

Attitudes towards Ageing and Quality of Life among Older Adults with Depression and
Anxiety

Hope Westgate

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Thesis Portfolio Abstract

Objectives: The thesis aims to synthesise studies on depression and attitudes towards ageing among older adults. Secondly, it aims to bridge the gap in the current literature by examining attitudes towards ageing and quality of life among older adults with late life anxiety.

Design: The thesis is presented as a portfolio and includes: a systematic review on depression and attitudes towards ageing among older adults, a bridging chapter, an empirical paper examining attitudes towards ageing and quality of life among older adults with clinical anxiety compared to a non-clinical sample of older adults, an extended methodology chapter, an additional results chapter, and an overall discussion and critical evaluation chapter.

Results: The systematic review synthesised the research on attitudes towards ageing and depression among older adults; it indicated that there is strong evidence that older adults who have depression, or more depressive symptoms, are more likely to have negative attitudes towards ageing. The empirical paper showed that older adults with clinical anxiety accessing mental health services have more negative attitudes towards ageing and a poorer quality of life compared to those older adults from a non-clinical setting, however, clinical anxiety was not a unique contributor of attitudes towards ageing and quality of life.

Conclusions: Older adults who experience depression or anxiety are more likely to have negative attitudes towards ageing. Moreover, quality of life is poorer among those older adults within mental health settings who experience anxiety compared to those in the community. This thesis has clinical implications for the assessment and treatment of late life anxiety and depression among older adults. Findings have highlighted the need for future research in this area to concentrate on using clinical populations and longitudinal designs.

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Thesis Portfolio Introduction

Brief Background

Theory suggests that there is a negative stereotype of ageing which exists in society, and that as adults get older this stereotype becomes a self-stereotype (Levy, 2009). Research, however, indicates that among older adults, attitudes towards ageing are generally positive (Bryant et al., 2012), and therefore studies have examined what factors may make an older adult more likely to possess negative attitudes towards ageing. There is growing research to support a relationship between mental health difficulties and negative attitudes towards ageing among older adults (Bryant et al., 2012; Chachamovich, Fleck, Laidlaw, & Power, 2008). Laidlaw (2015) has developed a cognitive behavioural model which outlines why this relationship exists. This model (outlined in Figure 1) underpins the current thesis and will be continually referred to throughout the portfolio.

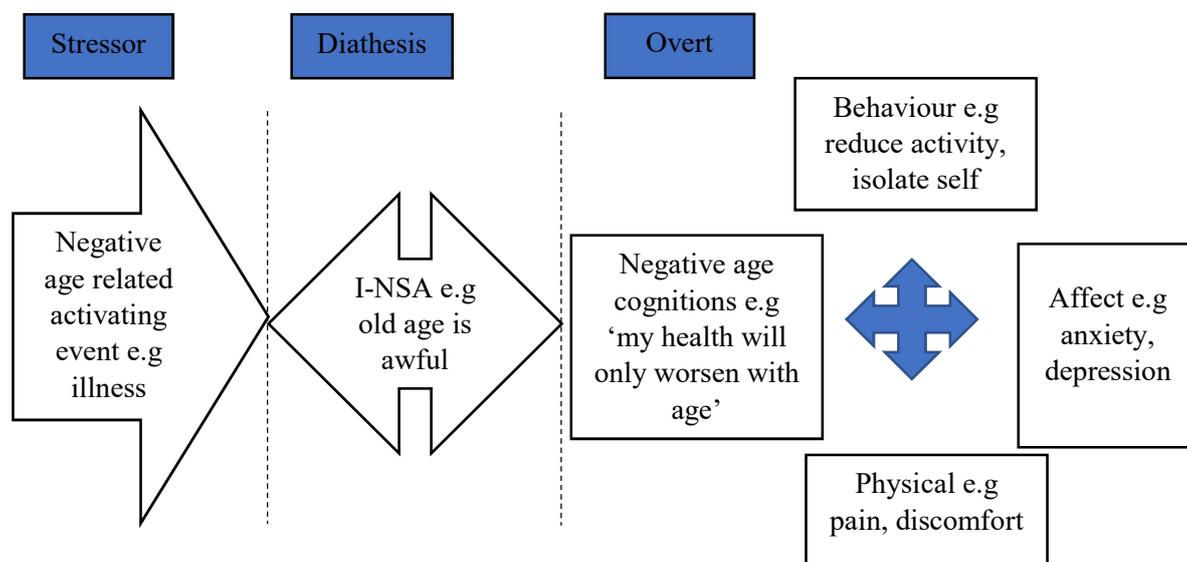


Figure 1. Vicious cycle of negative attitudes towards ageing and negative affect, adapted from Laidlaw (2015). I-NSA refers to the internalised negative stereotype of ageing.

Definition of Key Terms

The literature uses terms such as ‘age stereotypes’ ‘age prejudice’ and ‘attitudes towards ageing’ interchangeably when describing views on ageing, and there is much overlap in the definition of these terms (Diehl et al., 2014). For the purposes of this thesis,

‘attitudes towards ageing’ will be the main term used to describe views on ageing, this is considered to be an umbrella term which encapsulates stereotypes and prejudice (Diehl et al., 2014). This term is also consistent with the terminology used in recent validated measures to establish the attitudes of older adults towards ageing (Laidlaw, Power, & Schmidt, 2007) and is in line with the terms used in relevant models (Laidlaw, 2015).

The terms ‘depression’ and ‘anxiety’ are used throughout the thesis portfolio; the authors’ definition of these terms is broad. Depression is used to refer to someone experiencing chronic or impairing low mood. Anxiety is used to refer to someone experiencing chronic or impairing worry or fear. It is considered that these can be measured through self-report questionnaires, via clinician assessment, or via structured interviews which are conducted in line with the Diagnostic Statistical Manual of Mental Disorders (DSM) or International Classification of Diseases (ICD) definitions of depressive and anxiety disorders.

Outline of the Thesis Portfolio

This thesis portfolio will explore attitudes towards ageing and quality of life in relation to depression and anxiety among older adults. The thesis starts with a systematic review of the literature on depression and attitudes towards ageing among older adults. A bridging chapter then links this review to the empirical paper, which focuses on attitudes towards ageing and quality of life among a clinical sample of older adults with late life anxiety compared to a non-clinical sample of older adults who report no mental health difficulties. Additional chapters have been written to provide an extended account of the methodology and the outcome of exploratory analyses. Finally, a discussion chapter is provided which integrates all the findings, relates them to theory, and provides a critical commentary on the thesis.

Authors Rationale for the Thesis

The research sparked the authors interest, who is a Trainee Clinical Psychologist, due to its potential important clinical implications when working with older adults in mental health services. The author noted that within mental health services for older adults, clinicians often made anecdotal observations about negative attitudes towards ageing among their clients, but these observations did not appear to be reflected in the clinical research or within psychological therapies yet. There therefore appeared to be a gap between observations being made in clinical settings and research conducted in clinical settings. For this reason, in line with the scientist-practitioner model (Shapiro, 2002), the author sought to establish scientific research which could be applied within a clinical setting. For this to be established, research must be based in clinically realistic settings (Shapiro, 2002), which is what the thesis aimed to do.

Chapter One: Systematic Review

This chapter consists of the systematic review which was prepared for submission to 'International Psychogeriatrics'. Author guidelines (Appendix A) have been followed when writing up this chapter. There are no fixed word limits for reviews within this journal. The systematic review is 8263 words in length (9879 words overall).

Depression and Attitudes towards Ageing Among Older Adults: A Narrative Review

Hope Westgate¹

Department of Clinical Psychology, University of East Anglia, UK

Dr Adrian Leddy

Department of Clinical Psychology, University of East Anglia, UK

Professor Kenneth Laidlaw

Department of Clinical Psychology, University of East Anglia, UK

¹*Corresponding author: Email: h.westgate@nhs.net.*

Abstract

Background: Emerging theory and research indicates that older adults with mental health difficulties are more likely to have negative attitudes towards ageing. The aim of the systematic review was to synthesise the research exploring depression and attitudes towards ageing among older adults.

Methods: A literature search of three major databases (PsychINFO, MEDLINE, CINAHL) was conducted and relevant journals were hand searched. Studies were included if they directly examined the relationship between depression and attitudes towards ageing among adults aged 60 or over.

Results: Based on the inclusion/exclusion criteria, 13 studies were included in the review. The key findings from these studies were abstracted and each study was rated for methodological quality.

Conclusion: All studies, with the exception of one, illustrated that older adults who have depression, or score higher on depression measures, are more likely to have negative attitudes towards ageing. Continued research in this area using clinical populations is warranted; these studies could have implications for the treatment of depression.

Key words: attitudes towards ageing, age stereotype, depression, older adults

Introduction

Currently, the world is experiencing a rise in the number of older adults, with reports indicating that between 2015 and 2050 the number of adults over 60 will double (World Health Organisation (WHO), 2015). Due to this, the process of ageing, and its associated consequences, is becoming increasingly important to explore. A large amount of research has focused on age stereotypes that individuals hold. Age stereotypes are described as a perception of older adults (Brubaker and Powers, 1976) and can be positive or negative (Bennett and Gaines, 2010).

Age Stereotypes

Levy (2003) reports that individuals predominantly hold negative age stereotypes about older people. Common perceptions include people thinking that older people are frail (Levy, 2003) and cognitively impaired (Levy et al., 2014). The stereotype embodiment theory (Levy, 2009) explains the impact of negative age stereotypes. Levy (2009) suggests that negative age stereotypes are internalised when individuals are young and become self-stereotypes as people age. The transition to them becoming self-stereotypes occurs when people are exposed to cues that they are 'old' (Levy, 2009). These self-stereotypes are maintained by exposure to negative portrayals of the elderly (Levy et al., 2000), such as those presented in the media (Levy et al., 2014), and by information processing biases (Levy, 2003).

In contrast to the stereotype embodiment theory, Brubaker and Powers (1976) state that whether negative stereotypes are internalised by individuals as they get older, depends on their own self-concept. If this self-concept is positive, people attend to the positive stereotype of old; conversely if it is negative they attend to the negative stereotype. This has been termed the externalisation hypothesis (Rothermund and Brandtstädter, 2003). Rothermund and Brandtstädter (2003) carried out a cross-sequential study to determine the credibility of the stereotype embodiment theory and the externalisation hypothesis. They

found that, as Levy (2009) proposes, age stereotypes formed early on in life impact later self-appraisals. They also found, consistent with the externalisation hypothesis, that one's personal experiences of ageing impacts on an individual's generalised view of older people and ageing. This indicates that ones' attitude towards ageing can reflect personal experiences as well as learnt stereotypes.

Negative attitudes towards ageing are akin to dysfunctional attitudes (Laidlaw, 2015). Dysfunctional attitudes are thought to be stable traits which predispose individuals to distress (Miranda & Persons, 1988), but a persons' ability to access and report these attitudes are found to be mood-state dependent (Miranda & Persons, 1988). Like this, attitudes towards ageing may represent a stable perception (Chachamovich et al., 2008), but the activation of these attitudes is likely a state which is dependent on mood (Laidlaw, 2010).

Historically, research has predominantly focused on measuring attitudes towards ageing among younger adults, rather than older adults (Levy, 2009). Measures which assess adults attitudes towards ageing may ask people to rate statements regarding older people, such as 'most old people are irritable' (Kogan, 1961). Research shows that generally younger adults hold negative attitudes towards ageing (Allan and Johnson, 2008); this has been documented in both Western and non-Western cultures (Luo et al., 2013) and among healthcare professionals (Kearney et al., 2000; Abreu and Caldevilla, 2015).

Attitudes Towards Ageing among Older Adults

There is a need to examine the attitudes of older people themselves towards ageing to fully understand the ageing process (Laidlaw et al., 2007). Also, there is a need to examine multiple domains of attitudes towards ageing as attitudes may not be wholly positive or negative, and people may hold a mixture of positive and negative attitudes. In order to examine this, questionnaires have been developed for older adults which allow the

examination of both positive and negative attitudes towards ageing, for example the Attitudes towards Ageing Questionnaire (AAQ; Laidlaw et al., 2007). This has three subscales to measure attitudes towards ageing: psychosocial loss, physical change, and psychological growth (Laidlaw et al., 2007). Psychosocial loss refers to losses which may be related to ageing. Physical change refers to the experience of ageing, health, and any physical changes which may occur as someone gets older. Psychological growth refers to gains people may perceive as they age. A study that used the AAQ among older adults indicated that most older people actually hold positive attitudes towards ageing (Bryant et al., 2012), which is in contrast to the research carried out on younger adults (Allan and Johnson, 2008).

Laidlaw (2015) suggests that mental health plays a key role in attitudes towards ageing, and has developed a model to account for this relationship. According to Laidlaw (2015), the negative stereotype of ageing remains latent until activated by events associated with ageing. When such events are interpreted in line with the internalised negative age stereotype, this can set off a vicious cycle in which negative age-related cognitions, negative emotions, behaviour and physicality all interact. Any negative changes may then be viewed as a natural consequence of ageing; thus, the negative self-stereotype is reinforced. Laidlaw's (2015) model suggests that due to the negative stereotype of ageing which exists, difficulties such as depression may make older people more likely to hold negative attitudes about ageing, and such attitudes can negatively impact on affect. Thus, it seems that attitudes towards ageing could be a key maintaining factor in mental health difficulties such as depression.

Rationale for the Current Review

To date, there are no published reviews on the relation between mental health and attitudes towards ageing among older adults. One review has looked at attitudes towards ageing in relation to health among older adults (Warmouth, Tarrant, Abraham & Lang,

2016), however mental health specifically was not explored. Conducting a contemporary review of studies which have examined mental health in relation to attitudes towards ageing would enable an understanding of this relationship and could have clinical implications for psychological treatment. There are more studies which have examined the relationship between depression and attitudes towards ageing, rather than other mental health difficulties (Long, 2013), therefore this review will focus on depression in relation to attitudes towards ageing. As attitudes towards ageing are considered multi-dimensional (Laidlaw et al., 2007), exploring what specific attitudes are most related to depression would be helpful as this could help identify specific areas treatment should focus on.

Review aims

The principal aim of this systematic review is to synthesise research which has examined depression in relation to attitudes towards ageing among adults aged 60 and over. The secondary aim is to explore which specific domains of attitudes towards ageing are found to be most related to depression.

Method

The author referred to the guidelines provided by the Centre of Reviews and Disseminations (University of York, 2009) when carrying out the systematic review. The review took place between December 2016-March 2017.

Inclusion and Exclusion Criteria

The inclusion and exclusion criteria were developed based on the study aims and by referring to the PICOS criteria published in the CRD (University of York, 2009).

Population. Studies which involved participants 60 years or older were included. If studies included participants younger than 60 they were excluded. Studies were included regardless of whether they used clinical or non-clinical populations. No exclusion was made based on the country a study was conducted in as the authors considered attitudes

towards ageing to be a construct which can be measured within multiple cultures (Laidlaw et al., 2007). In support of this, when the AAQ was being developed, experts from Western and non-Western countries were consulted about the three domains of attitudes towards ageing and the questionnaire was validated across various cultures (Laidlaw et al., 2007).

Study Design. Cross-sectional, case control and cohort studies were included. Studies which were qualitative in nature with no statistical outcomes were excluded.

Measures. For the purposes of this review, depression is conceptualised as the presence of impairing low mood, which can be measured with self-report measures or by structured clinical assessment. Studies were only included if they assessed depression by using a standardised and validated measure. As questionnaires to assess attitudes towards ageing are less well developed, studies were not required to make use of one of the validated measures as this would exclude too many relevant articles. The measure for attitudes towards ageing was required to measure own attitudes (views, stereotypes, or prejudice) towards older people, their own ageing, or the ageing process. Those studies which measured perceived societal attitudes towards older adults were excluded as this was not of interest.

Primary Outcome. The outcome for studies needed to include statistics which ascertained any direct relations between depression and attitudes towards ageing. The relationship could be assessed within groups, by examining associations between depressive symptoms and attitudes towards ageing, or between groups, by comparing those classified as depressed to those not classified as depressed on attitudes towards ageing. The *p* value was used to indicate statistical significance.

Secondary Outcome. The review was also interested in studies which assessed multiple domains of attitudes towards ageing and allowed comparisons of which domains are most related to depression. It was anticipated that *p* values would be used to compare which domains of attitudes towards ageing were most related to depression.

Source. Articles were included from inception to March 2017 to include all relevant studies. Given that unpublished studies are not often peer reviewed, and could lack methodological rigour, they were excluded in the database search. However, in an attempt to include unpublished studies, key authors within the field were contacted about any relevant unpublished studies they were aware of. Where articles used the same data set, the least suitable article was excluded to eliminate repeated data. Articles were excluded if they were not printed in English as translation services were not available.

Search Strategy

The Cochrane database was searched to ensure there are no published reviews of this area already, of which none were identified. An unpublished review was identified which examined mental health in relation to attitudes towards ageing (Long, 2013). As this review did not contain studies which were conducted in clinical populations, included adults younger than 60, and is outdated, the current review was still warranted. The databases searched for the purposes of this review included: PsychINFO (1947-2017), MEDLINE (EBSCO; 1965-2017), and CINAHL Complete (1952-2017). These databases were searched using the search terms (depress*) AND (((attitude*) AND (ageing OR aging)) OR ((ageism) OR (agism) OR (“age stereotyp*”) OR (“age prejudice”))) in the title, abstract, and keywords. The following limiters were used: English language, human population, and peer reviewed academic journal articles. In addition, relevant journals were hand searched for articles and recommendations were received from researchers in the field. Articles which met the inclusion criteria were cross referenced and the primary authors of included studies were searched for to obtain any more relevant articles. The main author was contacted if more information was required to determine the suitability of a study for this review.

Data Abstraction

For each article, the following information was extrapolated: Participant characteristics, study design, depression measure, attitudes towards ageing measure, reliability statistics, analysis and relevant results.

Assessment of Heterogeneity

An assessment of the heterogeneity of studies was conducted by comparing studies included in the review on: outcome measures, population, design, and analysis.

Planned Analysis

A narrative systematic review, similar to the review by Warmouth and colleagues (2016), was deemed adequate to address the review aims. A meta-analysis was also deemed potentially appropriate, depending on the extend of heterogeneity between studies.

Quality Criteria

There is no consensus on what method is best to use when assessing the quality of observational studies (Mallen et al., 2006). For this study, a quality checklist was developed by using the Quality Assessment Tool for Quantitative Studies (QATQS; Effective Public Health Practice Project, 1998a) (see Appendix B). This tool was used as it has been assessed as being a valid and reliable tool for assessing quantitative studies (Thomas et al., 2004). It was anticipated that this tool could be used to give an indication of the methodological strength of studies which would allow insight into their value, rather than being used to exclude studies.

Some criteria in the QATQS were modified to make it relevant to this specific review. For example, in this review it felt important that measures were assessed for whether they are appropriate for the older adult population, as the importance of older adult specific measures is well recognised (Conradsson et al., 2013). Criteria which were less relevant to the current review, such as blinding, were not included in the quality review. The final quality criteria (see Appendix C) therefore reflects this specific review,

as well as evidence-based quality review guidelines. Qualitative ratings of studies were used as individual quality scores are reported to be problematic (Univeristy of York, 2009). Each separate criteria was rated as 'strong', 'moderate', 'weak', or 'not applicable', by referring to the dictionary provided (Effective Public Health Practice Project, 1998b). In keeping with the QATQS, the overall quality of each study was defined as: strong (no criteria rated as weak), moderate (one criteria rated as weak), or weak (two or more criteria rated as weak).

Risk of Bias

The Cochrane risk of bias tool (Higgins & Green, 2011) was not used within this review because it lacked relevance for observational studies, and as such has not been used in a similar review (Warmouth et al., 2016). Instead, the quality criteria included items related to risk of bias which could occur in observational studies, such as missing data. The author also searched websites which register studies (<http://apps.who.int/> and <https://clinicaltrials.gov/>) to look for potentially relevant articles which were never published, to highlight if publication bias could be an issue.

Results

Study Inclusion

The database search yielded 1603 articles to begin with and 1295 articles once duplicates were removed. Relevant journals which were reviewed also indicated potential papers (n=9). This was carried out on: Psychology and Aging (2006-2017) (n=2), Research on Aging (2006-2017) (n=2), The Gerontologist (2006-2017) (n=2), International Psychogeriatrics (2006-2017) (n=2) and the International Journal of Geriatric Psychology (2006-2017) (n=1). The author also received additional recommendations of articles (n=5) from authors within the field which could be relevant. The title and abstracts of these articles were screened based on the inclusion and exclusion criteria, and articles were

removed if they duplicated previously selected articles. This screening process resulted in a large proportion of articles being excluded (n=1260).

The remaining articles (n=49) were accessed in full and were screened using the inclusion and exclusion criteria. The author of one study (Freeman et al., 2016) was contacted to request more details needed to ascertain if the study met the inclusion/exclusion criteria. The study did not meet the criteria as data was not available for only those 60 years or over. Two articles screened used the same data set (Shenkin, Laidlaw et al., 2014; Shenkin et al., 2014). The study by Shenkin and colleagues (2014) modified the AAQ and used factors not intended to be used in the validation of the measure, therefore this article was excluded as it was deemed least suitable.

This process resulted in 37 articles being excluded, leaving 12 articles in total. The references of these final articles were scanned to check for any more relevant studies, of which there were six. Based on the inclusion criteria, five of these articles were excluded and one was retrieved. The reasons for excluding articles can be found in Appendix D. The final number of articles to be included in the review were 13. The literature search process is provided in a flow diagram in Figure 1.1. The details of the final studies are described in Table 1.1.

