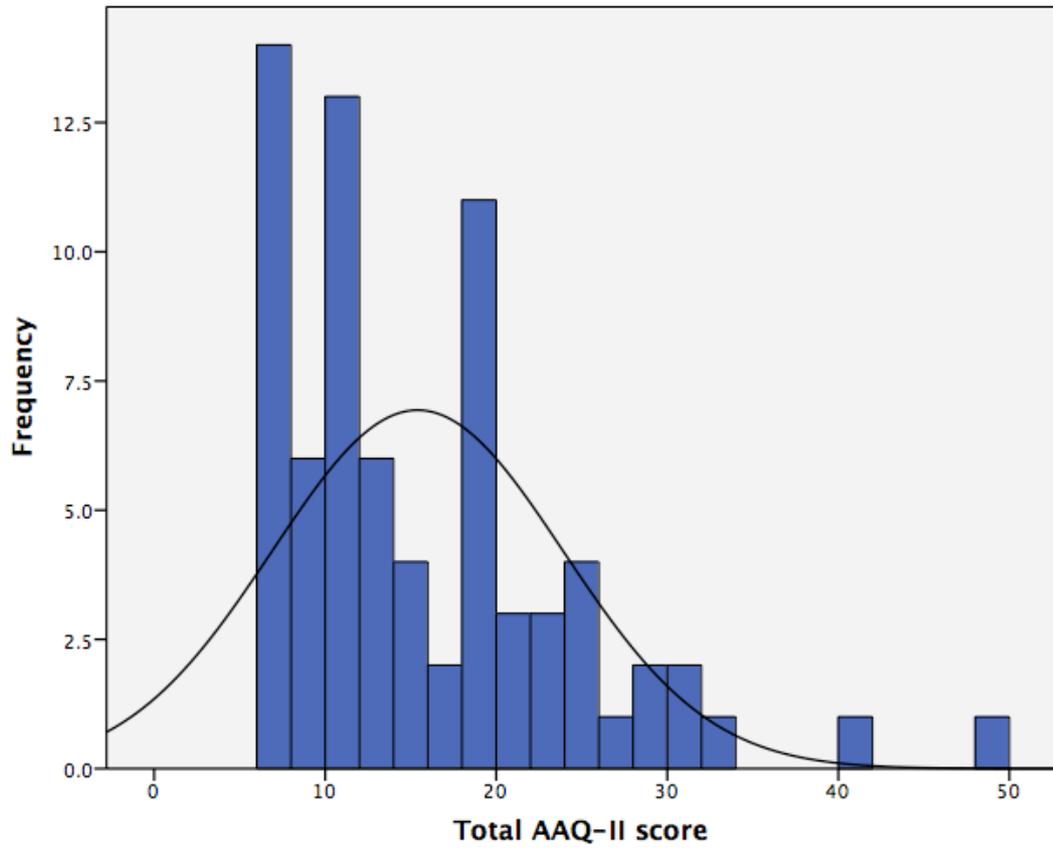


Figure H5. Histogram of Acceptance and Action Questionnaire-II scores.
Note. AAQ-II = Acceptance and Action Questionnaire-II.

Appendix I
Z-Scores for Skewness and Kurtosis

Table I

Z-score calculations for skewness and kurtosis of study variables

Measure	Skewness (<i>SE</i>)	Skewness Z-score	Kurtosis (<i>SE</i>)	Kurtosis Z-score
PRC	-1.6 (.28)	-5.71***	2.7 (.55)	4.91***
NRC	1.1 (.28)	3.93***	.69 (.55)	1.26
AAQ-II	1.4 (.28)	5.00***	2.6 (.55)	4.73***
HSCL	.60 (.28)	2.14*	.46 (.55)	0.84
MC-SDS	-1.1 (.29)	-3.79***	.67 (.56)	1.20

Note. HSCL = Hopkins Symptom Checklist; AAQ-II = Acceptance and Action Questionnaire-II; PRC = Positive Religious Coping; NRC = Negative Religious Coping; MC-SDS = Marlowe-Crown Social Desirability Scale.

Z-scores are calculated by dividing the skewness or kurtosis value by its standard error (*SE*; Field, 2009). Z-scores greater than 3.29 are significant at the $p < .001$ level, z-scores between 3.29 and 2.58 are significant at the $p < .01$ level, and z-scores between 2.58 and 1.96 are significant at the $p = .05$ level.