Quality Assessment

An evaluation of the quality of each study was completed. Due to the subjective nature of assessing quality and the necessity of having a second person to provide ratings (SIGN, 2015), a Trainee Clinical Psychologist applied the quality criteria separately to the author. Cohen's kappa, an estimation of inter-rater reliability, was found to be 0.85, indicating strong agreement (McHugh, 2012). Disagreements were discussed, and final ratings were agreed upon. Based on this, an overall rating for each study's quality was made.

A summary of the results of this evaluation can be found in Table 1.1 and 1.2. The majority of included studies achieved a rating of ‘strong’ or ‘moderate’. The study by Coleman and colleagues (1993) stood out as the only study rated as ‘weak’ in overall quality; this was also the oldest study reviewed. Based on this finding, it is important that the results from this study must be interpreted with caution. Studies most commonly scored poorly on addressing missing data, with only five out of 13 studies being rated as ‘strong’ for this criterion. Also, studies commonly scored poorly on using a valid and reliable measure for attitudes towards ageing, with only six studies being rated as ‘strong’ for this criterion. The quality assessment should be referred to when interpreting the results of studies.

Risk of Bias

Risk of bias was assessed within the quality assessment. Given that many studies scored poorly on addressing missing data, this could have created a bias in the datasets. Websites which are used to register studies on were searched, however no relevant studies were found. It is important to note, though, that very few observational studies get formally registered (Williams et al., 2010) making it difficult to assess whether any studies may have been conducted and not published.

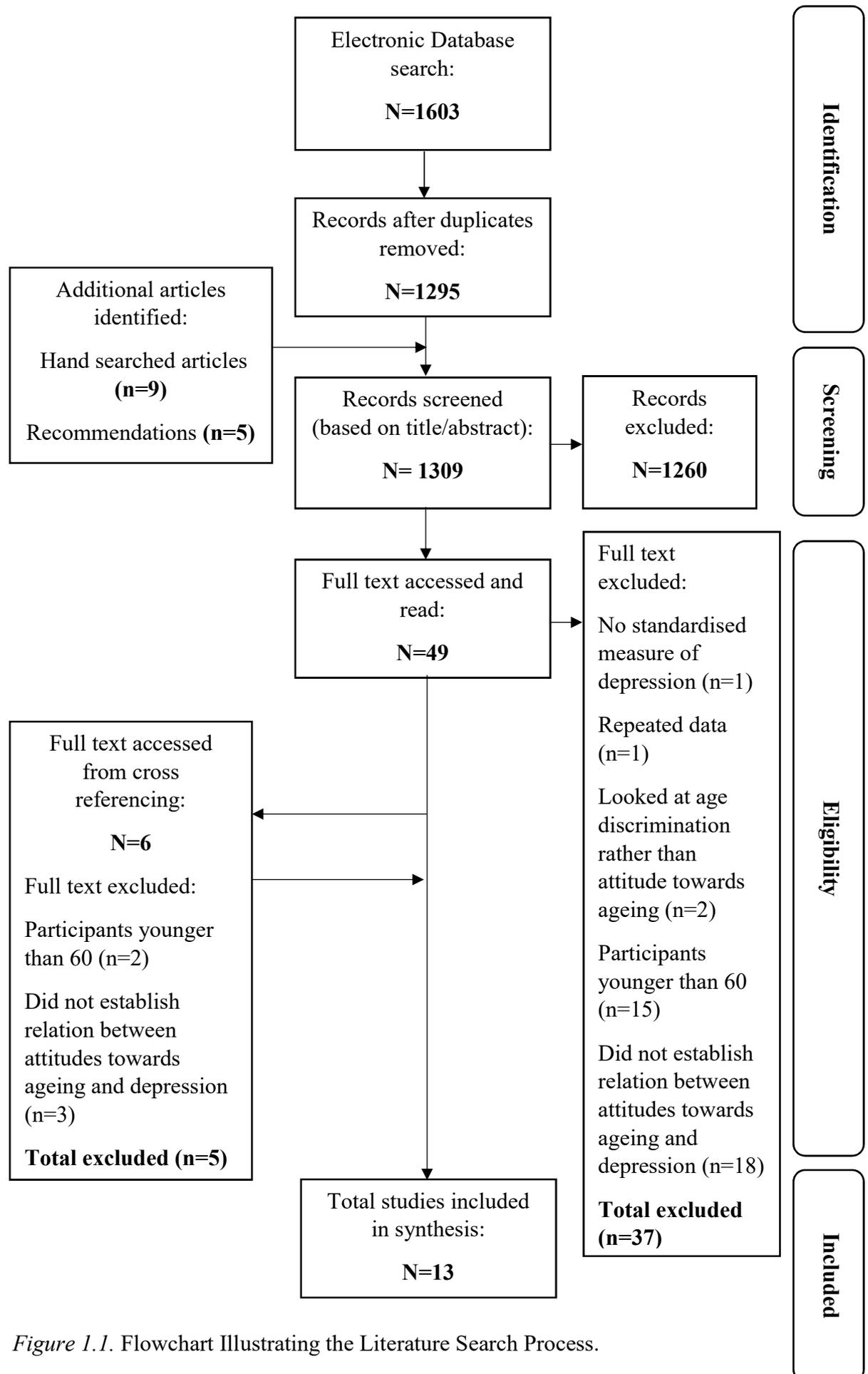


Figure 1.1. Flowchart Illustrating the Literature Search Process.

Table 1.1

Study Details of Included Studies and Overall Quality Rating

Author (year) Country	Participant characteristics	Study design	Depression measure and reliability scores	Attitudes towards ageing measure and reliability scores	Analysis and relevant findings	Quality rating
Bai and colleagues (2016) China	Age 60 years and over (mean=72.7) Sample Size N=954 Population Community sample	Type of Design Cross sectional design	Measure 15-item GDS Chinese version Mean Mean GDS score=3.98 Reliability Cronbach's alpha= .80	Measure Researcher developed measure, two questions about older people as a burden Mean Mean score=3.98 Reliability Cronbach's alpha= .84	Analysis Correlation and multiple regression. Main Findings A positive correlation was found between depression and burden views towards older people ($p<.001$). Burden attitudes predicted depression symptoms ($p<.001$), independent of other predictors.	++
Bryant and colleagues (2012) Australia	Age 60 years and over (mean=71.7) Sample size N=421 Population Community sample	Type of Design Cross sectional design	Measure CES-D Mean Mean CES-D score=9.27 Reliability Cronbach's alpha= .89	Measure AAQ Mean Mean AAQ scores= 16.39 (psychosocial loss), 26.12 (physical change), 28.49 (psychological growth) Reliability Cronbach's alpha= .61 (overall), .81 (psychosocial loss), .76 (physical change), .72(psychological growth)	Analysis Linear hierarchal regression analysis. Main Findings Negative attitudes towards ageing predicted higher depression scores, and explained 15% of the variance in depression ($p<.01$).	++
Chachamovich and colleagues (2008)	Age 60 years and over	Type of Design Cross sectional design	Measure 15-item GDS Mean	Measure AAQ Mean	Analysis T-tests, ANCOVA, and hierarchical regression.	+

20 countries	(sub syndromic group mean =71.8, depressed group mean =73.06) Sample size N=4316 Population Community sample		Sub syndromic group GDS mean score=2.57 Depressed group GDS mean score=8.49 Reliability Reliability statistics were not provided	Mean scores were not provided Reliability Reliability statistics were not provided	Main findings The depressed group had lower scores on attitudes towards aging than the sub syndromic group ($p<.001$). Depression accounted for the attitude towards ageing scores more so than demographics.	
Coleman and colleagues (1993) UK	Age 65 years and over at baseline (mean age in 1988= 81.6) Sample size N= 101 Population Community sample	Type of Design Longitudinal study over 10 years	Measure MADRS Mean Mean scores were not provided Reliability Reliability statistics were not provided	Measure Researcher developed measure, three items about attitudes to ageing Mean Mean scores were not provided Reliability Reliability statistics were not provided	Analysis Correlation and logistic regression. Main findings Increases in negative attitudes towards ageing were associated with increases in depression scores ($p<.05$). Negative attitudes at baseline predicted presence of depressive symptoms on follow up ($p<.001$). Among those without depression at baseline, negative attitudes predicted the later development of depression ($p<.01$). Attitudes predicted depression more than other variables studied.	0
Kalfoss and colleagues (2010) Canada and Norway	Age 60 years and over (Canada mean=72.32, Norway mean= 77.62) Sample Size N=692 Population	Type of Design Cross sectional design	Measure GDS used in Canada and 15-item GDS used in Norway Mean Mean scores were not provided. Reliability	Measure AAQ Mean Canada AAQ mean scores= 35.56 (psychosocial loss), 28.21 (physical change), 20.02 (psychological growth)	Analysis Correlation. Main Findings Higher presence of negative attitudes towards ageing was significantly associated with higher depression scores among Norwegians and Canadians ($p<.001$).	++

	Community sample		Cronbach's alpha= .88 (Canada), .80 (Norway)	Norway AAQ mean scores= 29.64 (psychosocial loss), 26.42 (physical change), 29.02 (psychological growth) Reliability Cronbach's alpha=.86 (overall), .84 (psychosocial loss), .68 (physical change), .75 (psychosocial growth)		
Lai and Tong (2012) China	Age 60 years and over (mean=79.1) Sample size N=228 Population Community sample living alone	Type of Design Cross sectional design	Measure Chinese version of 15-item GDS Mean Mean GDS score=3.82 Reliability Reliability statistics were not reported	Measure 5 statements created by previous researchers on attitudes towards ageing Mean Mean scores were not reported Reliability Cronbachs alpha=.67	Analysis Hierarchical multiple regression. Main findings Depression was associated with less positive attitudes towards ageing ($p<.01$). Depression exerted more of an influence on attitudes towards ageing than physical health.	+
Laidlaw and colleagues (2018) 20 countries	Age 60 years and over (mean=72.2) Sample Size N=2488 Population Community sample	Type of Design Cross sectional design	Measure 15-item GDS Mean Mean scores were not reported Reliability Reliability statistics were not reported	Measure AAQ AAQ-SF Mean Mean scores on AAQ-SF=9.54(psychosocial loss), 12.48(physical change), 14.17(psychological growth) Reliability Reliability statistics were not reported	Analysis Independent t-tests. Main findings Those who scored within the clinical range for depression, were more likely to have negative attitudes towards ageing for both versions of the AAQ ($p<.001$), than those who did not.	++
	Age	Type of Design	Measure	Measure	Analysis	+

Law and colleagues (2010) Scotland	60 years and over (mean=75.4) Sample Size N=52 Population Community and psychiatric sample	Cross sectional design	15-item GDS Mean GDS mean score in depressed group=8.7 GDS mean score in non-depressed group=2.1 Reliability Reliability scores were not provided	Attitudes towards own ageing scale from PGC Morale Scale Mean Mean score in depressed group=3.4 Mean score in non-depressed group=1.9 Reliability Reliability scores were not provided	ANCOVA and correlation. Main Findings The depressed group had more negative attitudes towards ageing when controlling for confounding variables ($p<.001$).	
Lu and colleagues (2010) Taiwan	Age 60 years and over (mean=69.7) Sample size N=316 Population Community sample	Type of Design Cross sectional design	Measure CES-D adapted for Chinese people Mean Mean scores were not provided Reliability Cronbach's alpha=0.84	Measure OPS standardized for Chinese people Mean Mean OPS scores= 4.74 (total), 4.61 (AP), 4.81 (PC), 4.72 (IR), 4.89 (WE) Reliability Cronbach's alpha= .82 (AP), .83 (PC), .84 (IR), .74 (WE), .93 (overall)	Analysis Correlation and hierarchical regression analysis. Main Findings Positive attitudes towards ageing were associated with lower depression scores ($p<.001$). Attitudes towards ageing predicted depression after controlling for factors like social support ($p<.05$).	++
Lucas-Carrasco and colleagues (2013) Spain	Age 60 years and over (mean=71.1) Sample size N=242 Population Community sample	Type of Design Cross sectional design	Measure GDS Mean Mean GDS score= 9.8 Reliability Reliability statistics were not provided	Measure AAQ Mean Mean AAQ scores= 26.7 (physical change), 27.7 (psychological growth) 27.7 (psychosocial loss) Reliability Cronbach's alpha= .73 (physical change), .59 (psychological growth), .70 (psychosocial loss)	Analysis Correlation and t-tests. Main findings Negative attitudes towards ageing was correlated with higher depression ($p<.01$), and the depressed group had significantly more negative attitudes towards ageing than the non-depressed group ($p<.001$).	+
	Age	Type of Design	Measure	Measure	Analysis	++

Luchesi and colleagues (2016) Brazil	60 years and over (mean=69.7) Sample size N=313 Population Community sample of elderly caregivers	Cross sectional design	15-item GDS Mean Mean GDS score=3.6 Reliability Cronbach's alpha=.73	Neri Scale to Assess Attitudes toward the Elderly Mean Mean score= 3.0 Reliability Cronbach's alpha=.89	Multinomial logistic regression analysis. Main Findings Depression was not a significant predictor of attitudes towards ageing.	
Moor and colleagues (2006) Germany	Age 60-64 (mean=62.9) Sample size N=362 Population Community sample	Type of Design Cross sectional design	Measure SDS Mean Mean SDS score=34.38 Reliability Cronbach's alpha=.79	Measure Attitudes towards ones own ageing, within PGC Morale Scale Mean Mean score=1.38 Reliability Cronbach's alpha=.65	Analysis Correlation. Main findings Depression score positively correlated with negative attitudes towards own ageing ($p<.05$).	++
Shenkin, Laidlaw and colleagues (2014) Scotland	Age Approximately 70 (mean=69.5) Sample size N=792 Population Community sample	Type of Design Cross sectional design	Measure HADS Mean Mean scores not reported, median HADS score=2 Reliability Reliability statistics were not reported	Measure AAQ Mean Mean scores AAQ scores= 15.2 (psychosocial loss), 28.0 (physical change), 28.3 (psychological growth) Reliability Cronbach's alpha= .80 (psychosocial loss), .77 (physical change), .75 (psychological growth)	Analysis Correlation and multiple regression. Main Findings Attitudes towards ageing scores were associated with depression scores ($p<.001$).	++

Note. GDS=Geriatric Depression Scale. CES-D=Centre for Epidemiologic Studies Depression Scale. AAQ=Attitudes towards Ageing Questionnaire. MADRS=Montgomery-Asberg Depression Rating Scale. AAQ-SF=Attitudes towards Ageing Questionnaire Short Form. PGC=Philadelphia Geriatric Centre. OPS=Older People Scale. AP=appearance and physical characteristics. PC=psychological and cognitive characteristics. IR=interpersonal relations and social participation. WE=work and economic safety. SDS=Self-Rating Depression Scale. HADS= Hospital Anxiety and Depression Scale. Quality rating: Strong (++), Moderate (+), Weak (0).

Table 1.2

Quality of Studies

Studies	Selection bias	Suitability of outcome measures for older adults	Reliability and validity of depression measure	Reliability and validity of attitudes towards ageing measure	Variables that confound results	Analysis	Missing data
Bai <i>et al.</i> , (2016)	Moderate	Strong	Strong	Moderate	Strong	Strong	Moderate
Bryant <i>et al.</i> , (2012)	Moderate	Moderate	Strong	Strong	Strong	Strong	Strong
Chachamovich <i>et al.</i> , (2008)	Moderate	Strong	Moderate	Moderate	Strong	Strong	Weak
Coleman <i>et al.</i> , (1993)	Moderate	Moderate	Weak	Weak	Moderate	Moderate	Weak
Kalfoss <i>et al.</i> , (2010)	Strong	Strong	Strong	Strong	Moderate	Strong	Strong
Lai and Tong (2012)	Moderate	Moderate	Moderate	Weak	Strong	Strong	Not applicable
Laidlaw <i>et al.</i> , (2018)	Strong	Strong	Moderate	Moderate	Moderate	Moderate	Moderate
Law <i>et al.</i> , (2010)	Moderate	Strong	Moderate	Moderate	Strong	Strong	Weak
Lu <i>et al.</i> , (2010)	Moderate	Moderate	Strong	Strong	Strong	Strong	Not applicable

Lucas-Carrasco <i>et al.</i> , (2013)	Moderate	Strong	Moderate	Strong	Weak	Strong	Moderate
Luchesi <i>et al.</i> , (2016)	Moderate	Moderate	Strong	Strong	Moderate	Strong	Strong
Moor <i>et al.</i> , (2006)	Moderate	Moderate	Strong	Moderate	Strong	Strong	Strong
Shenkin, Laidlaw <i>et al.</i> , (2014)	Strong	Moderate	Moderate	Strong	Strong	Strong	Strong

Heterogeneity of Studies

The studies appeared to be heterogeneous as they were conducted with different populations, in different cultures, and used various types of measures, designs, and analyses.

Data Analysis

Due to the heterogeneity of studies, a meta-analysis was not carried out. A narrative synthesis was used to describe and summarise the data generated from the different studies. The author referred to the checklist which has been developed to guide authors when reporting on observational studies in a review (Stroup, 2000) and the Cochrane guidelines for carrying out a narrative synthesis (Ryan, 2013). In order to make sure the narrative review was transparent and systematic, the framework for conducting a narrative synthesis was utilised when relevant (Popay et al., 2006). In keeping with this framework, the theory underlying this review was considered, a synthesis of studies was conducted, relationships within and between studies were explored, and conclusions were made with reference to the robustness of the synthesis.

Study Details

Thirteen studies were included in the review to synthesise the research investigating depression and attitudes towards ageing among older adults. Each study was read and summarised to extract relevant details.

Participant characteristics. The mean age of participants ranged from 62.9 (Moor et al., 2006) to 81.6 (Coleman et al., 1993). Twelve of the studies used participants from community populations (Coleman et al., 1993; Moor et al., 2006; Chachamovich et al., 2008; Lu et al., 2010; Kalfoss et al., 2010; Bryant et al., 2012; Lai and Tong, 2012; Lucas-Carrasco et al., 2013; Shenkin, Laidlaw et al., 2014; Bai et al., 2016; Luchesi et al., 2016; Laidlaw et al., 2018) and one study used a community and psychiatric population (Law et

al., 2010). Sample sizes ranged from 52 (Law et al., 2010) to 4316 (Chachamovich et al., 2008). Overall, when combining sample sizes among studies included, there were 11,277 participants in total. Participants were drawn from various countries across the world including Western and non-Western cultures.

Design. Twelve of the reviewed studies used cross sectional designs (Moor et al., 2006; Chachamovich et al., 2008; Lu et al., 2010; Kalfoss et al., 2010; Law et al., 2010; Bryant et al., 2012; Lai and Tong, 2012; Lucas-Carrasco et al., 2013; Shenkin, Laidlaw et al., 2014; Bai et al., 2016; Luchesi et al., 2016; Laidlaw et al., 2018). The remaining study used a longitudinal design (Coleman et al., 1993).

Measures. This review was interested in the depression and attitudes towards ageing measures. The Geriatric Depression Scale (GDS; Yesavage et al., 1983) was the most frequently used measure for depression (Chachamovich et al., 2008; Kalfoss et al., 2010; Law et al., 2010; Lai and Tong, 2012; Lucas-Carrasco et al., 2013; Bai et al., 2016; Luchesi et al., 2016; Laidlaw et al., 2018). This was the only depression measure used which has been specifically developed with older adults (Yesavage et al., 1983). The Centre for Epidemiologic Studies Depression scale (CES-D; Radloff, 1977) was used by two studies (Lu et al., 2010; Bryant et al., 2012). The remaining studies used the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) (Shenkin, Laidlaw et al., 2014), the Montgomery-Asberg Depression Rating Scale (MADRS; Montgomery & Asberg, 1979) (Coleman et al., 1993), and the Self-Rating Depression Scale (SDS; Zung, 1965) (Moor et al., 2006). Those studies which reported on the internal consistency of the depression measure (Moor et al., 2006; Lu et al., 2010; Kalfoss et al., 2010; Bryant et al., 2012; Bai et al., 2016; Luchesi et al., 2016) found the measure to be within the acceptable reliability range.

Various measures were used to understand attitudes towards ageing. The AAQ was most commonly used by authors (Chachamovich et al., 2008; Kalfoss et al., 2010; Bryant

et al., 2012; Lucas-Carrasco et al., 2013; Shenkin, Laidlaw et al., 2014; Laidlaw et al., 2018). Two studies used the attitudes towards one's own ageing subscale from the Philadelphia Geriatric Centre (PGC; Lawton, 1975) morale scale (Moor et al., 2006; Law et al., 2010). The remaining measures used were: the Neri Scale (Neri, 1997) to assess attitudes towards the elderly (Luchesi et al., 2016), and the Older People Scale (OPS; Kogan, 1961) (Lu et al., 2010). Three authors developed their own questions to measure attitudes towards ageing (Coleman et al., 1993; Lai and Tong, 2012; Bai et al., 2016). The internal consistency of the attitudes towards ageing measures within the samples were reported for nine of the studies (Moor et al., 2006; Lu et al., 2010; Kalfoss et al., 2010; Bryant et al., 2012; Lai and Tong, 2012; Lucas-Carrasco et al., 2013; Shenkin, Laidlaw et al., 2014; Bai et al., 2016; Luchesi et al., 2016). Four of these studies reported alpha levels between 0.59-0.67, slightly lower than the acceptable range (Tavakol & Dennick, 2011).

Statistical analyses. A range of statistical analyses were used, which appeared to be appropriate for the data. Some analyses allowed testing of the differences between groups, by using t-tests (Chachamovich et al., 2008; Lucas-Carrasco et al., 2013; Laidlaw et al., 2018) or ANCOVAs (Chachamovich et al., 2008; Law et al., 2010). Other analyses sought to establish the linear relationship between variables, using regressions (Coleman et al., 1993; Chachamovich et al., 2008; Lu et al., 2010; Bryant et al., 2012; Lai and Tong, 2012; Shenkin, Laidlaw et al., 2014; Bai et al., 2016; Luchesi et al., 2016) or correlations (Coleman et al., 1993; Moor et al., 2006; Lu et al., 2010; Kalfoss et al., 2010; Law et al., 2010; Lucas-Carrasco et al., 2013; Shenkin, Laidlaw et al., 2014; Bai et al., 2016).

Key findings. The key findings for studies were abstracted to explore the review aims.

Attitudes towards ageing and depression. Those studies which compared older people with depressive symptoms to those without, illustrated that the depressed groups had more negative attitudes towards ageing than those classified as non-depressed

(Chachamovich et al., 2008; Law et al., 2010; Lucas-Carrasco et al., 2013; Laidlaw et al., 2018). Additionally, the studies which were conducted within groups, with the exception of one (Luchesi et al., 2016), found that depression symptoms were significantly related to attitudes towards ageing among older adults. Those studies which used correlational analyses demonstrated that more negative attitudes towards ageing are related to higher depression scores (Moor et al., 2006; Lu et al., 2010; Kalfoss et al., 2010; Bryant et al., 2012; Lai and Tong, 2012; Lucas-Carrasco et al., 2013; Shenkin, Laidlaw et al., 2014; Bai et al., 2016). Studies which utilised regression illustrated that attitudes towards ageing scores predicted depression scores (Coleman et al., 1993; Lu et al., 2010; Bryant et al., 2012; Bai et al., 2016) and depression scores predicted attitudes towards ageing scores (Chachamovich et al., 2008; Shenkin, Laidlaw et al., 2014). Coleman and colleagues study (1993), evidenced that negative attitudes towards ageing at baseline predicted depression at follow up, though this study was deemed as weak in quality.

Specific domains of attitudes towards ageing in relation to depression. Overall, seven of the studies which were reviewed assessed multiple domains of attitudes towards ageing, these studies and their main findings can be found in Table 1.3.

Studies which compared those older adults classified as depressed to those classified as not depressed, found significant differences between the two groups on multiple domains of the AAQ (Chachamovich et al., 2008; Laidlaw et al., 2018; Lucas-Carrasco et al., 2013). Scores on the psychological loss domain were found to be the most significantly different between depressed groups and non-depressed groups (Chachamovich et al., 2008; Laidlaw et al., 2018), whereas psychological growth scores were often found to be least significantly related to depression (Chachamovich et al., 2008; Laidlaw et al., 2018). In one comparison study, there was no significant difference in psychological growth scores between the depressed and non-depressed groups (Lucas-Carrasco et al., 2013).

Studies examining the linear relationship between individual domains of attitudes towards ageing measures and depression scores also evidenced significant findings. Using the OPS, Lu and colleagues (2010) found that all domains were significantly related to depression, with work and economic safety achieving the highest significance and interpersonal relations having the lowest significance. Each of the AAQ domains were also found to be related to depressive symptoms (Bryant et al., 2012; Shenkin, Laidlaw, et al., 2014; Chachamovich et al., 2008; Lucas-Carrasco et al., 2013; Kalfoss et al., 2010). Psychosocial loss was found to have the strongest relationship with depression scores in the majority of the studies (Bryant et al., 2012; Chachamovich et al., 2008; Lucas-Carrasco et al., 2013; Shenkin, Laidlaw, et al., 2014), whereas physical change and psychological growth were not found to relate to depression in some studies (Bryant et al., 2012; Lucas-Carrasco et al., 2013; Shenkin, Laidlaw et al., 2014).

Relationships within studies. No studies reviewed looked at moderators or mediators of the relationship between depression and attitudes towards ageing. Many studies, did however, sought to determine whether attitudes towards ageing were still related to depression even after controlling for other variables. Numerous studies showed that when demographic factors were controlled for, this did not change the significant relationship found between depression and attitudes towards ageing (Bai et al., 2016; Bryant et al., 2012; Chachamovich et al., 2008; Lu et al., 2010). Studies also indicated that depression explained more of the variance in attitudes towards ageing compared to other factors such as physical health (Bai et al., 2016; Lai & Tong 2012) and family variables (Bai et al., 2016).

Relationships between studies. After the key findings were extracted, studies were grouped according to characteristics to explore the range of studies and to ascertain if characteristics were related to results, as can be seen in Figure 1.2. There was only one study that found no significant findings in relation to depression and attitudes towards

ageing (Luchesi et al., 2016). The only difference between this study and the others, is it used the Neri scale (Neri, 1997) to measure attitudes towards ageing, and it used solely carers as participants. Therefore, either of these factors could relate to the non-significant findings.

Table 1.3

Domains of Attitudes to Ageing Related to Depression

Attitudes towards ageing measure	Study	Analysis	Significant domains (in order of significance)	Non-significant domains
AAQ	Bryant et al., (2012)	Hierarchical regression	PL (beta=0.38**)	PC
			PG (beta=-0.09*)	
	Chachamovich et al., (2008)	Hierarchical regression	PL (beta=-0.595*)	
			PC (beta=-0.479*) PG (beta=-0.270*)	
	Kalfoss et al., (2010)	Correlation	PC (Canadians, $r=-.670^{***}$, Norwegians, $r=-.50^{***}$) PL (Canadians, $r=-.620^{***}$; Norwegians, $r=-.432^{***}$) PG (Canadians, $r=-.374^{***}$, Norwegians, $r=-.305^{***}$)	
	Laidlaw et al., (2018)	T-tests	PL (d=1.36***) PC (d=1.09***) PG (d=0.57***)	
	Lucas-Carrasco et al., (2013)	Correlation	PL (r=.448**) PC (r=-.347**)	
T-tests		PL (t=-5.583***) PC (t=4.732***)	PG	
Shenkin, Laidlaw et al., (2014)	Correlation	PL (r=.48***) PC (r=-.337***) PG (r=-.211***)	PC PG	
	Hierarchical Regression	PL(beta=0.969**)		
OPS	Lu et al., (2009)	Correlation	WE (r=-.39***) AP (r=.38***) PC (r=.37***) IR (r=-.33***)	

Note. AAQ= Attitudes towards Ageing Questionnaire. PL=Psychosocial Loss. PC=Physical Change. PG=Psychological Growth. OPS=Older People Scale. AP=appearance and physical characteristics. PC=psychological and cognitive characteristics. IR=interpersonal relations and social participation. WE=work and economic safety. Boldface is used to illustrate the most significant domain.

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

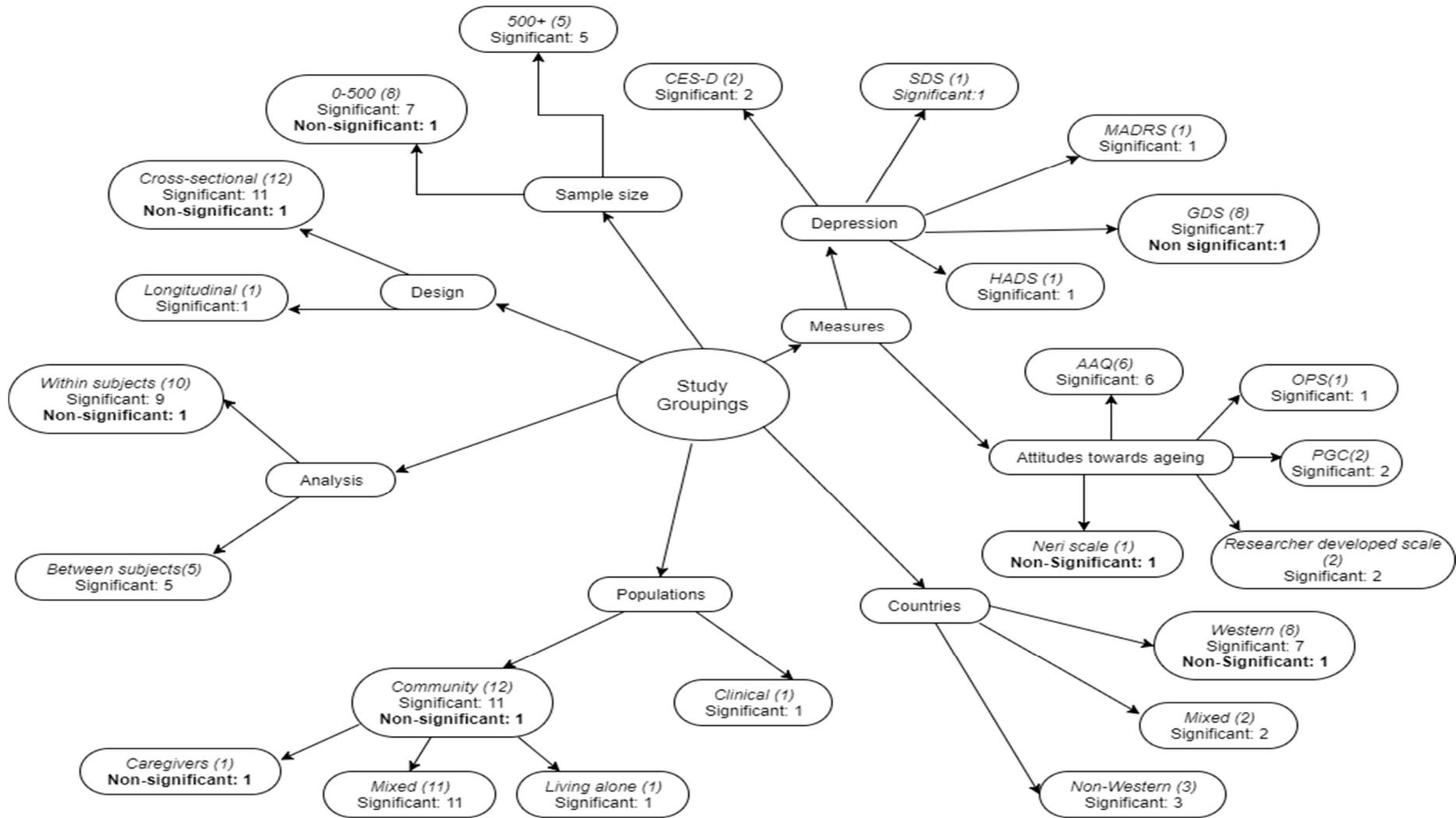


Figure 1.2. Mind Map Illustrating the Different Study Groupings and Results.

Discussion

This review sought to synthesise studies which have explored depression in relation to attitudes towards ageing among adults aged 60 and over. In total, 13 studies were identified and analysed for their content and quality. Results demonstrate compelling evidence that older adults with depression, or with more depressive symptoms, are more likely to have more negative attitudes towards ageing, however numerous limitations need to be considered when drawing conclusions from this review.

Primary Findings

Of the 13 studies reviewed, 12 demonstrated that negative attitudes towards ageing are related to depression. All but one of these studies which found significance were rated as either 'moderate' or 'strong' in methodological quality, therefore allowing conclusions to be made based on findings. The findings indicated that those who score within the threshold for depression have more negative attitudes towards ageing than those who are not classified as depressed. Additionally, they indicated that the higher an older adult scores on depression measures, the more negative attitudes towards ageing they will have. Numerous studies explored the relationship between depression and attitudes towards ageing whilst controlling for confounding variables, such as health and demographic factors. These studies evidenced that even when such factors were controlled or accounted for, the relationship between depression and attitudes towards ageing was still significant. Thus, together, findings indicate that there is a robust relationship between depression and attitudes towards ageing among older adults.

These findings are in line with the model outlined by Laidlaw (2015) which proposes a link between attitudes towards ageing and depressed affect among older adults. Based on the model by Laidlaw (2015) and the findings of this study, which documented that both depression predicts negative attitudes towards ageing, and negative attitudes towards ageing predict depression, it is likely that the relation between attitudes towards

ageing and depression is reciprocal. It is important to note that the only longitudinal study conducted (Coleman et al., 1993) was weak in quality, and therefore conclusions cannot yet be made about the temporal relationship between attitudes towards ageing and depression.

There was only one study which did not find a significant relationship between attitudes towards ageing and depression (Luchesi et al., 2016). There were no major concerns about the quality of this study, however, it is noted that the measure used in this study, the Neri Scale to Assess Attitudes towards the Elderly (Neri, 1997), was not used in any other study and there appears to be limited reporting on the psychometric properties of it. Another reason for the different findings could be that the study used a sample which included only caregivers. As Lucas-Carrasco and colleagues (2013) noted in their study, caregivers may have unique circumstances which could impact on their attitudes towards ageing. It could be that caregivers are comparing their own ageing to the person they are caring for and consequently rating it more favourably. This means that it can only be concluded that depression is related to attitudes towards ageing among older adults who do not identify as carers.

Secondary Findings

The secondary aim of this review was to understand what domains of attitudes towards ageing are most related to depression. A difficulty of addressing this aim is only a handful of the studies examined domains of attitudes, therefore conclusions at this stage are only tentative. Among the studies which used the AAQ, the psychosocial loss domain was most commonly associated with depression and was often the largest contributor to depression compared to the other domains. This finding may be partially explained by the cognitive theory of depression. Beck (1979) postulates that depression is related to negative thoughts about oneself, the world, and the future. It is proposed that negative automatic thoughts of people with depression are most likely to focus on loss (Beck, 1976).

Given that the psychosocial loss domain of the AAQ directly asks questions related to loss, a key cognition in depression (Beck, 1976), this may be why this domain has the strongest relationship to depression.

Methodological Limitations in Reviewed Literature

There are numerous methodological limitations within the reviewed literature which are important to be aware of. One of the studies included in the review (Coleman et al., 1993) was rated as 'weak' in methodological quality, and therefore caution must be taken when interpreting the results of this study. Even among those studies rated as 'moderate' or 'strong' quality overall, methodological weaknesses were apparent. Not all of the studies used validated measures to understand attitudes towards ageing, which weakens the robustness of such studies. Also, the internal consistency of the attitudes towards ageing measures for some studies was just below the acceptable level within the samples. It is also possible that there could be a bias in the dataset of studies as they did not often report on or ascertain the reasons behind missing data. It may be that those people who missed questions out are different to those who did not, and the limited reporting on this means that this cannot be established.

There are also various limitations regarding the design of the studies reviewed. One being that many of the studies were cross-sectional in their design, with only one study utilising a longitudinal design. The study which did employ a longitudinal design (Coleman et al., 1993) was also the study rated as 'weak' in quality. These cross-sectional studies can only provide support that attitudes towards ageing may be related to depression, rather than proving a causal link. Additionally, the studies reviewed predominantly utilised survey data. This means that only people who are interested in the study will participate, which can result in a responder bias.

Limitations are apparent in the populations used in the reviewed studies. The majority of studies assessed depression within a community population, with only one

study drawing upon a psychiatric population (Law et al., 2010). Also, depression was largely measured with self-report questionnaires, which alone only act as a screening tool (Yesavage et al., 1983). Additionally, those within a community setting with symptoms of depression could be different to those within a mental health setting with depression. This makes it difficult to draw conclusions that negative attitudes towards ageing are related to clinical depression and mean that the findings may lack clinical relevance.

Strengths and Limitations of Review

A strength of the review is that it has been able to draw upon all relevant research to date regarding the relationship between depression and attitudes towards ageing among older adults. Also, when examining the quality of studies, a secondary assessor was used to increase reliability of ratings. There are also limitations to note in this review. First, it only included published articles in the database search to reduce the likelihood of poor quality studies being included. Although an attempt was made to access unpublished studies, none were found. Given this, it is possible there is a publication bias in which only those studies which have found significant findings have been published. Another limitation is that the review included studies with great heterogeneity. Due to this, a meta-analysis could not be performed, which may have provided a more rigorous summary of the relationship between depression and attitudes towards ageing.

A limitation of this review is that it included studies from different cultures. Although this allowed the examination of the relationship between depression and attitudes across various populations, a disadvantage of including all cultures is that the populations included in this review were heterogenous. Also, it is important to note that depression is conceptualised differently across different cultures (Karasz, 2005), and the prevalence rate of depression varies across cultures (Kessler and Bromet, 2013). Similarly, although attitudes towards ageing is found to be measurable in multiple cultures (Laidlaw et al., 2007) the prevalence of negative attitudes towards ageing may be different across cultures,

as one study found that Chinese cultures had more negative attitudes towards ageing compared to British cultures (Laidlaw, Wang et al., 2010). Consequently, when drawing conclusions about the relation between depression and attitudes towards ageing, it is important to be aware that the measurement and prevalence of these two constructs may vary across cultures.

Finally, the quality criteria used in this study, although based on validated guidelines, was modified specifically for this study and therefore was not entirely standardised.

Clinical Relevance

As previously noted, given that most of the studies included in this review did not use clinical populations, conclusions made about those who are clinically depressed can only be tentative. Nevertheless, results do indicate that those with depression will be more likely to have negative attitudes towards ageing, and if further research conducted within clinical settings replicates this, it may be beneficial for interventions to be developed accordingly. The recommended NICE (2016) guidance for depression is the use of an evidence based intervention such as Cognitive Behavioural Therapy (CBT). Given that negative attitudes towards ageing are related to life events and cognitive appraisals (Laidlaw, 2015), it may be that targeting these attitudes in CBT is a helpful intervention for depression in later life (Laidlaw, 2010). If future studies conducted in clinical populations replicate findings that psychosocial loss is most related to depression, then treatment may warrant targeting these specific attitudes.

Implications for Future Research

The review has highlighted that research has used various measures to study attitudes towards ageing, some of which were not validated. It would be helpful for future research to be consistent in using only validated measures. It would also be helpful if

future studies use measures which allow examination of multiple domains of attitudes, as this would help address the question regarding which domains of attitudes towards ageing are most related to depression. This review has also highlighted that more research examining the relationship between depression and attitudes towards ageing within a clinical older adult population is warranted. This clinical research could provide further insight into possible clinical interventions for depression. Designs of future research would benefit from being longitudinal in order to establish the direction of the relationship between depression and attitudes towards ageing. Also, given that this review indicated that there was no relationship between depression and attitudes towards ageing among older adult caregivers, future research could focus on further exploring this. Finally, as there is ample evidence suggesting that depression is related to attitudes towards ageing, future research could examine whether a relationship exists with other mental health difficulties, such as late life anxiety.

Conclusion

Several studies have been conducted which have explored depression and attitudes towards ageing among older adults. This is the first review to examine these studies up until this point. To summarise, there is strong evidence to suggest that those adults aged 60 years or over with depression, or with more depressive symptoms, have more negative attitudes towards ageing. Future research needs to make use of longitudinal designs, and to concentrate on using clinical samples, as such studies are lacking. Research which concentrates on the relationship between attitudes towards ageing and depression among clinical samples could have implications for the treatment of clinical depression.

Conflict of Interest

None.

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Chapter Two: Bridging Chapter

As evidenced in the systematic review, numerous studies demonstrate that those older adults with depressive symptoms are more likely to have negative attitudes towards ageing (Bai, Lai, & Guo, 2016; Bryant et al., 2012; Chachamovich, Fleck, Laidlaw, & Power, 2008; Coleman, Aubin, Robinson, Ivani-Chalian, & Briggs, 1993; Kalfoss, Low, & Molzahn, 2010; Lai & Tong, 2012; Laidlaw, Kishita, Shenkin, & Power, 2018; Law, Laidlaw, & Peck, 2010; Lu, Kao, & Hsieh, 2009; Lucas-Carrasco et al., 2013; Moor, Zimprich, Schmitt, & Kliegel, 2006; Shenkin, Laidlaw, et al., 2014).

Depression has been the most commonly explored mental health problem in relation to attitudes towards ageing among older adults, and more research is needed on late life anxiety and attitudes towards ageing. Such a relationship would be plausible given the established link between depression and attitudes towards ageing among older adults (Chachamovich et al., 2008), and that anxiety is highly co-morbid with depression among adults (Brown, Campbell, & Lehman, 2001; Kessler et al., 2015) and older adults (Wolitzky-Taylor, Castriotta, & Lenze, 2010). It is argued that the co-morbidity between anxiety and depression is because they share similar biological and psychosocial risk factors (Barlow, Allen, & Choate, 2016), making the two disorders very similar (Barlow, 2000). Common risk factors for depression and anxiety include: genetics (Myers et al., 2014), negative life events (Hankin, Abramson, & Miller, 2004), and poverty (Spence, Najman, Bor, O'Callaghan, & Williams, 2002). Anxiety and depression are also found to have similar clinical features. For example, cognitive distortions such as 'catastrophising' are associated with both anxiety and depression (Martin & Dahlen, 2005), and rumination is found to be a transdiagnostic feature of both presentations (McLaughlin & Nolen-Hoeksema, 2011). Given that anxiety and depression appear to share causal mechanisms and processes, if depression is related to more negative attitudes towards ageing among older adults, it is possible that anxiety could also be related to attitudes towards ageing and is worthy of further investigation.