Significant results of z-score calculations are denoted by asterisks.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix J
Scatterplot Diagrams of Hypothesised Correlations

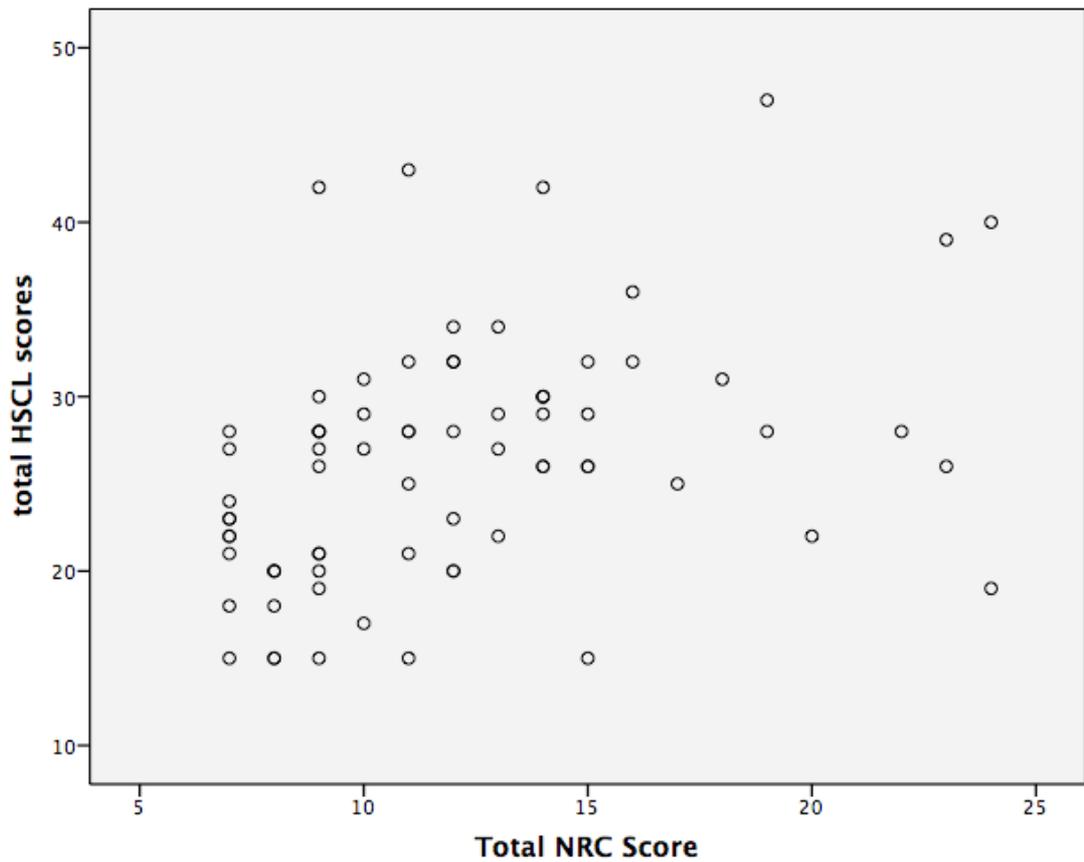


Figure J1. Scatterplot diagram of total HSCL and NRC scores.
Note. HSCL = Hopkins Symptom Checklist, Depression Subscale, NRC = Negative Religious Coping.