This possible link between anxiety and attitudes towards ageing among older adults is supported in the gerontological literature. Laidlaw's (2015) model, as previously explained, proposes a relationship between negative attitudes towards ageing and negative affect among older adults. An example of how this model may relate to anxiety specifically is as follows. An older adult could experience an adverse event, such as having a fall, which may align with a covert internalised negative age stereotype, such as older people are 'frail' (Lovell, 2006). This person could attribute the fall to their age and predict that as they are older they will continue to have falls. This could heighten the person's anxiety as fears of falling have been shown to relate to high anxiety levels (Painter et al., 2012). They may also change their behaviour by going out less often, as concerns about falls are related to mobility restrictions (Delbaere, Crombez, van Haastregt, & Vlaeyen, 2009). Such reduced activity causes muscles to weaken (Goodpaster et al., 2006). The heightened anxiety, reduced activity, and decreased muscle strength could be interpreted as a part of ageing and strengthen the person's negative attitudes about ageing, thus a negative cycle exists in which negative attitudes towards ageing and anxiety are maintained.

In addition to a relationship between anxiety and attitudes towards ageing being supported by Laidlaw's model (2015), there is also empirical research to support such a link. Bryant and colleagues (2012) found that attitudes towards ageing, measured with the Attitudes towards Ageing Questionnaire (AAQ; Laidlaw, Power, & Schmidt, 2007), were related to anxiety symptoms among older adults. Other academics have also evidenced that older people with more anxiety symptoms have more negative attitudes towards ageing (Laidlaw et al., 2018; Freeman et al., 2016; Shenkin, Laidlaw, et al., 2014; Shenkin, Watson, Laidlaw, Starr, & Deary, 2014). These studies suggest that symptoms of anxiety, like depression, are linked to having more negative attitudes towards ageing among older adults.

A limitation of the research on anxiety and attitudes towards ageing, which has been generated up until this point, is that it has only been investigated within a community population. This limits the conclusions that can be drawn about older adults accessing mental health services who present with anxiety. It has been commented that future research on attitudes towards ageing needs to focus on similarities and differences between clinical and non-clinical groups (Samus, 2014). Research which sets out to compare clinical and non-clinical groups of older adults, would contribute to a clearer understanding of the clinical relevance of attitudes towards ageing among older adults. Due to this, the author seeks to determine whether older adults with clinical anxiety recruited from mental health services have more negative attitudes towards ageing than those drawn from a non-clinical older adult population.

When exploring attitudes towards ageing, it would also be helpful to explore Quality of Life (QOL). Research has documented that overall, older adults experience a good QOL (Qadri et al., 2013). However, there is evidence that those with mental health difficulties experience a poorer QOL (Chachamovich et al., 2008; Kwan, Ali, & Deuri, 2016). A systematic review which summarised the studies on depression and QOL among older adults, indicated that there is substantial evidence for a negative relationship between depression and global QOL (Sivertsen, Bjørkløf, Engedal, Selbæk, & Helvik, 2015).

Although the relationship between depression and QOL seems to have been established, less research has been conducted on anxiety and QOL among older adults. There is, however, emerging evidence which would suggest that older adults with anxiety will have a poorer QOL. When older adults have more negative attitudes towards ageing, which is found to be related to anxiety (Laidlaw et al., 2018) they report a poorer QOL (Low, Molzahn, & Schopflocher, 2013). Also, Generalized Anxiety Disorder (GAD) has been related to a poorer QOL among older adults (Bourland, Stanley, & Snyder, 2000; Canuto et al, 2018; Wetherell et al., 2004). No studies, yet, have compared QOL among

older adults accessing mental health services with any type of anxiety presentation, compared to a non-clinical population. For this reason, this study intends to identify whether older adults in clinical settings presenting with late life anxiety differ to those in a community population on domains of QOL. As QOL and attitudes towards ageing have also been related to many factors other than anxiety (Chachamovich et al., 2008; Low et al., 2013; Sivertsen et al., 2013), the study will examine the unique contribution of clinical anxiety when these other factors are accounted for.

Finally, it has been acknowledged that there are no current cut off scores for the AAQ, which weakens the use of the scale (Shenkin, Laidlaw, et al., 2014). For this reason, the author also seeks to use the data on the two groups regarding attitudes towards ageing to explore what scores on the AAQ are indicative of whether someone is from the clinically anxious sample or not, using the Receiver Operating Characteristic (ROC) methodology.

To summarise, this study intends to investigate whether older adults within mental health services who are experiencing clinical anxiety, differ on measures of QOL and attitudes towards ageing compared to older adults within a non-clinical population. Furthermore, the study seeks to understand whether having clinical anxiety is an independent predictor of attitudes towards ageing and quality of life once other variables are accounted for. Finally, it will explore whether the AAQ can be used to distinguish a clinical group of older adults with anxiety from a non-clinical group of older adults. This study will bridge the gaps in the literature and could have clinical implications for the assessment and treatment of late life anxiety among older adults.

Chapter Three: Empirical Research Paper

This chapter consists of the empirical research paper which was prepared for ‘Clinical Gerontologist’. The journal guidelines (see Appendix E) state for the maximum word count to be 5000 words (excluding abstract, figures, tables, and references). The empirical paper word count is 4999 words. The overall word count for this chapter is 7561 words.

**Attitudes towards Ageing and Quality of Life Among Older Adults with
Late Life Anxiety**

Hope Westgate¹

Department of Clinical Psychology, University of East Anglia, UK

Dr Adrian Leddy

Department of Clinical Psychology, University of East Anglia, UK

Professor Kenneth Laidlaw

Department of Clinical Psychology, University of East Anglia, UK

¹*Corresponding author. Email:h.westgate@nhs.net*

Abstract

Objectives: Research suggests that older adults with anxiety have negative attitudes towards ageing and an impaired quality of life; however, few studies have examined this within a clinical setting. This study aimed to examine these variables among anxious older adults accessing mental health services compared to older adults from a non-clinical setting.

Methods: A between groups design was utilised to compare 36 older adults with clinical anxiety to 73 older adults from a non-clinical sample.

Results: Older adults with clinical anxiety reported more negative attitudes towards ageing and a poorer quality of life than the non-clinical sample. When factors such as depression and physical health were accounted for, clinical anxiety did not uniquely contribute towards attitudes towards ageing and quality of life. The Attitudes towards Ageing Questionnaire (AAQ) was able to discriminate the clinical group of older adults from the non-clinical group.

Conclusions and Clinical Implications: Older adults with late life anxiety are more likely to have negative attitudes towards ageing and a poorer quality of life than a non-clinical population. These findings indicate that it is vital that attitudes towards ageing and quality of life are assessed and addressed in older adult mental health settings.

Keywords: Attitudes Towards Ageing, Quality of life, Older Adults, Anxiety

Introduction

Worldwide, countries are experiencing an ageing population, and therefore ongoing considerations should be made in relation to the physical and mental wellbeing of older adults (United Nations, 2001; Yasamy, Dua, Harper, & Saxena, 2013). Research shows that rates of mental health problems fall as people age (Canuto et al., 2018; Reynolds, Pietrzak, El-Gabalawy, Mackenzie, & Sareen, 2015), although they appear to rise again once people reach the age of 75 (Jokela, Batty, & Kivimäki, 2013). Depression and anxiety are the most common mental health difficulties among older adults (Andreas et al., 2017; Byers et al., 2010; Volkert, Schulz, Harter, Włodarczyk, & Andreas, 2013). Consequences of such difficulties include increased disability, utilisation of healthcare services, and suicidal ideation (Meeks, Vahia, Lavretsky, Kulkarni, & Jeste, 2011).

When seeking to understand mental health problems among older adults, it is important that sociocultural factors are considered, such as attitudes towards ageing (Laidlaw, Thompson, & Gallagher-Thompson, 2004). According to Levy (2009), a negative stereotype of ageing exists in society, which is internalised when people are young and becomes a self-stereotype as people age. This is concerning given that when older adults hold negative views about ageing, this negatively impacts on wellbeing (Levy, Slade, Kunkel, & Kasl, 2002; Robertson, 2017).

In line with Levy's (2009) proposals, research has shown that younger adults do hold negative attitudes about older adults (Luo et al., 2013). However, when older adults themselves are asked about ageing, findings are not consistent (Sarkisian, Prohaska, Wong, Hirsch, & Mangione, 2005), and research suggests that the majority of older adults hold positive attitudes towards ageing (Bryant et al., 2012). One exception to this is when they have symptoms of depression and anxiety; these older adults are reported to have negative attitudes towards ageing (Bryant et al., 2012). This disparity suggests that mental health is important to explore when investigating attitudes towards ageing.

Laidlaw (2015) has developed a model outlining the relationship between negative attitudes towards ageing and negative affect among older adults. According to his model, a negative age-related event in later life activates the internalised negative stereotype of ageing via the interacting systems of cognition, affect, behaviour, and physicality. Once the negative stereotype of ageing is activated, a vicious cycle exists in which negative age-related cognitions can impact on negative affect, and vice versa (Laidlaw, 2015). The Attitudes towards Ageing Questionnaire (AAQ; Laidlaw, Power, & Schmidt, 2007) has been developed to assess attitudes towards ageing among older adults. Consistent with Laidlaw's (2015) model, studies have found that among older adults, more negative attitudes towards ageing are related to symptoms of depression (Bryant et al., 2012; Kalfoss, Low, & Molzahn, 2010; Shenkin, Laidlaw, et al., 2014).

Despite the growing evidence for a relationship between depression and attitudes towards ageing among older adults, there is a paucity of research on attitudes towards ageing among older adults with anxiety. This warrants investigation given that anxiety in later life has been associated with negative implications; it is found to be a risk factor for disability among older woman (Brenes et al., 2005), mortality among older men (van Hout et al., 2004) and is linked to poorer cognitive performance in domains such as memory and executive functioning (Yochim, Mueller, & Segal, 2013).

The research conducted in this area, so far, has indicated that negative attitudes towards ageing are related to higher scores on measures of anxiety (Bryant et al., 2012; Freeman et al., 2016; Laidlaw, Kishita, Shenkin, & Power, 2018; Shenkin, Laidlaw et al., 2014). A limitation of this research is that it has only been conducted in non-clinical populations, and therefore findings have little clinical relevance. Additionally, many of these studies (Freeman et al., 2016; Laidlaw et al., 2018; Shenkin, Laidlaw et al., 2014) have used the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) which can be poor in detecting anxiety among older adults (Davies, Burn, McKenzie,

Brothwell, & Wattis, 1993; Dennis, Boddington, & Funnell, 2007). Given these gaps in the literature, this study seeks to explore attitudes towards ageing among a clinically anxious sample of older adults accessing mental health services, compared to a non-clinical sample.

When examining attitudes towards ageing, Quality of Life (QOL) will also be explored. Quality of life is multidimensional (Walker, 2005), and this study views QOL as relating to physical health, psychological health, social relationships, and the environment (The WHOQOL group, 1998). It is important to examine QOL when examining attitudes towards ageing as they are overlapping concepts (Chachamovich et al., 2008) which correlate with each other (Low, Molzahn, & Schopflocher, 2013). This means that if anxiety is related to attitudes towards ageing, it is also likely that QOL will be. Additionally, both QOL and attitudes towards ageing have been highlighted as being important to assess in older adult mental health settings (Laidlaw et al., 2007). Illustrating the importance of examining QOL concurrently with attitudes towards ageing in relation to mood, one study found that as depression levels increased, attitudes towards ageing and QOL become more negative (Chachamovich et al., 2008).

Another reason for examining quality of life in this study, is that little research has investigated it among anxious older adults. One study which has, found that those with Generalized Anxiety Disorder (GAD) had a poorer QOL compared to those without mental health difficulties (Bourland et al., 2000). This finding suggests that the investigation of QOL among older adults with clinical anxiety is worthy of further investigation.

Aims and Hypotheses

The primary aim of this study is to compare clinically anxious older adults accessing mental health services to a non-clinical sample of older adults on attitudes towards ageing and QOL. In line with theory (Laidlaw, 2015) and research conducted in non-clinical settings (Chachamovich et al., 2008; Laidlaw et al., 2018), it is hypothesised that clinically anxious older adults will have more negative attitudes towards ageing

(hypothesis 1) and a poorer QOL than the non-clinical sample (hypothesis 2). Given that various factors, such as depression and health (Chachamovich et al., 2008; Kalfoss et al., 2010), are already known to predict attitudes towards ageing and QOL, the study further aims to understand whether having clinical anxiety independently contributes to attitudes towards ageing and QOL when other known variables are accounted for (research question 1). Finally, as there are no cut off scores for the AAQ (Shenkin, Laidlaw, et al., 2014), the study will determine what scores on this measure can identify whether an older person is from the clinical or non-clinical group (research question 2). No study appears to have investigated such questions to date, and the results could be used to inform clinical interventions for late life anxiety.

Methodology

Design

A between groups cross-sectional design was utilised to compare a clinical sample of older adults to a non-clinical sample on quantitative measures.

Participants

Effect sizes from previous similar studies (Chachamovich, Fleck, Laidlaw, & Power, 2008; Raeburn, 2013), were used to calculate the sample size needed for the current study. Given a medium-large effect size, power of .8, and a p value of .05, G Power (Erdfelder, Faul, & Buchner, 1996) calculated that 26-63 people would be needed in each group to explore differences between groups. The author intended to use an ROC curve, which requires at least 100 people overall (Metz, 1978), and multiple regression, where the sample size required is: $50+8m$, where m is the number of independent variables (Green, 1991).

To recruit the clinical sample, adults aged 60 or over who were accessing mental health services and determined by clinicians to have anxious presentations were invited to

take part in the study. Participants were not eligible to take part in the study if they had a diagnosis of dementia, were not deemed to have capacity or could not read. Participants were excluded from the final sample if they scored below the determined threshold on the Geriatric Anxiety Inventory (GAI; Pachana, Bryne, Siddle, & Koloski, 2007) to ensure participants had clinical levels of anxiety at the time of filling in questionnaires. Overall, the final clinical sample included 36 older adults (12 male, 24 female) aged between 60 and 92 ($M=73.50$, $SD= 8.02$).

The non-clinical sample were taken from a previous study (Laidlaw et al., 2007) which collected data from a community sample of older adults. The data from the Edinburgh sample ($n=116$) from this study were provided to the author and participants were excluded if they had over 20% of missing data. Information regarding anxiety specifically was not available for this sample, however participants were excluded if they reported that they had a psychiatric condition or if they scored within the clinical threshold for depression, to reduce the likelihood of this sample having clinical anxiety. The final non-clinical sample consisted of 73 older adults (22 male, 51 female) aged between 60 and 95 ($M= 77.21$, $SD=10.55$).

Measures

Demographics. Demographic information was collected from the clinical sample on: age, gender, ethnicity, and current physical health conditions. This information was also collected from the non-clinical sample, with the exception of ethnicity.

Attitudes towards Ageing Questionnaire (AAQ; Laidlaw et al., 2007). The AAQ is a 24-item self-report measure which has three domains to assess older adults perception of ageing: Psychological Growth (PG), Psychosocial Loss (PL), and Physical Change (PC) (Laidlaw et al., 2007). The range of scores for each domain are 8-40. Higher scores on the PL domain and lower scores on the PC and PG domains represent more

negative attitudes towards ageing. The questionnaire is found to be reliable and valid (Laidlaw et al., 2007). It was used for both the clinical and non-clinical sample.

Geriatric Anxiety Inventory (GAI; Pachana, Byrne, Siddle, & Koloski, 2007).

The GAI is a 20-item measure to assess clinical anxiety in older adults. The range of scores is 0-20 and the measure has acceptable reliability and validity within an older adult population (Pachana et al., 2007). A score of ≥ 3 on the GAI was used to indicate clinical anxiety, and those who scored below this were excluded from the clinical sample. This threshold was used as it has been evidenced to be an appropriate cut off score for determining any type of anxiety disorder among an older adult population with physical health conditions (Cheung, Patrick, Sullivan, & Cooray, 2012), and the clinical sample were largely recruited from services in which older adults have complex physical and psychological difficulties. This measure was used for the clinical sample only.

Geriatric Depression Scale (GDS-15; Yesavage & Sheikh, 1986). The GDS is a 30-item measure to assess depression within an older adult population. The questionnaire is found to be reliable and valid among older adults (Yesavage, Brink, Rose, & Lum, 1983). The short form of this, the GDS-15, was administered within the clinical sample as it takes less time and is evidenced to be a reliable and valid measure (Yesavage & Sheikh, 1986). The range of scores are 0-15, with a score of 5 and above indicative of depression (Yesavage & Sheikh, 1986). The GDS-30 was originally used within the non-clinical sample, but scores were converted to match the GDS-15.

World Health Organization Quality of Life Scale Short Form (WHOQOL-BREF; The WHOQOL Group, 1998). The WHOQOL-BREF is a 26-item measure to assess QOL and measures four domains (physical health, psychological health, social relationships, and environment). Raw scores are converted and the range of scores on each domain are 0-100, with higher scores representing a better QOL. The measure also has two questions regarding health satisfaction and overall QOL. The WHOQOL-BREF is found to

be a reliable and valid measure (The WHOQOL Group, 1998) and was used within the clinical and non-clinical sample.

Procedure

Mental health services in the East Anglia region were contacted about recruiting for the study. Overall, 250 study packs were distributed between 11 mental health services within Cambridge and Peterborough NHS Foundation Trust (CPFT) and Norfolk and Suffolk NHS Foundation Trust (NSFT). Teams were provided with the study criteria and clinicians screened clients who met this. Eligible participants were provided with an information sheet; this was either attached to appointment letters or was directly provided. Participants who displayed an interest in the study were given a study pack (containing the information sheet, demographic questions, consent forms, and questionnaires) by a clinician, which they completed in their own time and either returned to the service or returned in the post. Alternatively, participants could complete the study online.

Ethical Issues

Prior to recruitment, ethical approval was granted by the South Birmingham Ethics Committee and local research teams. Participants were required to provide written consent and had the right to withdraw up to the point in which data was analysed. Participant's information was kept confidential and responses were not shared with their clinical team or their General Practitioner (GP). Data was stored in line with the Data Protection Act (1998). Participants were made aware that they were not obliged to take part and were given numbers to contact should any distress have arisen from filling in the questionnaires.

Analyses

Data was analysed using SPSS (version 23.0). Missing data was assessed with Little's (1988) Missing Completely at Random (MCAR) test. Descriptive statistics were used to summarise data and assumptions of parametric statistics (Field, 2013) were

checked. Inferential statistics were used to explore any significant differences between the two groups on variables not of primary interest to the study. A series of *t*-tests were conducted to address the research hypotheses, and statistical significance and effect sizes were reported. Alpha levels were adjusted according to the Holm-Bonferroni method to control for multiple comparisons.

Next, the research questions were addressed. Multiple hierarchical regression analyses were conducted, after checking the assumptions, to assess the unique contribution of clinical anxiety to attitudes towards ageing and QOL scores. Variables which have been evidenced to relate to attitudes towards ageing and QOL (Bryant et al., 2012; Chachamovich et al., 2008; Low et al., 2013; Shenkin, Laidlaw, et al., 2014) were entered into models before anxiety was entered. For each regression model, demographics (age and gender) were entered in Step 1, physical health variables (number of reported physical health problems and subjective satisfaction with health scores) in Step 2, depression scores in Step 3, and whether an older adult belonged to the anxious group of older adults or not in Step 4. If the change in R^2 is significant in the final step, then anxiety is a unique predictor of attitudes towards ageing and QOL. Finally, a Receiver Operating Characteristic (ROC) curve was used to assess cut off scores for the AAQ.

Results

Little's (1988) Missing Completely at Random test (MCAR) was not significant ($\chi^2 = 1163.90$, $df = 1127$, $p = .21$) indicating data was missing at random; subsequently missing data was addressed by using item-mean imputation. Data largely met the assumptions for statistical testing. The homogeneity of variance assumption was violated for three domains of the WHOQOL-BREF, the GDS-15, and two domains of the AAQ, and therefore equal variances could not be assumed for these variables.

Sample Characteristics

The characteristics of each sample is outlined in Table 3.1. Either *t*-tests, Mann-Whitney U tests or Chi-square were used to ascertain significant differences between groups. This indicated differences between the groups on: age, depression scores, number of reported physical health problems, self-rated QOL scores and subjective satisfaction with health scores.

Table 3.1

Characteristics of the Clinical and Non-Clinical Sample

Characteristics	Clinical group (n=36) <i>N (%) or Mean (SD)</i>	Non-clinical group (n=73) <i>N (%) or Mean (SD)</i>	<i>t or χ^2 or U</i> value	<i>p</i> value
Age	73.50 (8.02)	77.21 (10.55)		
Younger old (<75)	21 (58.33)	29 (39.73)		
Older old (75+)	15 (41.67)	44 (60.27)		
			-2.03	.05
Gender				
Male	12 (33.33)	22 (30.14)		
Female	24 (66.67)	51 (69.86)		
			.12	.74
Ethnicity				
White/Caucasian	36 (100)	Not available		
Number of reported physical health conditions				
0	6 (16.67)	32 (43.84)		
1	13 (36.11)	23 (31.51)		
2	8 (22.22)	15 (20.55)		
3+	9 (25)	3 (4.11)		
			817	.001
WHOQOL-BREF				
Self-rated quality of life	3.24 (.97) †	4.25 (.62)	498	<.001
Self-rated satisfaction with health	2.69 (1.05) †	3.92 (.89)	508	<.001
GDS-15	9.07 (3.76) †	1.84 (1.39)	10.09	<.001
GAI	15.03 (4.53) †	Not available		

Note. † Missing data.

Main Results

Hypothesis 1: The clinically anxious group of older adults will have more negative attitudes towards ageing compared to the non-clinical group of older adults.

The groups were compared on three domains of the AAQ using independent *t*-tests, as indicated in Table 3.2. Results indicated that scores on the PL domain were significantly higher for the clinical group compared to the non-clinical group, and a large effect size was

found ($d=1.45$). For the PC domain, the clinical group had significantly lower scores compared to the non-clinical group and a medium effect size was found ($d=.59$). The PG scores were lower in the clinical group compared to the non-clinical group, this difference did not reach statistical significance, but a small effect size was found ($d=.33$).

Table 3.2

Comparison of Mean Scores between the Clinical and Non-Clinical Group on the AAQ

AAQ domains	Clinical group mean (SD)	Non-clinical group mean (SD)	<i>t</i> value (df)	<i>p</i> value	Holm-Bonferroni correction	Effect size (Cohen's <i>d</i>)
Psychosocial loss	23.21 (6.43)	16.14 (3.94)	6.06 (48.34)‡	<.001	.017	1.45
Physical change	22.45 (6.24)	25.59 (4.78) †	-2.65 (56.13)‡	.01	.025	.59
Psychological growth	25.09 (4.78)	26.63 (4.73)	-1.58 (105)	.12	.05	.33

Note. † Missing data ‡ Welch's *t*-test. Higher scores on the psychosocial loss domain and lower scores on the physical change and psychological growth domain indicate more negative attitudes towards ageing.

Hypothesis 2: The clinically anxious group of older adults will score significantly lower on all domains of the WHOQOL-BREF compared to the non-clinical group of older adults.

The groups were also compared on the four domains of the WHOQOL-BREF using independent *t*-tests, as indicated in Table 3.3. It was found that the clinical group scored significantly lower on all domains of QOL compared to the non-clinical group. Large effect sizes were found for the physical health domain ($d=1.08$), the psychological health domain ($d=2.30$), and the social relationships domain ($d=.91$). A medium effect size was found for the environment domain ($d=.71$).

Table 3.3

Differences between the Clinical and Non-Clinical Group on Domains of the WHOQOL-BREF

WHOQOL-BREF domains	Clinical group mean (SD)	Non-clinical group mean (SD)	<i>t</i> value	<i>p</i> value	Holm-Bonferroni correction	Effect size (Cohen's <i>d</i>)
Physical health	50.28 (24.62)	71.71 (16.43)	-4.73 ‡ (50.88)	<.001	.017	1.08
Psychological health	40.64 (16.43)	75.59 (12.70)	-9.87 ‡ (50.45)	<.001	.013	2.30
Social relationships	59.39 (19.21)	73.39 (13.16) †	-3.94 ‡ (51.96)	<.001	.025	.91
Environment	65.50 (18.59)	76.30 (13.27)	-3.49 (107)	.001	.05	.71

Note. † Missing data apparent ‡ Welch's *t*-test. Higher scores indicate a better quality of life.

Research Question 1: Does having clinical anxiety make a unique contribution to attitudes towards ageing and quality of life when other variables are accounted for?

Tables 3.4 and 3.5 illustrate the contribution of demographic factors, physical health factors, depression severity, and clinical anxiety on attitudes towards ageing and QOL. As the R^2 change was not significant in the final step, apart from for the psychological health domain, this indicates that belonging to the clinically anxious group of older adults did not uniquely contribute to attitudes towards ageing and QOL scores.

The final models for each AAQ domain and WHOQOL-BREF domain were all significant ($p < .05$). For the attitudes towards ageing domains, the variables combined explained 57%, 24%, and 20% of the variance in PL, PC, and PG scores respectively. For the QOL domains, the variables explained 70%, 71%, 15%, and 40% of the variance in physical health, psychological health, social relationships, and environment scores respectively.

Table 3.4

Hierarchical Multiple Regression Analysis of Attitudes Towards Ageing Scores

	Psychosocial Loss		Physical Change		Psychological Growth	
	R^2 change	Adjusted R^2	R^2 change	Adjusted R^2	R^2 change	Adjusted R^2
Model 1 (Demographics)	.02	<.01	.04	.03	.06*	.04
Model 2 (Demographics, physical health)	.31**	.30	.21**	.22	.03	.05
Model 3 (Demographics, physical health, depression)	.27**	.58	.03*	.25	.10*	.19
Model 4 (Demographics, physical health, depression, anxiety group)	<.01	.57	<.01	.24	.02	.20

Note. Demographics=gender, age. Physical health=number of reported health problems, subjective satisfaction with health. For gender, 1=male, 2=female. For anxiety group, 1=anxious group, 2=non-clinical group. * $p < .05$ ** $p < .01$.

Table 3.5

Hierarchical Multiple Regression Analysis of Quality of Life Scores

	Physical health		Psychological health		Social relationships		Environment	
	R^2 change	Adjusted R^2	R^2 change	Adjusted R^2	R^2 change	Adjusted R^2	R^2 change	Adjusted R^2
Model 1 (Demographics)	.05	.03	<.01	.02	<.01	.02	.06*	.04
Model 2 (Demographics, physical health)	.60**	.64	.32**	.29	.10**	.07	.28**	.32
Model 3 (Demographics, physical health, depression)	.05**	.70	.39**	.69	.09**	.16	.08**	.39
Model 4 (Demographics, physical health, depression, anxiety group)	.01	.70	.02*	.71	.01	.15	.02	.40

Note. Demographics=gender, age. Physical health=number of reported health problems, subjective satisfaction with health. For gender, 1=male, 2=female. For anxiety group, 1=anxious group, 2=non-clinical group. * $p < .05$ ** $p < .01$.

Research question 2: What score on each subscale of the AAQ can discriminate the clinically anxious group from the non-clinical group of older adults?

For the PL domain of the AAQ and the PC domain, the ROC analysis indicated that scores were significantly better than chance at identifying those older adults within the clinically anxious group ($p < .01$). The area under the curve for the PL domain was .82 with sensitivity of 78% and specificity of 70% for a cut off score of ≥ 18.5 . For the PC domain, the area under the curve was .69 with sensitivity of 64% and specificity of 62% for a cut off score of ≤ 23.50 . For the PG domain, the curve was not accurate ($AUC = .60$, $p = .10$) therefore optimal cut off scores for this domain were not obtained. Figure 3.1 demonstrates the ROC curves for the PL domain and the PC domain of the AAQ.

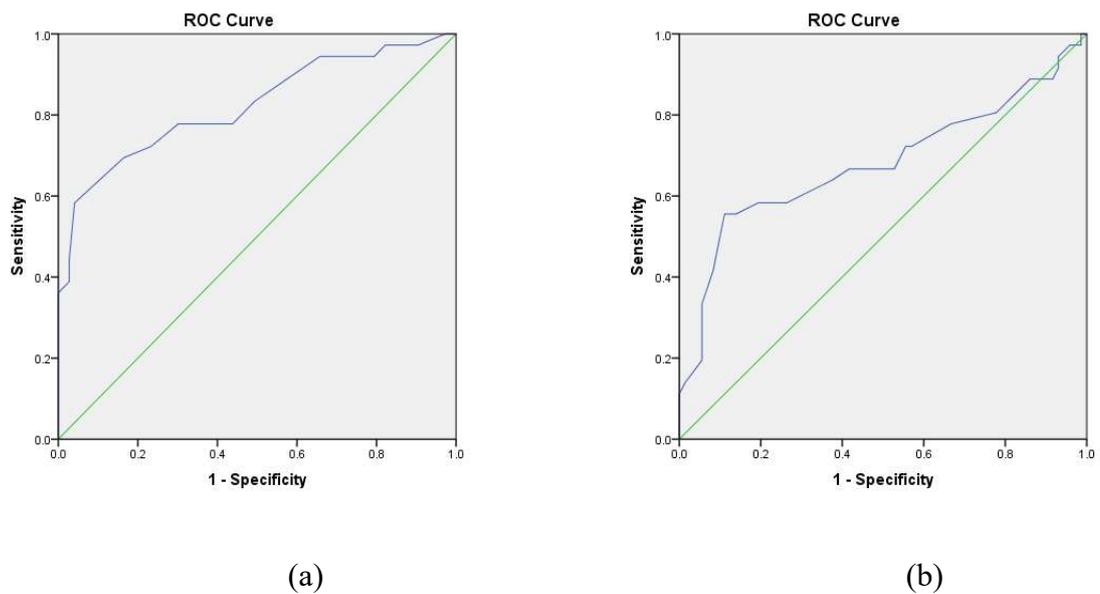


Figure 3.1. ROC curves for the psychosocial loss domain of the AAQ (a) and the physical change domain of the AAQ (b).

Discussion

This study is the first to compare a clinically anxious group of older adults attending mental health services to a non-clinical group on measures of attitudes towards ageing and QOL. The first aim of the study was to determine if attitudes towards ageing differed between the two participant groups. The results indicated that the clinically anxious group of older adults had significantly more negative attitudes towards ageing compared to the non-clinical group. Although, this study is the first to assess such variables within a clinical setting, results are in line with previous research studies which have used the AAQ within non-clinical older adult populations (Bryant et al., 2012; Freeman et al., 2016; Laidlaw et al., 2018; Shenkin, Laidlaw et al., 2014).

Within this study, the PG domain of the AAQ was not found to be significantly different between the two groups; this domain is stipulated to reflect wisdom (Laidlaw, Power, & Schmidt, 2007). This would suggest that attitudes regarding psychological growth are not as influenced by anxiety as much as the other two domains of attitudes towards ageing. Previous studies have also indicated non-significant results for the PG domain in the context of mood (Laidlaw et al., 2018; Lucas-Carrasco, Laidlaw, Gómez-Benito, & Power, 2013). It has been suggested that this domain is distinct and those older adults not in contact with younger generations may not be represented by this domain (Chachamovich et al., 2008). The findings of the current study cannot ascertain the reasons for different results emerging for the PG domain, but this would be worthy of further investigation.

This study also aimed to determine whether the clinically anxious group of older adults had a poorer QOL compared to the non-clinical group. Results indicated that they did report a poor QOL on all domains of the WHOQOL-BREF compared to the non-clinical group. This finding supports previous research which has shown that older adults with GAD have a diminished QOL compared to those without psychiatric difficulties

(Bourland, Stanley, & Snyder, 2000). Furthermore, it expands on this research by suggesting that QOL is impaired among older adults with any type of anxiety.

In previous studies, numerous variables have been evidenced as being related to a poorer QOL and more negative attitudes towards ageing (Bryant et al., 2012; Chachamovich et al., 2008; Low et al., 2013; Shenkin, Laidlaw, et al., 2014). Given this, the current study used hierarchical regression analyses to explore whether having clinical anxiety would contribute to attitudes towards ageing and QOL scores beyond these other variables. Results indicated that once demographics, physical health factors, and depression were accounted for, anxiety did not further contribute to the variance in attitudes towards ageing and QOL scores. Thus, together, results show that older adults with clinical anxiety are more likely to have negative attitudes towards ageing and a poor QOL, but this is not independent of other factors.

Physical health appeared to be important contributing factor, as those older adults who reported more physical health conditions and less satisfaction with health were more likely to have negative attitudes towards ageing and a poorer QOL, which has also been documented in other studies (Kalfoss et al., 2010; Low et al., 2013). Depression was also an important contributor to attitudes towards ageing and QOL, which is also in line with previous research among older adults which shows that as depression levels increase, QOL reduces (Chachamovich et al., 2008), and attitudes towards ageing are more negative (Bryant et al., 2012; Chachamovich et al., 2008).

The finding that depressed affect as well as anxiety may be implicated in attitudes towards ageing, is consistent with the model developed by Laidlaw (2015), which outlines that negative attitudes towards ageing are related to negative affect. Findings may also be understood with reference to the cognitive theory of depression and anxiety. Depression is proposed to be associated with negative thoughts surrounding the self, the past, and the future, and anxiety is related to predictions of threat (Beck, Brown, Steer, Eidelson, &

Riskind, 1987). It may be that when an older adult is in a depressed or anxious state, that their view on ageing, which is proposed to be mood-state dependent (Laidlaw, 2010), is consistent with their negative thinking style.

The final aim of this study, was to explore whether scores on the three domains of the AAQ could distinguish the clinically anxious group from the non-clinical group of older adults. Scores on the PL domain could most accurately distinguish the clinical from the non-clinical group. When a score of ≥ 18.5 on the PL domain was used to classify someone as belonging to the clinically anxious group, 73% of the whole sample were correctly classified. This classification accuracy is only slightly lower than the one obtained for correctly identifying anxiety disorders using the GAI itself (Pachana et al., 2007), demonstrating the utility of this scale within a clinically anxious sample. However, further research is needed before any conclusions about cut off scores can be made.

Of note, is that participants in the non-clinical sample in this study did not complete an anxiety measure. It is possible that some participants included in the final non-clinical sample had elevated anxiety, which could have created an overlap in the groups and weakened results. Also of note, is that participants from the clinical sample in this study were younger than the non-clinical sample. It has been found that QOL improves as people age, however as people reach the older age group (75+) it starts to decline again (Netuveli et al., 2006). Similarly, attitudes towards ageing are found to be more negative as older adults reach the older age category (Freeman et al., 2016). As the non-clinical sample had a greater proportion of older adults who were 75 or over, it may be that their older age influenced their QOL and attitudes towards ageing to be more negative.

Clinical Implications

The assessment and treatment of older adults with clinical anxiety may be informed by the results of this study. The study has provided evidence that older adults in clinical settings with anxiety are likely to have a poorer QOL and more negative attitudes towards

ageing than a non-clinical sample of older adults. Holding negative attitudes towards ageing and perceiving a poor QOL could further contribute to negative affect (Laidlaw, 2015), and it is found to predict mortality (Brown, Thompson, Zack, Arnold, & Barile, 2015; Levy et al., 2002). Given this, it may also be important to directly address attitudes towards ageing and QOL when working with older adults within mental health settings. There are a host of interventions which have successfully been used to improve QOL among older adults, including psychological, physical, and social interventions (Van Malderen, Mets, & Gorus, 2013). Cognitive Behavioural Therapy (CBT) is one of the recommended treatments for anxiety disorders among adults (NICE, 2011), and it has been suggested that negative attitudes towards ageing can be addressed within this, for example by challenging negative age cognitions (Laidlaw, 2010).

Within this study, the clinical sample were more likely to have depression symptoms and reported physical health difficulties. This is consistent with the literature that older adults with anxiety disorders commonly report co-morbidities, such as depression and physical health problems (Wolitzky-Taylor, Castriotta, & Lenze, 2010). Furthermore, the study showed that depression and physical health factors were themselves large contributors of attitudes towards ageing and QOL. Given this, it is important that these potential co-morbidities are also assessed and treated when working with anxious older adults within clinical settings.

Finally, the findings have implications for the use of the AAQ within clinical settings. The study has indicated that scores on the AAQ could reliably distinguish a clinically anxious group of older adults from a non-clinical sample, indicating the value of using this measure within mental health assessments. The AAQ is considered to be useful in measuring the effectiveness of psychiatric interventions (Laidlaw et al., 2007; Laidlaw et al., 2018) and findings from this study support this.

Limitations and Future Research

A strength of this study is that it has addressed the gaps in the literature by comparing older adults with late life anxiety, recruited from mental health settings, on measures of attitudes towards ageing and QOL, to older adults from a non-clinical setting. Consequently, findings have clinical relevance. Nevertheless, the present study also has limitations. The non-clinical sample came from a previous study (Laidlaw et al., 2007), in which measures of anxiety were not used. The lack of an anxiety measure within the non-clinical population is a major limitation of this study. Although people were excluded if they stated that they had a psychiatric condition or had clinical levels of depression, it is possible this sample could have had elevated anxiety. This means when interpreting the results of the study it is important to note that it cannot be ascertained that the non-clinical sample had no significant anxiety. Future research needs to address this by using an anxiety measure in the clinical and non-clinical sample.

Secondly, the number of people in the clinical sample were much fewer than the non-clinical sample; this discrepancy in group sizes may have reduced the accuracy of the ROC curve. Another limitation regarding the sample, is that the representativeness may be undermined due to the localised area in which participants were recruited from, and a possible selection bias, as those who opt in to take part in studies are different to those who do not (Hammer, du Prel, & Blettner, 2009). The seemingly low response rate for the clinical sample within this study may not just be at a participant level but may also reflect clinicians within services not providing questionnaires to all those who are eligible. This is supported by the literature which indicates that clinicians can be reluctant to involve their clients in research (Cox & McGarry, 2003).

Another limitation is that no universal definition of the concept of QOL exists (Walker, 2005), therefore the definition used in this study, which conceptualised it as being related to physical health, psychological health, social relationships, and the environment (The WHOQOL group, 1998), may be different to the definitions used by others. Also, it is

important to note that QOL may overlap with the concept of successful ageing, which includes: life expectancy, social involvement, social functioning, psychological functioning, and environmental factors (Bowling & Iliffe, 2011). Despite apparent similarities, however, QOL and successful ageing are still considered different constructs which may merely be predictors of each other (Walker, 2005). Finally, the cross-sectional nature of this study means that causal relationships cannot be ascertained.

The findings from this study point to various avenues of research which could be explored in the future. Longitudinal research in this area would be beneficial as such studies are currently lacking and would help to clarify the temporal relationship between negative affect, attitudes towards ageing, and QOL among older adults. Future research could further examine cut off scores on the AAQ which can distinguish between clinical and non-clinical populations. Finally, future research could examine exactly how attitudes towards ageing could be incorporated into therapy, and whether doing this has any added benefits to the effectiveness of interventions.

Conclusions

Older adults accessing mental health services with clinical anxiety are more likely to have negative attitudes towards ageing and a poorer QOL compared to a non-clinical sample. Nevertheless, clinical anxiety does not predict attitudes towards ageing and QOL beyond that of other factors found to influence these variables, such as depression and physical health. These findings need to be considered when assessing and treating late life anxiety among older adults. Continued research in this area is warranted, and future studies would benefit from using clinical samples and longitudinal designs.

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Chapter Four: Extended Methodology

This chapter provides an extended account of the methodology, including additional information on: participants, measures, procedure, recruitment, ethical considerations, sample size calculations, main analyses and additional analyses.

4.1. Participants

4.1.1 Clinical sample. Potential participants were identified by clinicians. The age range of participants (≥ 60) was chosen as it matches the age range used in validated measures for older adults. Older adults were included in the study if they were deemed to have an anxious presentation consistent with any type of specified or unspecified anxiety disorder, as the author was interested in obtaining a sample of older adults who had clinical anxiety regardless of the type of anxiety. The anxiety presentation was considered the primary difficulty, rather than secondary to something like a medical problem. Participants were screened out of the final sample if they scored below the determined threshold on the Geriatric Anxiety Inventory (GAI; Pachana, Byrne, Siddle, & Koloski, 2007) to ensure they had clinically significant anxiety when filling in questionnaires, as attitudes towards ageing are thought to be mood-state dependent (Chachamovich, Fleck, Laidlaw, & Power, 2008).

Participants were not excluded if they had mental health problems additional to anxiety as co-morbid mental health problems are not uncommon among older adults (Byers et al., 2010; Reynolds et al., 2015) and longitudinally anxiety is found to lead to depressive symptoms among older adults (Wetherell, Gatz, & Pedersen, 2001), therefore excluding those with additional mental health difficulties would likely result in an unrepresentative sample. People were not eligible for the study if they had a diagnosis of dementia, as this could impact on reporting of their symptoms. They were also not deemed eligible if deemed to lack capacity to make a decision about research, for example if they were currently experiencing an episode of psychosis. Additionally, people were not asked

to complete the study if they would not be able to read the information sheets and questionnaires, for example if they had significant reading impairments or they could not speak or read English. Clinicians used clinical judgement and any relevant documentation to assess whether someone was suitable for the study.

4.1.2 Non-clinical sample.

The non-clinical sample was collected by the WHOQOL-OLD group in a field trial (Power, Quinn, & Schmidt, 2005), and was used to develop the AAQ (Laidlaw, Power, & Schmidt, 2007). The dataset included a large community sample (n=5566) of adults aged 60 or over who did not have significant cognitive impairments or a terminal illness (Laidlaw et al., 2007). Data was provided to the author on 116 older adults from Edinburgh living in the community aged between 60 and 100. This non-clinical sample included information on: demographics, Geriatric Depression Scale short form (GDS-15; Yesavage & Sheikh, 1986) total scores, World Health Organization Quality of Life Scale Short Form (WHOQOL-BREF; The WHOQOL group, 1998a) scores, and Attitudes towards Ageing Questionnaire (AAQ; Laidlaw, et al., 2007) scores. Participants from the non-clinical sample were excluded if there was no data available for an entire measure, or more than 20% of data within a measure was missing.

In order to make comparisons between the clinical and non-clinical sample, the author sought to screen out anyone from the non-clinical sample who may have clinical anxiety themselves. The data for the non-clinical sample did not include anxiety measures which meant participants could not be screened out based on anxiety scores, however, other information was available which enabled the researcher to screen out people with potential clinical anxiety. Information was collected on whether participants identified themselves as having a 'psychiatric condition', which could have included an anxiety disorder, therefore the author excluded anyone who stipulated they did. Participants were further excluded if they had depression scores of 5 and above, which is indicative of

depression, on the Geriatric Depression Scale (Yesavage & Sheikh, 1986). This is because depression highly correlates with anxiety (Wolitzky-Taylor et al., 2010), with one study finding that 87% of older adults in the community with case level depression had clinical anxiety (Braam et al., 2014). Figure 4.1 outlines the process involved in obtaining the final sample of participants.