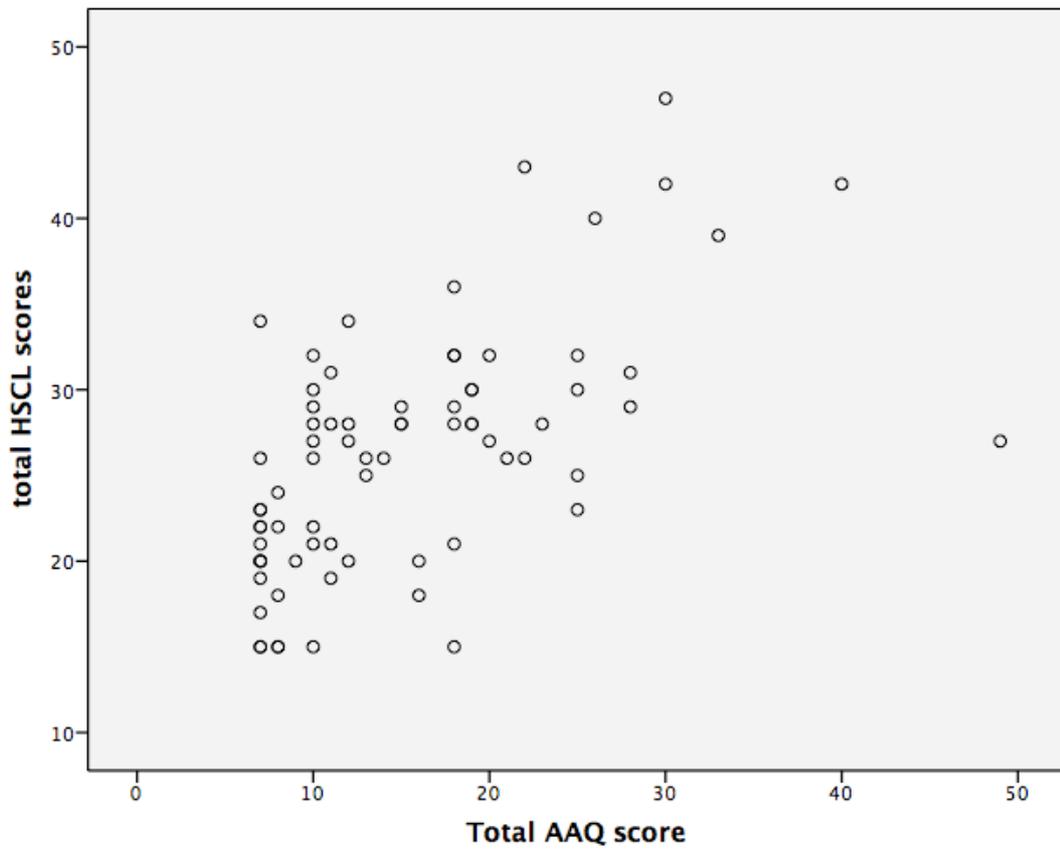


Figure J2. Scatterplot diagram of total HSCL and AAQ-II scores.
Note. HSCL = Hopkins Symptom Checklist, Depression Subscale, AAQ = Acceptance and Action Questionnaire-II.

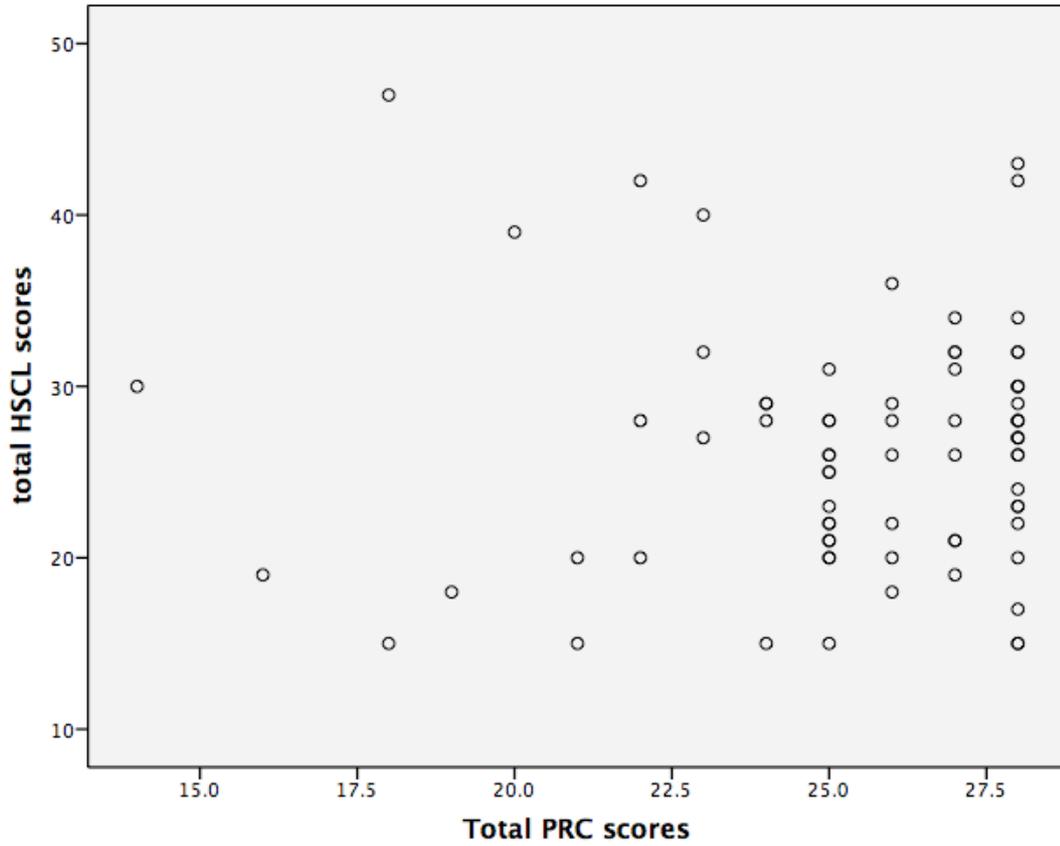


Figure J3. Scatterplot diagram of total HSCL and PRC scores.
Note. HSCL = Hopkins Symptom Checklist, Depression Subscale, PRC = Positive Religious Coping.