4.1.3. Total sample.

The total sample size overall was 109 people. With this sample size and power of 80%, a medium effect size could be detected.

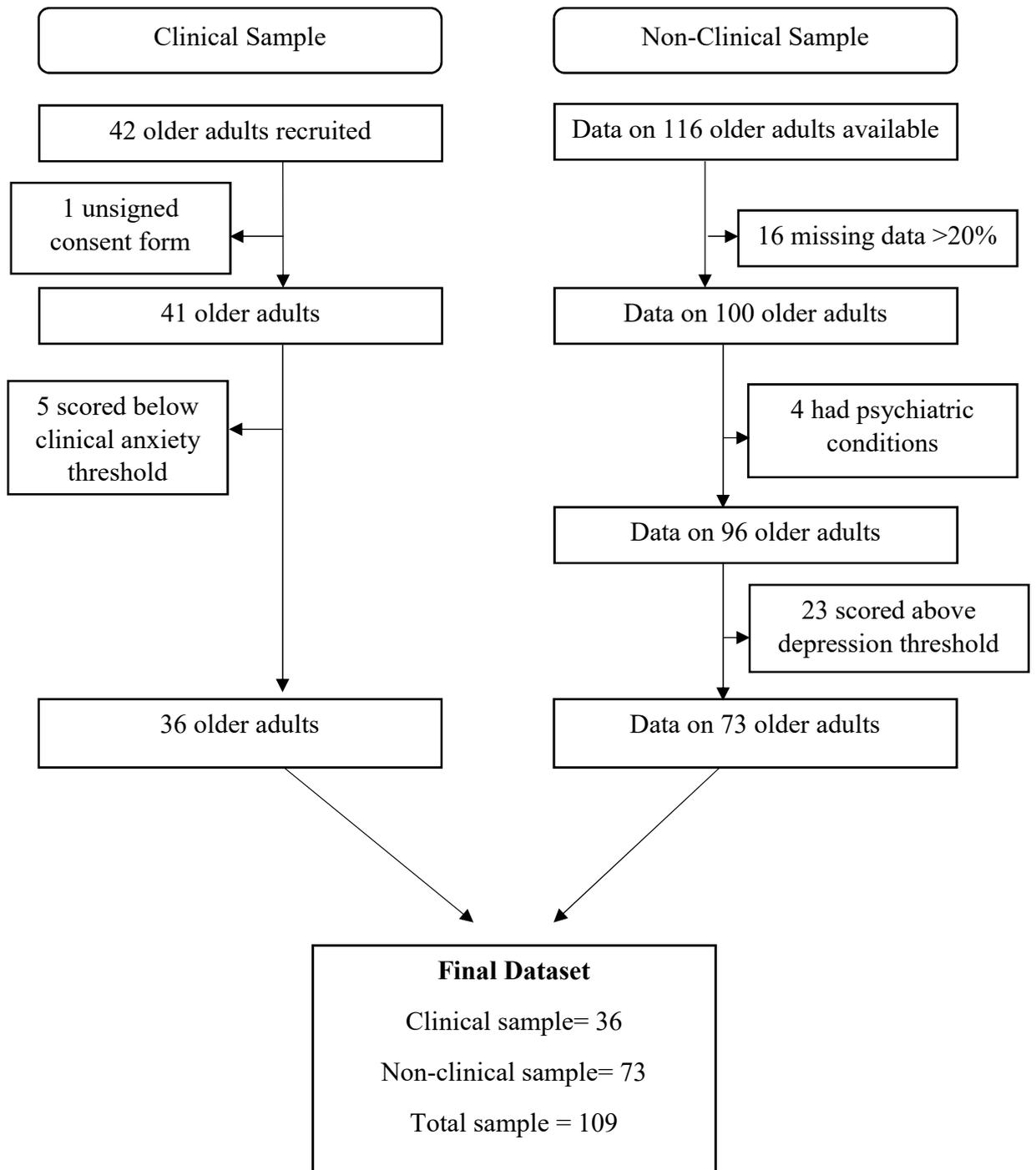


Figure 4.1. Flowchart demonstrating the process involved in obtaining the final data set.

4.2 Measures

Participants from the clinical sample were asked to fill in demographic information and a series of questionnaires. Questionnaires were counterbalanced to ensure that the results were not influenced by the order of the questionnaires. As the non-clinical sample had already been collected, the questionnaires used for the clinical sample aimed to match these.

4.2.1 Attitudes towards Ageing Questionnaire (AAQ; Laidlaw et al., 2007). The three domains of attitudes towards ageing (psychological growth, psychosocial loss, and physical change) assessed by the AAQ relate to positive and negative perceptions of ageing. The questionnaire was developed internationally and there is evidence that it is both a reliable and valid measure for older adults (Laidlaw et al., 2007). The reported reliability statistics for each sub-scale are 0.81, 0.81, and 0.74 (Laidlaw et al., 2007). Each item on the questionnaire is scored on a 5-point likert scale (from strongly agree to strongly disagree). Some items refer to older adults in general, such as ‘wisdom comes with age’, whereas other questions are directed at the older adult themselves, such as ‘I don’t feel old’. It is considered that using a total score for the AAQ is not meaningful (Laidlaw, Kishita, Shenkin, & Power, 2018) therefore only domain scores were calculated.

4.2.2 Geriatric Anxiety Inventory (GAI; Pachana, Byrne, Siddle, & Koloski, 2007). This questionnaire was developed for older adults specifically and follows an ‘disagree/agree’ format, which are scored 0 and 1. It demonstrates acceptable reliability and validity for measuring anxiety among older adults and has a Cronbach’s alpha of 0.93 within a psychogeriatric population (Pachana et al., 2007). When developing the GAI, preliminary findings indicated that scores of ≥ 9 could be used to determine any anxiety disorder among older adults (Pachana et al., 2007). Nevertheless, the sample size of those with any type of anxiety disorder in this study was very small (N=11) and was unlikely to have represented all types of anxiety disorders. One study found that in their sample of

psychiatric patients who had been diagnosed with GAD, only 50% of them scored 9 or more on the GAI (Bendixen & Engedal, 2016). Similarly, another study found that over 50% of those determined to have clinically significant anxiety by their clinicians did not meet the threshold for anxiety by the GAI (Ball, Lipsius, & Escobar, 2015). Studies which have aimed to validate the GAI since its creation have found variable cut off scores (Johnco, Knight, Tadic, & Wuthrich, 2015), with numerous studies reporting lower scores than the original ones recommended (Cheung et al., 2012; Matheson et al., 2012), or not being able to find any suitable cut off scores (Gould et al., 2014).

Given the findings regarding the GAI, and that in this study the GAI was intended to be used as a secondary screen for anxiety following clinician judgement, it was decided that a lower score on the GAI than the one originally recommended would be suitable. As this study included people in secondary mental health care, where physical health problems are relatively high (Joint Commissioning Panel for Mental Health, 2013), a cut-off score of 3 or more, evidenced within a physical health setting (Cheung et al., 2012), was used. This cut off score is still higher than the average GAI scores found within non-clinical samples, which are found to range between 0.58 (Johnco et al., 2015) and 2.3 (Pachana et al., 2007).

4.2.3 Geriatric Depression Scale (GDS-15; Yesavage & Sheikh, 1986) Short

Form. The GDS has a 'yes/no' format, which are scored 0 or 1. This measure was originally used in the non-clinical population, but authors converted scores to the shortened version, the GDS-15. The GDS-15, was administered within the clinical sample as it evidenced to be a useful screening tool for depression among the elderly (Herrmann, Mittmann, & Silver, 1996) and takes less time, whilst still remaining to be a reliable and valid measure (Yesavage & Sheikh, 1986). The short form has been found to have a Cronbach's alpha of 0.75 (Friedman, Heisel, & Delavan, 2005).

4.2.4 World Health Organization Quality of Life Scale Short Form

(WHOQOL-BREF; The WHOQOL Group, 1998a). The WHOQOL is an 100-item

measure designed to provide a detailed assessment of Quality Of Life (QOL) (The WHOQOL Group, 1998b). As this measure is lengthy and time consuming, this study used the WHOQOL-BREF, which is a 26 item measure to assess QOL (The WHOQOL Group, 1998a). Each item has a 5-point Likert scale and scores for each domain (physical health, psychological health, social relationships, environment) can be calculated, with higher scores indicative of a better QOL. Raw scores were transformed to range between 0-100 for each domain. The measure is found to have a Cronbach's alpha of 0.68-0.82 for the various domains (Skevington, Lotfy, & O'Connell, 2004). There is a version of this measure which has been specifically developed for older people which can be used in combination with the WHOQOL-BREF (World Health Organisation, 2006). However, as the WHOQOL-BREF has still been deemed to be reliable and valid in an older adult population (Ramona Lucas-Carrasco, Laidlaw, & Power, 2011) and takes less time to complete, it was deemed as a sufficient measure for QOL among older adults within this study.

4.3. Procedure

First, contact was made with mental health services within the local area to ascertain if they would be interested in supporting the study. This initial contact was made either by email or in person. In total, four primary mental health settings, and seven secondary mental health settings agreed to take part. Where services provided consent to recruit, the author offered to attend meetings to further explain the study. All services were provided with relevant study documentation including the main procedure and study criteria, and they had the contact details of the author should they have any further queries. A lead clinician was appointed at each service in order for the author to keep up to date with recruitment.

Mental health clinicians included roles such as: Clinical Psychologists, Psychiatrists, Mental Health Nurses, Psychological Wellbeing Practitioners, Occupational

Therapists, Occupational Therapy Assistants, and Support Workers. Clinicians provided participants with information sheets. After receiving information about the study, participants were advised to take at least 48 hours to consider whether they wanted to take part. After this, if they were still interested in the study, clinicians were asked to provide them with the study pack, which contained: The information sheet, consent form, a demographic questionnaire, the GDS-15, the GAI, the AAQ, the WHOQOL-BREF, the option to enter into a prize draw, the option to receive a summary of study results, and a study debrief. Participants had as much time as needed to fill in the questionnaires, up until the point of data analysis. The researcher stored all returned study data in a locked briefcase. Recruitment of the clinical sample took place over approximately nine months.

4.4 Recruitment and Amendments

Substantial and non-substantial amendments were made to the study within the recruitment period to increase the amount of people being recruited. Mid-way through data collection, it became apparent that recruitment was slower than expected. To make the study more convenient, a substantial amendment was made to add the study online. The Bristol Online Survey tool was used for the study to be conducted online. The online version of the study was the same as the paper version. Once this amendment had ethical approval, services were informed that they could hand out the new information sheet with the online link if this was more suitable for the client, or to use the original procedure if not. Overall, four people accessed the study online. Towards the end of the study the recruitment period was also extended by 6 weeks to give services extra time to recruit final participants.

4.5. Ethical Issues

Ethical approval was granted by the South Birmingham Ethics Committee. Following NHS ethical approval, local approval was granted by NSFT and CPFT research

and development teams. Substantial and non-substantial amendments were not implemented until approved by the relevant ethical committees.

4.5.1 Consent and the Right to Withdraw. Informal consent was provided by team leaders, clinical leads, or managers within the services who took part to recruit for the study. After reading the study information, all participants who took part were asked to provide formal consent which was indicated by them signing a consent form. The information sheet fully outlined the study and informed participants of their right to withdraw up to the point in which data was analysed.

4.5.2 Confidentiality. In line with the Data Protection Act (1998) participants were informed that their information would be kept confidential. Names were provided on consent forms but not on the questionnaires themselves. Once the researcher collected the study packs, each participant was assigned a number which was attached to their consent forms, and this number was placed on each questionnaire. When their information was inputted into the computer it contained only their number rather than their name. Consent forms were stored separately to questionnaires in locked storage. Participant's information was not shared with their clinical team or General Practitioner (GP). Participant's data will be held for up to 10 years and after this point it will be destroyed.

4.5.3 Coercion. To reduce the likelihood that people felt coerced into taking part in the study, it was made clear to participants that they had no obligation to take part and that their decision would not impact the care that they receive. Participants were given ample time to complete the questionnaires, up until data analysis. Participants were made aware that it was not necessary to discuss their involvement in the research with anyone outside the research team, although they could do so if they wanted to.

4.5.4 Distress. The questionnaires used in this study are routinely used in clinical practice and were deemed unlikely to create distress. However, as they did ask what could be deemed sensitive questions, in the information sheet participants were informed of the

potential to be upset and were reminded they do not need to answer every question.

Participants were also given a debrief sheet which included professionals to contact should they feel distressed.

4.5.5 Service User Involvement. Service users were consulted about the acceptability of the research in the proposal stage. A summary of the study and associated documents were sent to a panel of mental health service users. Overall, they found the study to be acceptable, and made small recommendations to improve the research. Based on these recommendations the following changes were made: the language in the information sheet was simplified, the consent form had an added box about confidentiality, and the aims of the study were made clearer.

4.6. Data Analysis

4.6.1. Missing Data. Missing data analyses were conducted for the whole sample to explore the extent of missing data and whether data was missing at random. The percentage of missing data was highest for the WHOQOL-BREF, with missing data ranging from 0-12% for individual questions. Missing data for questions on the AAQ ranged from 0-2.8%, and on the GDS-15 ranged from 0-1.9%. Missing data on the GAI within the clinical sample ranged from 0-5.6% for individual questions. Little's (1988) Missing Completely at Random test (MCAR) was conducted on data available for all groups.

4.6.2 Main Analyses. To test the main research hypotheses, ANCOVA's were considered, to compare the clinical group and non-clinical group on QOL and attitudes towards ageing whilst controlling for depression, a potential significant confounder. When conducting an ANCOVA there must be independence of the covariate and treatment effect, and homogeneity of regression slopes (Field, 2009). As depression was not independent of whether someone was in the anxiety group or not, ANCOVA's could not be used. *T*-tests were therefore determined the most suitable test to look at differences between groups. To

establish the contribution of clinical anxiety to attitudes towards ageing and QOL, hierarchical multiple regression was used. This type of analysis has been used in similar studies previously (Bai et al., 2016; Shenkin, Laidlaw, et al., 2014) and provided a way to investigate the unique contribution of clinical anxiety whilst accounting for other variables. The order in which variables were entered were based on similar previous studies (Chachamovich et al., 2008; Shenkin, Laidlaw, et al., 2014). To determine cut off scores on the AAQ, a Receiver Operating Characteristic (ROC) curve was used.

4.6.3. Assumption testing. Assumption tests were administered before any analyses were conducted. First, the four main assumptions for parametric statistics were checked, which are: data is normally distributed, data have homogeneity of variance, data is independent, and data is continuous (Field, 2009). In line with the recommendations, numerous tests were used to provide an indication of the normality of data (Field, 2009). Skewness and kurtosis statistics were referred to, which were converted into Z scores to determine significant violations of normality. Normality was further assessed by carrying out visual inspections of histograms and Q-Q plots. For the clinical group, significance values in the Shapiro-Wilk test were also considered. This test was not referred to for the non-clinical sample, however, as it had a larger sample size and the Shapiro-Wilk is not recommended for larger samples (Field, 2009). To assess for homogeneity of variance, Levene's test was used, with any significant findings indicating that the assumption of homogeneity of variance was violated.

To explore the first research question, assumptions of multiple regression were checked. Independence of residuals was indicated by the Durbin-Watson statistics for all domains of the AAQ and the WHOQOL-BREF. A visual check of residual plots was conducted to check that the independent variables had a linear relationship with the dependent variables, and the independent variables collectively had a linear relationship with the dependent variable. Homoscedasticity of residuals was checked by doing a visual

inspection of residual plots. To check for multicollinearity the correlations of the independent variables were checked, and tolerance statistics were examined. Outliers were checked alongside leverage and influence values. Finally, histograms were inspected to check that residuals were normally distributed.

In order to perform an ROC curve, it has been suggested that 100 cases or more is acceptable (Metz, 1978). It is also required that 'diagnostic truth' must be known, although it is acknowledged that standards of truth need not be perfect (Metz, 1978).

4.7 Additional Exploratory Testing

With reference to previous research, and the results of the main research analyses, the author sought to further explore the data available within the clinical sample.

4.7.1 Anxiety severity, attitudes towards ageing, and quality of life. Given that previous research has indicated that levels of depression are important to know when investigating attitudes towards ageing and QOL, rather than just whether someone is depressed or not (Chachamovich et al., 2008), the author was interested in whether within the clinical sample only, anxiety severity related to attitudes towards ageing and QOL. Within the main analyses, data from five individuals were excluded because they scored below the determined threshold on the GAI. It was decided that all the participants within the clinical sample would be included in the analyses regarding anxiety severity, so that the author could examine the impact of anxiety severity at all levels within a clinical group.

First, the clinical group were divided into three groups of anxiety severity based on their GAI score. The 'low anxiety' group (n=10) had scores which were between the 0-25th percentiles, the 'medium anxiety' group (n=19) had scores between the 25-75th percentiles, and the 'high anxiety' group (n=12) had scores above the 75th percentile. Assumptions were checked to determine whether parametric statistics could be used. Results were interpreted according to the Holm-Bonferroni correction to control for multiple

comparisons. If significant results were found, post hoc analyses were used to determine where the significant differences lie.

Following this, the author used hierarchical multiple regression analyses, similar to the ones conducted in the main analyses, to explore whether within the clinical group, anxiety scores could predict attitudes towards ageing and QOL scores beyond demographic factors, physical health factors, and depression scores. Assumptions for multiple regression were checked before conducting analyses.

4.7.2 Attitudes towards ageing and quality of life. Previous studies show that there is an association between QOL and attitudes towards ageing within a non-clinical population (Kalfoss et al., 2010; Low, Molzahn, & Schopflocher, 2013; Top & Dikmetas, 2015). It seemed likely from the results of this study, that the two variables would be related and therefore further investigation was justified. Additional analyses were therefore conducted to explore whether attitudes towards ageing and QOL correlated within a clinically anxious sample. Additional assumption checks were carried out to determine whether parametric statistics could be used. Significance was determined by $p < .01$ to account for multiple testing.

4.7.3 Mediating variables. Given the findings from the main analyses that psychosocial loss and physical change were found to be significantly different between the clinically anxious sample of older adults and non-clinical sample, but clinical anxiety was not a unique predictor of attitudes when other variables were accounted for, the author was interested in whether certain variables could be mediating the relationship between anxiety and attitudes towards ageing. Laidlaw's (2015) model would suggest that affect, behaviour, and physicality all influence attitudes towards ageing. Given this, it was hypothesised that depression and subjective satisfaction with health could be mediating the relationship between anxiety and attitudes towards ageing (psychosocial loss and physical change) within the clinically anxious sample. Nonparametric bootstrapping was used to assess

mediation, as this has been recommended for small samples (Preacher, Rucker, & Hayes, 2007). In such analyses, mediation is determined to be significant if the 95% confidence intervals for the indirect effect do not include zero (Preacher et al., 2007).

Chapter Five: Extended Results Section

This chapter provides an extended account of the results, including missing data analyses and assumption testing. It also provides further outputs from the main analyses and the results of additional exploratory analyses conducted on the data.

5.1 Missing Data Analyses

After conducting Little's (1988) Missing Completely at Random test (MCAR), which indicated that data was missing completely at random, further inspection of the missing data was carried out. This revealed that question 21 (*how satisfied are you with your sex life*) on the World Health Organization Quality of Life Scale Short Form (WHOQOL-BREF; The WHOQOL group, 1998a) was the most frequently missed question, particularly by those who were classified as being within the 'older' (>75) age group. There did not appear to be any differences between the clinical group and non-clinical group in terms of missing data.

Due to the relatively small size of the dataset, and the finding that data was missing at random, rather than deleting those with missing data, missing data were replaced. The WHOQOL-BREF recommends that where there are two items or less missing from a domain, or one or less for the social relationships domain, the mean of other items in the domain for that person can be substituted (WHO, 2006). Given this, and that data in each domain was found to be normally distributed, the mean-item imputation method was used to replace missing items for the WHOQOL-BREF, as has been done in previous studies (Brett et al., 2012). The imputation method was applied to the Attitudes towards Ageing Questionnaire (AAQ; Power, Laidlaw, & Schmidt, 2007), which was developed in a similar way to the WHOQOL-BREF (Laidlaw et al., 2007). Domain scores could not be calculated for two participants in the non-clinical sample and one participant in the clinical sample due to there being too many items missing within a single domain. For the Geriatric Depression Scale short form (GDS-15; Yesavage & Sheikh, 1986) when less than 20% of

data is missing, using ipsative mean imputation is reported to be acceptable (Imai et al., 2014), therefore this method was used for the GDS-15 and the Geriatric Anxiety Inventory (GAI; Pachana, Byrne, Siddle, & Koloski, 2007), which is a similar scale with two possible responses. The means and standard deviations for main measures of interest were compared before and after imputation took place for each group. As indicated in Table 5.1, scores were very similar before and after, which suggests that imputation did not bias the dataset. Where there were small differences in scores before and after imputation, these were in the same direction and of a similar magnitude for both the clinical and non-clinical group.