Appendix K
Scatterplot Diagrams of Standardised Residuals

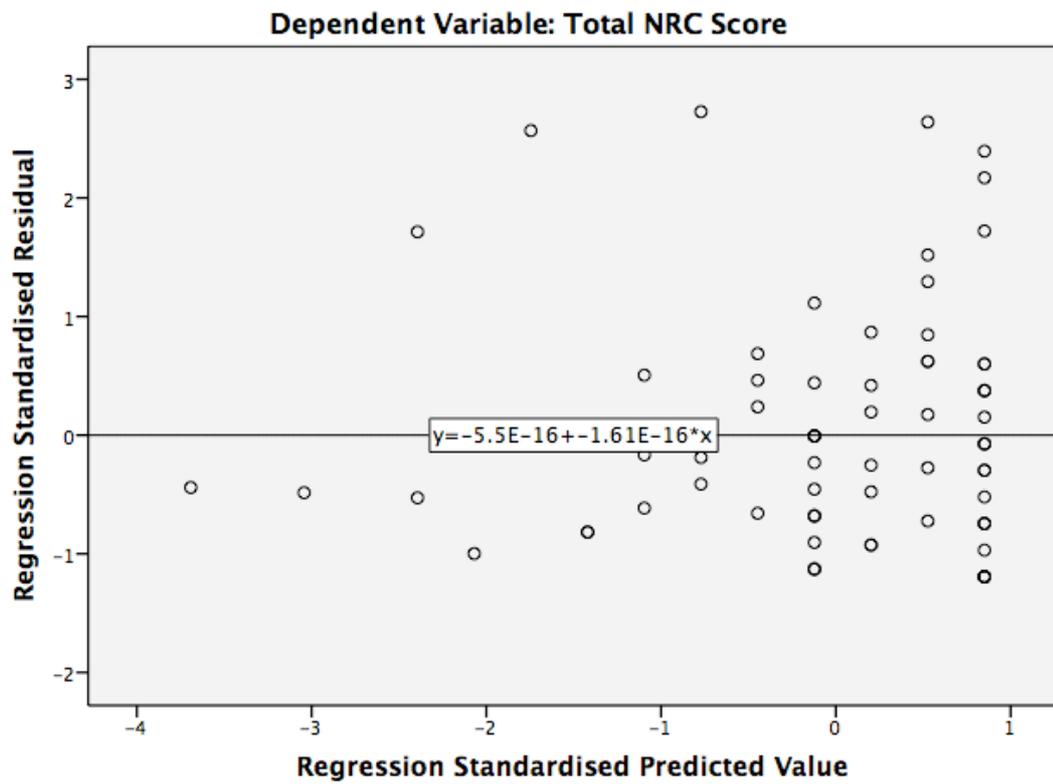


Figure K1. Scatterplot diagram of standardised residuals of NRC with line of fit.
Note. NRC = Negative Religious Coping.

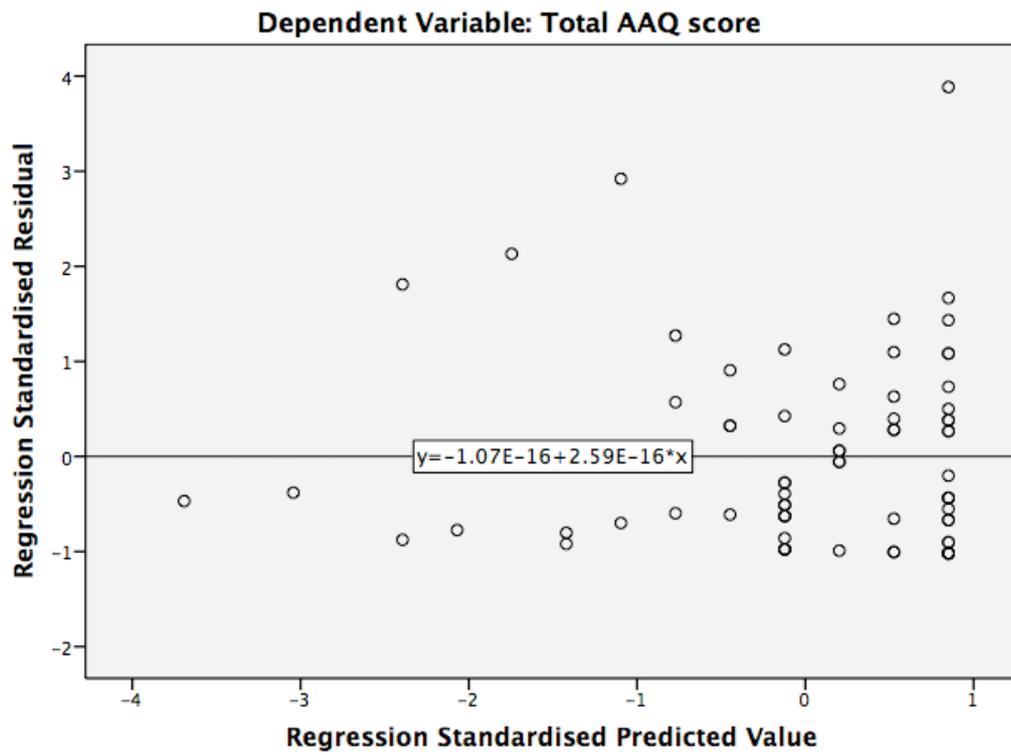


Figure K2. Scatterplot diagram of standardised residuals of EA with line of fit.
Note. EA = Experiential Avoidance.

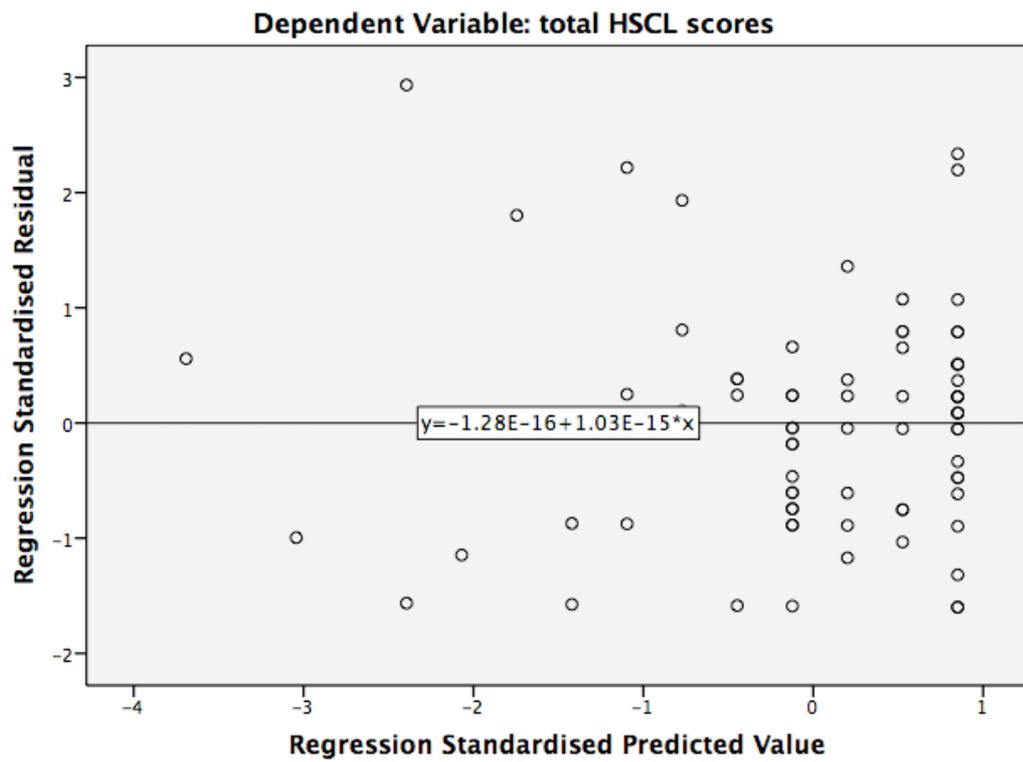


Figure K3. Scatterplot diagram of standardised residuals of HSCL with line of fit.

Note. HSCL = Hopkins Symptom Checklist, Depression Subscale.