Table 5.1

Comparison of Mean Scores Before and After Imputation

Measure	Clinical group mean (SD)		Non-clinical group mean (SD)	
	Before imputation	After imputation	Before imputation	After imputation
<i>WHOQOL-BREF</i>				
Physical health	49.97 (24.60)	50.28 (24.62)	71.71 (16.43)	71.71 (16.43)
Psychological health	40.64 (19.29)	40.64 (16.43)	75.08 (13.37)	75.59 (12.70)
Social relationships	57.03 (18.80)	59.39 (19.21)	68.52 (16.46)	73.39 (13.16)
Environment	65.84 (18.86)	65.50 (18.59)	76.30 (13.27)	76.30 (13.27)
<i>AAQ</i>				
Psychosocial loss	23.03 (6.42)	23.21 (6.43)	16.13 (3.96)	16.14 (3.94)
Physical change	22.14 (6.05)	22.45 (6.24)	25.78 (4.81)	25.59 (4.78)
Psychological growth	25.09 (4.78)	25.09 (4.78)	26.54 (4.78)	26.63 (4.73)

5.2 Assumption Tests

5.2.1 Normal distribution. Tests of normality provided support for the data for the clinical sample being normally distributed for all domains on measures included in analysis, apart from the physical change domain of the AAQ which was positively skewed. For the non-clinical group, data was also normally distributed, with the exception of the GDS-15 and the social domain of the WHOQOL-BREF in which kurtosis was apparent. Table 5.2 provides an overview of the skewness and kurtosis values for both groups.

Table 5.2

Skewness and Kurtosis Values

Measure	Clinical Group		Non-clinical Group	
	Skewness (SE)	Kurtosis (SE)	Skewness (SE)	Kurtosis (SE)
WHOQOL-BREF				
Physical health	-.05 (.39)	-.84 (.77)	-.38 (.28)	-.84 (.56)
Psychological	.05 (.39)	-.71 (.77)	-.43 (.28)	-.24 (.56)
Social	-.24 (.39)	-.76 (.77)	-.32 (.28)	1.94 (.56)**
Environmental	-.21 (.39)	-.12 (.77)	-.14 (.28)	-.40 (.56)
AAQ				
Psychosocial loss	.05 (.39)	-.73 (.77)	-.17 (.28)	-.82 (.56)
Physical change	.77 (.39)*	-.31 (.77)	.42 (.28)	.31 (.56)
Psychological growth	.45 (.40)	.16 (.78)	.06 (.28)	.55 (.56)
GDS-15	-.12 (.39)	-.95 (.77)	.12 (.28)	-1.26 (.56)*

Note. * Z value > 1.96 indicates significance of $p < .05$ ** Z value > 3.29 indicates significance of $p < .01$

5.2.2 Homogeneity of variance. Levene's homogeneity of variance test revealed that the assumption of homogeneity of variance was violated for three domains of the WHOQOL-BREF (physical health, psychological health, and social relationships), the GDS-15, and two domains of the AAQ (psychosocial loss and physical change). Table 5.3 provides an overview of the test statistics.

Table 5.3

Levene's Test for Homogeneity of Variance

Measure	Levene's Test	
	F Statistic	Significance (<i>p</i> value)
WHOQOL-BREF		
Physical health	9.96	.002
Psychological	11.03	.001
Social	13.69	<.001
Environment	3.58	.06
AAQ		
Psychosocial loss	12.91	<.001
Physical change	5.62	.02
Psychological growth	.15	.71
GDS-15	55.99	<.001

5.2.3 Multiple Regression Assumptions. Assumptions for conducting multiple regression were checked. Independence of residuals was indicated by the Durbin-Watson statistics, which were between 1.49 and 2.20 for the various domains. A visual check of residual plots indicated that the independent variables had a linear relationship with each dependent variable, and the independent variables collectively had a linear relationship

with each dependent variable. Homoscedascity of residuals was deemed acceptable based on visual inspection of residual plots. To check for multicollinearity the correlations of the independent variables were checked. Numerous independent variables were significantly correlated with each other (see Table 5.4), with the highest correlation being between depression scores and whether someone belonged to the anxious group of older adults or not, which is an indication of multicollinearity. Tolerance statistics were checked to further investigate multicollinearity; values were all over .2 therefore it was deemed that the assumption of no multicollinearity was met. Outliers were checked, and there were three outliers overall. However, as the leverage and influence values were all within the acceptable range for these participants, these scores were not removed. Finally, a check of histograms indicated that residuals were normally distributed.

Table 5.4

Multiple Regression Independent Variables Correlation Output

	Gender	Age	Number of health problems	Satisfaction with health	GDS-15	Anxiety group
Gender	-	.20*	<.01	.01	-.03	.03
Age		-	-.03	-.02	-.06	.18*
Number of health problems			-	-.49**	.47**	-.36**
Satisfaction with health				-	-.60**	.52**
GDS-15					-	-.79**
Anxiety group						-

Note. * $p < .05$ ** $p < .01$

5.2.4 Addressing violations of assumptions. The skewness and kurtosis statistics indicated that the physical change domain of the AAQ was positively skewed for the clinical group. As the skew appeared to be only moderate, and the non-clinical group also

had a slight skew in the same direction, no transformations were applied to the data. The assumption tests for the non-clinical group indicated that kurtosis was significant. Transformations were applied with an aim to make the data more normal, but no transformation was able to reduce the kurtosis present. It is noted that with larger sample sizes visual representations may be more helpful, therefore visual inspections were also carried out. As the visual inspections of the histogram and Q-Q plot indicated relative normality, data was retained and not changed. For the domains in which the homogeneity of variance assumption was violated, equal variances could not be assumed. To account for this, the significance values for equal variances not assumed (Welch's *t*-test) were used.

5.3 Regression Additional Outputs

Table 5.5 provides an overview of bivariate correlations between the independent variables entered into the regression models and attitudes towards ageing domains; all variables apart from age significantly correlated with attitudes towards ageing. Table 5.6 provides an overview of bivariate correlations between the independent variables and the quality of life domains; all variables apart from gender significantly correlated with quality of life. Table 5.7 provides an overview of standardised beta coefficients of the final regression models. Depression appeared to be the most significant predictor of attitudes towards ageing and quality of life when all other variables were held constant. However, it was not considered helpful to compare standardised beta statistics as the anxiety variable was categorical, and therefore had less power than the continuous variables (Altman & Royston, 2006), and it overlapped with many of the other variables, which can result in misleading beta statistics (Courville & Thompson, 2001).

Table 5.5

Bivariate Correlation Coefficients for Attitudes Towards Ageing

	Psychosocial Loss	Physical Change	Psychological Growth
Age	.13	-.18	-.03
Gender	-.03	-.16	-.26**
Reported number of health problems	.19	-.29**	.11
Satisfaction with health	-.54**	.41**	.12
Depression	.74**	-.41**	-.29**
Anxiety group	-.53**	.29**	.16

Note. * $p < .05$ ** $p < .01$

Table 5.6

Bivariate Correlation Coefficients for Quality of Life

	Physical health	Psychological Health	Social Relationships	Environment
Age	-.21*	.02	.06	-.24*
Gender	-.09	<.01	<.01	-.03
Reported number of health problems	-.52**	-.28**	-.17	-.25**
Satisfaction with health	.67**	.46**	.30**	.46**
Depression	-.65**	-.84**	-.44**	-.54**
Anxiety group	.42**	.71**	.34**	.30**

Note. * $p < .05$ ** $p < .01$

Table 5.7

Standardised Beta Coefficients for Final Models

	Attitudes Towards Ageing			Quality of Life			
	PL	PC	PG	Phys. Health	Psych. Health	Social Relations.	Environment
Gender	-.04	-.13	-.26**	-.07	-.01	-.01	.01
Age	.17*	-.15	.04	-.19**	-.05	.02	-.23**
No. Health problems	-.08	-.13	.22*	-.27**	.01	-.01	-.09
Satisfaction with health	-.18*	.23*	.01	.42**	.04	.06	.27**
Depression	.68**	-.31*	-.57**	-.38**	-.65**	-.30	-.52**
Anxiety group	.01	-.11	-.21	-.11	.22*	.13	-.22

Note. PL= Psychosocial Loss. PC=Physical Change. PG= Psychological Growth. Phys. Health= Physical Health. Psych. Health=Psychological Health. Social Relations. = Social Relationships. * $p < .05$ ** $p < .01$.

5.4 ROC Curve Sensitivity and Specificity Outputs

Tables 5.8, 5.9, and 5.10 provide an overview of the sensitivity and 1-specificity values of the ROC curves for domains of the AAQ.

Table 5.8

ROC Curve Analysis Results for the Psychosocial Loss Domain

Score is greater than or equal to ^a	Sensitivity	1-Specificity
7	1	1
9	1	.97
10.50	.97	.90
11.50	.97	.82
12.50	.94	.80
13.50	.94	.73
14.50	.94	.66
15.50	.89	.58
16.50	.83	.49
17.20	.78	.44
17.70	.78	.43
18.50	.78	.30
19.50	.72	.23
20.50	.69	.16
21.50	.58	.04
22.50	.44	.03
23.50	.39	.03
25.50	.36	.000
27.50	.33	.000
28.50	.28	.000
29.35	.19	.000
29.85	.17	.000
30.50	.14	.000
32.00	.11	.000
33.50	.06	.000
34.50	.03	.000
36.00	.000	.000

Note. ^a This results in a positive classification (clinically anxious group). Boldface has been used to indicate optimal specificity and sensitivity.

Table 5.9

ROC Curve Analysis Results for the Physical Change Domain

Score is less than or equal to ^a	Sensitivity	1-Specificity
13	.000	.000
14.50	.03	.000
15.50	.11	.000
16.50	.14	.01
17.50	.19	.06
18.50	.33	.06
19.50	.42	.08
20.30	.56	.11
20.80	.56	.14
21.36	.58	.19
21.86	.58	.21
22.50	.58	.26
23.50	.64	.38
24.50	.67	.42
25.50	.67	.53
26.15	.72	.56
26.65	.72	.57
27.50	.78	.67
28.50	.81	.78
29.50	.83	.81
30.50	.89	.86
31.50	.89	.90
32.50	.89	.92
33.05	.92	.93
33.55	.94	.93
34.50	.97	.96
35.50	.97	.97
37	.97	.99
39	1	.99
41	1	1

Note. ^a This results in a positive classification (clinically anxious group). Boldface has been used to indicate optimal specificity and sensitivity.

Table 5.10

ROC Curve Analysis Results for the Psychological Growth Domain of the AAQ

Score is less than or equal to ^a	Sensitivity	1-Specificity
12	.000	.000
15	.000	.02
17.50	.06	.02
18.50	.06	.03
19.50	.11	.06
20.50	.20	.11
21.50	.23	.14
22.50	.31	.17
23.50	.40	.28
24.50	.49	.31
25.50	.57	.35
26.50	.63	.49
27.50	.69	.60
28.50	.74	.71
29.50	.83	.75
30.50	.89	.72
30.95	.89	.81
31.50	.91	.83
32.50	.94	.92
33.50	.97	.94
36.00	.97	.96
39.00	1.00	1.00
32.50	.89	.92
33.05	.92	.93
33.55	.94	.93
34.50	.97	.96
35.50	.97	.97
37	.97	.99
39	1	.99
41	1	1

Note. ^a This results in a positive classification (clinically anxious group).

5.5 Clinical Cut Off Scores

As this study used clinical cut off scores below the original recommended (Pachana, et al., 2007), additional tests were conducted in which only people who scored ≥ 9 on the GAI were included to explore whether using this higher threshold would have made a difference to results. The means of main measures of interest were compared between the original clinical sample (n=36) and the revised clinical sample when applying

a cut off score of 9 or above (n=33), and main statistical tests were re-run. Table 5.11 shows that increasing the threshold for being included in the clinical sample did not make any differences to overall significance.

Table 5.11

Comparisons Between the Original Clinical Group and the Revised Clinical Group

Measure	Clinical group mean (SD)		t- value		p value	
	Original sample (n=36)	Revised sample (n=33)	Original sample (n=36)	Revised sample (n=33)	Original sample (n=36)	Revised sample (n=33)
WHOQOL-BREF						
Physical health	50.28 (24.62)	48.00 (23.10)	-4.73† (50.88)	-5.32† (47.23)	<.001*	<.001*
Psychological health	40.64 (19.29)	38.82 (18.78)	-9.87† (50.45)	-10.24† (45.73)	<.001*	<.001*
Social relationships	59.39 (19.21)	58.94 (18.68)	-3.94† (51.96)	-4.01† (47.13)	<.001*	<.001*
Environment	65.50 (18.59)	63.67 (17.66)	-3.49 (107)	-3.67 (104)	.001*	.001*
AAQ						
Psychosocial loss	23.21 (6.43)	23.81 (6.22)	6.06† (48.34)	6.52† (44)	<.001*	<.001*
Physical change	22.45 (6.24)	21.79 (5.52)	-2.65† (56.13)	-3.60† (103)	.01*	<.001*
Psychological growth	25.09 (4.78)	24.75 (4.81)	-1.58 (105)	-1.87 (103)	.12	.07
GAI	14.88 (4.40)	15.75 (.59)	-	-	-	-

Note. †Welch's t-test. * significant at $p < .05$.

5.6 Additional Exploratory Testing within the Clinical Group

Exploratory tests were conducted within the clinical group of older adults only.

5.6.1 Anxiety severity, attitudes towards ageing, and quality of life. Data did not meet the parametric assumptions; therefore, a Kruskal-Wallis test was used to compare the three anxiety groups on their attitudes towards ageing and quality of life scores. Table 5.12

indicates that there were significant differences in attitudes towards ageing and quality of life scores between those with low, medium, and high levels of anxiety. The social relationships domain of the WHOQOL-BREF was the only domain in which scores were not found to be significantly different between the three groups.

Table 5.12

Attitudes Towards Ageing and Quality of Life Scores Between the Three Anxiety Groups

Measures	'Low anxiety' group median	'Medium anxiety' group median	'High anxiety' group median	<i>p</i> value	Holm-Bonferroni correction
<i>AAQ</i>					
Psychosocial loss	18.50	21.50	28.50	.015	.017
Physical change	27.00	20.00	19.00	.045	.05
Psychological growth	28.00	25.50†	22.50	.01	.025
<i>WHOQOL-BREF</i>					
Physical health	75.00	56.00	38.00	.003	.013
Psychological health	69.00	31.00	31.00	<.001	.017
Social relationships	75.00†	69.00	62.50	.263	.05
Environment	81.00	75.00	63.00	.003	.025

Note. † Missing data.

To identify where the significant differences lie, Dunn's pairwise tests, which corrected for multiple comparisons, were carried out. For the psychosocial loss, physical change and psychological growth domains, significant differences were found between the low anxiety and high anxiety group ($p < .05$). For the physical health domain and psychological health domain there were significant differences between the low and high anxiety group ($p < .01$) and the medium and high anxiety group ($p < .05$). For the

environment domain, significant differences were found between the low and high anxiety group ($p < .01$).

Multiple hierarchical regression analyses were conducted to ascertain whether within a clinical group of older adults, anxiety severity independently contributed towards attitudes towards ageing and QOL scores. As before, data met assumptions for conducting multiple regression. Depression scores were relatively highly correlated with anxiety scores ($r = .64$, $p < .01$), however tolerance statistics were still within the acceptable range. All final models were significant ($p < .05$), apart from the social relationships domain of the WHOQOL-BREF. As summarised in Tables 5.13 and 5.14, it was found that severity of anxiety did not independently contribute to scores on attitudes towards ageing and quality of life, apart from for the psychological health domain of the quality of life scale. Table 5.15 provides an overview of the significance of variables in the final models. The standardised beta coefficients indicated that depression scores were significant contributors to attitudes towards ageing, and that physical health factors, anxiety scores, and depression scores were significant contributors of QOL scores.

Table 5.13

Hierarchical Multiple Regression Analysis of Attitudes Towards Ageing Scores

	Psychosocial Loss		Physical Change		Psychological Growth	
	R^2 change	Adjusted R^2	R^2 change	Adjusted R^2	R^2 change	Adjusted R^2
Model 1 (Demographics)	.01	.05	.01	.06	.14	.08
Model 2 (Demographics, physical health)	.21*	.13	.28*	.19	.02	.04
Model 3 (Demographics, physical health, depression)	.25**	.38	.03	.21	.35**	.43
Model 4 (Demographics, physical health, depression, anxiety)	.01	.38	.04	.24	.04	.47

Note. Demographics=gender, age. Physical health=number of reported health problems, subjective satisfaction with health. For gender, 1=male, 2=female.
* $p < .05$ ** $p < .01$.

Table 5.14

Hierarchical Multiple Regression Analysis of Quality of Life Scores

	Physical health		Psychological health		Social relationships		Environment	
	R^2 change	Adjusted R^2	R^2 change	Adjusted R^2	R^2 change	Adjusted R^2	R^2 change	Adjusted R^2
Model 1 (Demographics)	.02	.04	<.01	.07	.02	.03	<.01	.06
Model 2 (Demographics, physical health)	.65**	.62	.37**	.28	.02	.07	.48**	.42
Model 3 (Demographics, physical health, depression)	.04*	.67	.37**	.71	.10	.01	.05	.47
Model 4 (Demographics, physical health, depression, anxiety)	.01	.67	.06**	.77	.01	.01	<.01	.45

Note. Demographics=gender, age. Physical health=number of reported health problems, subjective satisfaction with health. For gender, 1=male, 2=female.
* $p < .05$ ** $p < .01$.

Table 5.15

Standardised Beta Coefficients for Final Models

	Attitudes Towards Ageing			Quality of Life			
	PL	PC	PG	Phys. Health	Psych. Health	Social Relations.	Environment
Gender	.03	.01	-.44	<.01	-.05	-.02	<.01
Age	-.03	-.08	-.19	-.11	-.03	.09	-.02
No. Health problems	.04	-.33	.09	-.38**	.02	-.06	-.21
Satisfaction with health	-.04	.10	-.29	.35*	.12	-.20	.37
Depression	.56*	-.04	-.58*	-.20	-.59**	-.31	-.26
Anxiety	.13	-.28	-.28	-.11	-.33*	-.14	-.04

Note. PL= Psychosocial Loss. PC=Physical Change. PG= Psychological Growth. Phys. Health= Physical Health. Psych. Health=Psychological Health. Social Relations. = Social Relationships. * $p < .05$ ** $p < .01$.

5.6.2 Attitudes towards ageing and quality of life. Variables were not normally distributed and therefore Spearman's rank was used to assess associations. Results indicated that there were significant associations between attitudes towards ageing scores and QOL scores within the clinically anxious sample, with the exception of the social relationships domain. Table 5.16 provides an overview of the results of the correlational analyses.

Table 5.16

Associations Between Attitudes Towards Ageing and Quality of Life

WHOQOL-BREF	Psychosocial Loss	Physical Change	Psychological Growth
Physical health	-.50**	.73**	.34
Psychological health	-.56**	.30	.61**
Social relationships	-.23	.05	.36
Environment	-.52**	.71**	.26

Note. ** $p < .01$.

5.6.3. Mediating variables. Results based on 5000 bootstrapped samples found that satisfaction with health was not a significant mediator of the relationship between anxiety and attitudes towards ageing, for psychosocial loss (LL=-.16, UP=-.37) or physical change (LL=-.55, UP=.03). Depression was not a significant mediator of the relationship between anxiety and physical change (LL=-.34, UP=.28), however, it was a significant mediator of the relationship between anxiety and psychosocial loss (LL=.08, UP=.92). The direct effect of anxiety on psychosocial loss was not significant ($p=.26$) when depression was controlled for. This indicates that within a clinically anxious sample, it is likely that anxiety impacts on negative attitudes regarding psychosocial loss via its impact on depressive symptoms.

Chapter Six: Discussion and Critical Analysis

This thesis primarily aimed to explore how attitudes towards ageing relate to anxiety and depression among older adults. First, a systematic review of the literature on depression and attitudes towards ageing among older adults was completed. The review identified that anxiety among older adults has been less well studied in relation to attitudes towards ageing, and the empirical paper aimed to address this, whilst also investigating Quality of Life (QOL), another construct understudied among older adults with anxiety. It was noted that previous studies investigating mood in relation to attitudes towards ageing have predominately been conducted in community settings, therefore for the empirical study the author recruited from mental health services.

This chapter provides an overview of the findings of the whole thesis and provides an account of how findings fit within current theories and models. The chapter also reflects on the implications of the findings, and the strengths and limitations of the thesis.

6.1 Systematic Review Findings

The first chapter of the thesis was a systematic review which aimed to synthesise the literature on depression and attitudes towards ageing among adults aged 60 and over. Overall, the review indicated that there is convincing evidence that negative attitudes towards ageing are related to more depressive symptoms among older adults, as this was found in 12 of the 13 studies reviewed. The only study not to document a significant relationship between attitudes towards ageing and depression (Luchesi et al., 2016) used carers as participants and used the Neri Scale to Assess Attitudes towards the Elderly (Neri, 1997), either of these factors could be related to the non-significant results. When multiple domains of attitudes towards ageing were assessed using the Attitudes towards Ageing Questionnaire (AAQ; Laidlaw, Power, & Schmidt, 2007), psychosocial loss was most commonly found to be related to depression. Overall, these findings suggest that negative attitudes towards ageing are related to depression among older adults, and

attitudes regarding psychosocial loss are most significantly related to depressive symptoms.

6.2 Empirical Study Findings

The empirical paper primarily aimed to compare attitudes towards ageing and QOL between a clinically anxious sample of older adults and a non-clinical sample. The results from the empirical study indicated that the clinical group of anxious older adults had more negative attitudes towards ageing than the non-clinical group. The findings from the empirical study are well aligned with the findings from previous studies which have investigated anxiety and attitudes towards ageing among older adults (Bryant et al., 2012; Laidlaw, Kishita, Shenkin, & Power, 2018; Shenkin et al., 2014). The main difference between this study and previous studies, is that this one used a clinical population of older adults, whereas previous studies have looked at anxiety within a community population. This provides support that a relationship between attitudes towards ageing and anxiety exists in clinical and non-clinical settings.

It was also found that QOL was poorer among older adults with clinical anxiety compared to older adults in the non-clinical population. This study used the WHOQOL-BREF (The WHOQOL Group, 1998a) to measure QOL. There are no universally used cut off scores for this measure, but one study has indicated that a score of ≤ 60 indicates a poor QOL (Silva, Soares, Santos, & Silva, 2014). Within the current study, the clinical group of older adults scored below 60 on average for all domains of the QOL measure, apart from for the environment domain, whereas the non-clinical group scored above 60 on average for all domains. This would further support the suggestion that older adults with clinical anxiety have an impaired QOL overall.

The empirical study aimed to further understand whether having clinical anxiety was a unique predictor of attitudes towards ageing and QOL. It was found that when variables such as demographics, physical health, and depression were accounted for,

whether an older adult was clinically anxious or not, did not further contribute to the variance in attitudes towards ageing and QOL scores, apart from on the psychological health domain of the WHOQOL-BREF. These results indicate that the impact of clinical anxiety on attitudes towards ageing and QOL is not independent of the influence of other factors.

The factors that this study included in the regression models, other than clinical anxiety, have also been investigated previously in relation to attitudes towards ageing and QOL. In previous research it has been found that age and gender relate to beliefs about ageing (Levy & Myers, 2005). Within this study age and gender added little variance to scores on domains of attitudes towards ageing and QOL. Previous research has shown that those with chronic medical conditions are more likely to have more negative attitudes towards ageing (Lucas-Carrasco, Laidlaw, Gomez-Benito & Power, 2013), and that poor subjective health is linked to more negative attitudes and a poorer QOL among older adults (Laidlaw et al., 2018; Low, Molzahn, & Schopflocher, 2013). These findings are supported in this study as when factors related to physical health were added to models, this significantly added to the variance in attitudes towards ageing and QOL scores. Also, it was found that once all of these factors were accounted for, depressed affect significantly contributed to more negative attitudes towards ageing and QOL, which mirrors previous findings (Chachamovich, Fleck, Laidlaw, & Power, 2008; Sivertsen, Bjørkløf, Engedal, Selbæk, & Helvik, 2015).

The final aim of the empirical study was to use Receiver Operating Characteristic (ROC) curves to create cut off scores on the AAQ, which would distinguish a clinical sample of older adults from a non-clinical sample. Cut off scores were reported for the psychosocial loss domain and the physical change domain of the AAQ, indicating that scores on the AAQ can provide valuable clinical information. The psychosocial loss scores were the most accurate for determining whether someone was from the clinically anxious

sample of older adults or the non-clinical sample. Scores on the psychological growth domain of the AAQ were not accurate at distinguishing the clinical group of older adults from the non-clinical group.

6.3 Additional Analyses

Further exploratory analyses were conducted within the clinical sample of anxious older adults. First analyses were conducted to establish whether the main results would be replicated when looking at anxiety severity within the whole clinical sample. It was found that attitudes towards ageing and QOL were significantly poorer among older adults with higher anxiety scores compared to those with lower levels of anxiety. This suggests that clinicians may need to take note of not just whether an older adult has anxiety or not, but the severity of this anxiety. Caution must be taken when making conclusions from this analysis, however, as creating groups based on anxiety scores was likely to have reduced power and sensitivity.

Within the clinical sample, hierarchical regression analyses were also applied to each domain of the WHOQOL-BREF and AAQ. Results were similar to the main analyses, with findings showing that anxiety scores did not add additional variance to the QOL or attitudes towards ageing domains, apart from for the psychological health domain of the WHOQOL-BREF. When beta statistics were examined, depression and anxiety were often better predictors of attitudes towards ageing and QOL than health and demographic factors. This is consistent with previous research which has shown that when physical health is controlled for, negative affect is still significantly related to attitudes towards ageing (Bai, Lai, & Guo, 2016; Lai & Tong, 2012). For the attitudes towards ageing domains, depression scores were a better predictor of psychosocial loss and psychological growth, whereas anxiety scores were a better predictor of attitudes regarding physical change. For QOL, depression scores were larger contributors than anxiety scores for all domains, which is in contrast to previous research which has indicated that anxiety is more

influential of older adults' QOL than depression within a psychiatric sample (Sarma & Bryne, 2014). It should be noted, however, that there was a correlation between anxiety and depression scores, which complicates the interpretation of their unique contribution (Courville & Thompson, 2001) and could have led to the underestimation of the contribution of anxiety. Moreover, given that depression and anxiety frequently co-exist among older adults within clinical settings (Bryant, Jackson, & Ames, 2008), trying to partial out their separate influence is not very meaningful.

In another exploratory analysis, QOL was investigated in relation to attitudes towards ageing in the clinically anxious sample. It was found that all attitudes towards ageing domains correlated with at least one domain of QOL. This is consistent with previous research which has been conducted in non-clinical settings, which has found that among older adults negative attitudes towards ageing are associated with a poorer QOL (Low et al., 2013; Top, Eris, & Kabalcioglu, 2013).

Further exploratory tests investigated mediators of the relationship between anxiety and attitudes towards ageing among the clinically anxious sample. It was found that depression was a mediator of the relationship between anxiety and the psychosocial loss domain of attitudes towards ageing within a clinically anxious sample. Thus, results suggest that when an older adult has raised anxiety levels, this may then lead to higher levels of depression, which in turn relates to negative attitudes towards ageing regarding psychosocial loss. Although this exact relationship has not been investigated before within a clinically anxious population, it fits with results from other studies. The significant relationship between anxiety and depression among older adults in the literature is well established (Wolitzky-Taylor, Castriotta, & Lenze, 2010) and longitudinal studies have shown that anxiety predicts depressive symptoms (Potvin et al., 2013), rather than the relationship being the other way around (Wetherell, Gatz, & Pedersen, 2001). Also, as previously indicated, there is also strong evidence to support a relationship between

depression and psychosocial loss (Bryant et al., 2012; Chachamovich et al., 2008; Shenkin, Laidlaw, et al., 2014).

6.4 Synthesis of Findings

The thesis has shown that overall, attitudes towards ageing are synonymous with negative affect among older adults, with those older adults who are anxious and depressed being more likely to hold negative attitudes towards ageing. Furthermore, there is evidence that regardless of whether an older adult has clinical levels of anxiety, or depression (Chachamovich et al., 2008), an increase in anxiety or depression levels is related to an increase in negative attitudes towards ageing (Chachamovich et al., 2008).

The thesis has also shown that anxiety itself is not a unique predictor of attitudes towards ageing when factors such as physical health and depression are taken account of. There could be numerous reasons why anxiety is not a unique predictor of attitudes towards ageing once depression has been accounted for. One reason may be that both anxiety and depression share similar processes which are impacting on attitudes towards ageing in the same way. For example 'catastrophising' (Martin & Dahlen, 2005) and rumination (McLaughlin & Nolen-Hoeksema, 2011) are both involved in depression and anxiety, and these processes could be contributing towards holding more negative attitudes towards ageing among older adults. Another explanation could be that anxiety is only related to attitudes towards ageing because it is related to higher depression levels, which are influencing attitudes towards ageing. The mediation analysis would support this hypothesis for the psychosocial loss domain, as depression was found to mediate the relationship between anxiety and psychosocial loss. However, depression was not found to be a mediator of the other domains, and the additional analyses conducted on the clinical sample indicate that both depression and anxiety contribute to more negative attitudes towards ageing. It is most likely therefore, that both anxiety and depression are important in understanding attitudes towards ageing among older adults.

Results from studies examined in the review, and those of the empirical paper have provided consistent evidence that attitudes regarding psychosocial loss are related to depression and anxiety among older adults. There also appears to be evidence that attitudes regarding physical change are related to anxiety and depression. The relationship between mood and psychological growth, on the other hand, seems to be least consistent. The empirical study and several studies included in the systematic review indicated that there is not a relationship between depression and psychological growth. Nevertheless, there are some studies which have documented a significant relationship with depression or anxiety (Bryant et al., 2012; Chachamovich et al., 2008; Kalfoss, Low, & Molzahn, 2010).

The psychological growth domain reflects wisdom (Laidlaw, Power, & Schmidt, 2007), and the inconsistency in findings for this domain may suggest that these attitudes are less impacted by mental health difficulties than the other domains. Another possible reason for results being less consistent for the psychological growth domain, could be that the psychometric properties of it are not robust, as one study has shown that the internal reliability of the scale is below the acceptable range (Lucas-Carrasco et al., 2013). However, this does not fit with the findings of Laidlaw and colleagues (2007) who found the psychometric properties for all three domains were good within a large international sample. Other academics have suggested that this domain is different as it has questions which surround generativity and may not represent all older adults (Chachamovich et al., 2008).

The findings of this thesis, that having clinical anxiety is related to an impaired quality of life on all domains of the WHOQOL-BREF, and that those older adults with more severe anxiety have a poorer QOL, provide support that anxiety is related to an impaired QOL among older adults. As noted, however, anxiety did not appear to be an independent predictor of QOL, other than for the psychological health domain, when other factors were taken account of. The empirical paper showed that symptoms of depression

also predicted a worse QOL, thus supporting conclusions elsewhere in the literature that having psychiatric difficulties in general predicts an impaired QOL (Rapaport, Clary, Fayyad, & Endicott, 2005; Sivertsen et al., 2015).

Overall, therefore, the thesis has shown that negative affect is related to more negative attitudes towards ageing and a worse QOL. Nevertheless, it has also indicated that there are factors other than negative affect which are related to attitudes towards ageing and QOL. Furthermore, as no models could explain all the variance in attitudes towards ageing and QOL scores, it is likely that there are numerous other factors which are important determiners of these variables which were not measured in this study. This is particularly the case for the social relationships domain and the environment domain of the WHOQOL-BREF, in which the variables measured in this study only modestly predicted scores for. It may be that these variables are related to more circumstantial factors, for example social class is related to an older adults' social and environmental QOL (Brett et al., 2012) and a person's proximity to open space is found to be important in determining QOL (Sugiyama, Thompson, & Alves, 2009).

The findings regarding the correlation between attitudes towards ageing and QOL within a clinically anxious sample may be best understood in the context of the other findings of this thesis. It may be that attitudes towards ageing and QOL correlate only because of their shared relationship with depression and anxiety. It is also possible, though, that they relate to each other independently of negative affect. For example, when an older adult has more negative attitudes towards ageing, this could mean that they change their behaviour in a way that reduces their QOL. It could also be that when an older adult perceives to have a poor QOL, this is interpreted as a part of ageing, and thus contributes to negative attitudes towards ageing. It has also been suggested that the concepts of attitudes towards ageing and QOL overlap in many ways (Chachamovich et al., 2008), therefore this could be an additional reason why they are found to relate to each other.

6.5 Theoretical Relevance

The findings of this thesis provide support to, and can be explained by, various theories. Those theories which have most relevance to the current thesis have been described below in relation to the findings.

6.5.1 The stereotype embodiment theory. Levy's stereotype embodiment theory (Levy, 2009) is a pivotal theory in the attitudes towards ageing literature. As previously stated, Levy (2009) proposes that from a young age negative stereotypes of ageing are internalised and become self-stereotypes later on in life. In line with this theory, both the systematic review and the empirical paper documented the existence of negative attitudes towards ageing among older adults. However, the findings also indicated that attitudes towards ageing were related to anxiety and depression. This would suggest that when understanding attitudes towards ageing, that mental health must also be considered, which is not explicitly outlined by the stereotype embodiment theory.

6.5.2 The externalisation hypothesis. The externalisation hypothesis, as termed by Brubaker and Powers (1976), also has relevance to the findings of this thesis. It suggests that when people are older, they project their view of themselves onto older adults, and thus negative attitudes towards ageing will be apparent if an older person has a negative self-concept of themselves (Rothermund & Brandstädter, 2003). Results from this thesis would lend support to this hypothesis. Given the findings that those with late-life anxiety or depression are more likely to have negative attitudes towards ageing, and that it has been documented that those with poor psychological wellbeing are more likely to have low self-esteem (Paradise & Kernis, 2002), it is plausible that older adults with anxiety and depression have a negative view of themselves which is influencing their view on ageing.

6.5.3 Social comparison theory. The social comparison theory can be used to make sense of why there may not be a relationship between depression and attitudes towards ageing among caregivers, as found in the systematic review. Social comparison

theory suggests that stereotypes are used to make self-assessments (Festinger, 1954). It is stipulated that negative age stereotypes may provide a reference for self-enhancing downward comparisons (Rothermund & Brandtstädter, 2003). Evidence has been provided that as people get older, they may compare themselves favourably to others their age, and this is particularly likely under conditions of stress (Heckhausen & Krueger, 1993). The findings from the systematic review indicated that depression may not be related to negative attitudes towards ageing when studied among caregivers. It is possible that, in line with what Heckhausen and Krueger (1993) suggest, under stress caregivers are comparing themselves favourably to those they are caring for, resulting in more positive attitudes about their own ageing.

6.5.4 de Leval's (1999) theory of depression and quality of life. The findings from the regression analysis indicated that depressive symptoms were a significant contributor to QOL scores. The way in which depression and quality of life may be related to each other was first theorised by de Leval (1999). According to this theory, depression and QOL are part of a continuum of time. Depression is conceptualised as when there is a gap between peoples past and their present 'ill being', whereas QOL is proposed to be the gap between a persons present actual experiences and their future aspirations (Moore, Höfer, McGee, & Ring, 2005). When someone is depressed, this experience is thought to widen the gap between their present and their aspired future, which reduces their perceived QOL (Moore et al., 2005). This theory could help explain why depressed symptoms were related to a poorer QOL in this study. Although the theory has not been applied to other mental health difficulties, given the suggestion that a persons affect state is the basis for how satisfied they are with their life (Moore et al., 2005), it would also be logical that when people are anxious, that this also widens their gap between their present and their aspired future, and could thus also reduce their perceived QOL.

6.5.5 The cognitive model of emotional disorders. The cognitive theory of anxiety and depression is useful to refer to when interpreting the results of this thesis. Beck's cognitive model of emotional disorders suggests that people with depression and anxiety have negative schemas about the self, the world, and the future (Clark & Beck, 2010). It is proposed that depression and anxiety each have their own cognitive profile, known as the cognitive specificity hypothesis (Beck, 1991). Whilst depression is related to loss and deprivation, anxiety is related to danger and threat (Beck, 1991). In line with the diathesis-stress framework, negative life events which match with one's schema can make someone more vulnerable to depression or anxiety, and depression and anxiety can then dominate the information processing system (Clarke & Beck, 2010).

The established linkages reported between negative attitudes such as 'old age is a time of loss' and depression and anxiety, supports the notion that negative thoughts are congruent with negative affect. Also, the cognitive profiles of depression and anxiety may help to explain results. The psychosocial loss domain may have been most related to depression, among studies which looked at separate domains of attitudes, as it is directly tapping into cognitions around loss. This may also help explain why depression only mediated the relation between anxiety and psychosocial loss, and not any other domain. When examining the unique contribution of depression and anxiety scores to attitudes towards ageing in the clinical sample, physical change scores related to anxiety more so than depression. This could be because questions related to physical changes and health were tapping into threat cognitions more so than loss cognitions.

6.5.6 Laidlaw's (2015) model of attitudes towards ageing. Laidlaw's (2015) model of attitudes towards ageing encompasses many of the theories already mentioned, and seems to have the most relevance to the findings of this thesis. Laidlaw's (2015) model would suggest that those with negative affect, including anxiety and depression, will have more negative attitudes towards ageing. Findings of this thesis, that attitudes towards

ageing are more negative among those with anxiety or depression, thus support the model and indicate that attitudes are mood-state dependent. Also, the findings that numerous factors, including subjective health, impact on attitudes towards ageing, supports the model with its focus on cognitions, emotions, physicality, and behaviour. This thesis has not been able to establish the direction of the relationship between negative affect and attitudes towards ageing, but when results from numerous studies examined in the review, as well as the empirical paper, are considered alongside Laidlaw's (2015) theory, they would suggest a bi-directional relationship exists between mental health and negative attitudes towards ageing.

6.6 Clinical Implications

The results of this thesis have important clinical implications. The findings that older adults with anxiety or depression are more likely to have negative attitudes towards ageing, suggests that routinely assessing attitudes towards ageing within this population is important. As the thesis indicated that those who score higher on depression or anxiety measures may have more negative attitudes towards ageing, measures of mood could be used to signify whether attitudes towards ageing may be worth exploring. When assessing attitudes towards ageing, the AAQ seems a suitable measure to use as it has been validated internationally and provides detail on different domains of attitudes towards ageing (Laidlaw et al., 2007). Within the empirical study, the psychosocial loss domain and the physical change domain of the AAQ were able to discriminate between those older adults from the clinical sample and those from the non-clinical sample, thus demonstrating that these domains provide further information on the likelihood an older adult is experiencing negative affect. Given that the study found different results for different domains of attitudes towards ageing, it is important that the domains are assessed separately rather than calculating a total score. Assessing such attitudes as early on as possible may be

important as negative attitudes towards ageing could prevent people from seeking help (Laidlaw, 2010).

Once assessed, it may be that a person's attitude towards ageing could be incorporated into a psychological formulation developed for understanding their current difficulties. Laidlaw (2015) has developed a comprehensive formulation template which can be used for older people. This formulation draws on the cognitive-behavioural model and acknowledges the role of the socio-cultural context, including beliefs about ageing. Discussing attitudes towards ageing with clients early on and collaboratively including it in their formulation could be important because it may act as a barrier to treatment if they think that they are expected to have difficulties as they age.

As attitudes towards ageing are mood-state dependent, it may be that by targeting anxiety and depression, attitudes towards ageing will improve. Cognitive Behavioural Therapy (CBT) is one of the recommended psychological treatments for anxiety (NICE, 2011) and depression (NICE, 2016). Studies show CBT to be effective when applied to older adults with late life anxiety (Hendriks, Oude Voshaar, Keijsers, Hoogduin, & van Balkom, 2008; Schuurmans & Van Balkom, 2011) and depression (Pinquart, Duberstein, & Lyness, 2007). However, it has been indicated that CBT is not yet as effective as it could be among older adults (Gorenstein & Papp, 2007) and it has been suggested that it needs to be made age appropriate and in line with the gerontology literature (Laidlaw, 2013). Given this, and that negative attitudes towards ageing may serve to maintain negative affect, it may also be helpful to directly address attitudes towards ageing within therapy, perhaps by challenging these cognitions (Laidlaw, 2010).

The results from the empirical paper and the systematic review indicate that psychosocial loss has the most significant relationship with anxiety and depression, whereas psychological growth may have less of a significant relationship. By using a measure such as the AAQ, this allows clinicians to identify an older adults' idiosyncratic

profile regarding attitudes towards ageing, and to target interventions accordingly. If clinicians are to find that clients hold more positive attitudes relating to psychological growth, but have negative attitudes in relation to psychosocial loss, it could be that the more positive psychological growth attitudes are harnessed and utilised as a vehicle for changing their more negative attitudes. This is in line with Laidlaw's (2010) suggestion that wisdom enhancement could be a crucial factor to target in psychological therapy with older adults.

The findings surrounding QOL also need to be considered when working with older adults in mental health settings. As QOL was significantly poorer among those with clinical anxiety compared to a non-clinical sample, and QOL predicts mortality (Otero-Rodríguez et al., 2010), QOL needs to be assessed and addressed within clinical settings. It may be helpful if the WHOQOL-BREF was used within mental health assessments, as this has been validated among older adults and is quick to administer (The WHOQOL Group, 1998a). Like the AAQ, the domains on the WHOQOL-BREF produced different findings, therefore it is important that the different domains are considered separately. As with attitudes towards ageing, QOL may be improved by focusing on negative affect alone, as it has been suggested that targeting states like depression will help improve QOL (Moore et al., 2005). However, clinicians may also need to directly address QOL, as has been suggested elsewhere in the literature (Bourland et al., 2000; Rapaport et al., 2005).

Quality of life is multi-dimensional, and as such there are various psychosocial interventions which could be used to improve quality of life such as physical therapy, exercise programs, life review groups, gardening groups and dental treatment (Van Malderen, Mets, & Gorus, 2013). When targeting QOL, it may be helpful to consider what domains are poorest, and to work on these. If people have a poor QOL related to their psychological health, then targeting negative affect alone may be sufficient. If their physical health related QOL is poor, then physical interventions may be appropriate. This

study showed that the social relationships and environment domain of the WHOQOL-BREF are less well predicted by physical and psychological factors, therefore it may be that these areas need to be worked on differently. These aspects of quality of life may be more related to situational circumstances, as those with poor socioeconomic characteristics (Breeze et al., 2005) and those living in poverty (Smith, Sim, Scharf, & Phillipson, 2004) are found to be more likely to have a poor QOL. For these older adults, social care interventions may be more appropriate, or interventions aimed at a community level may be helpful, as these are found to be effective at improving QOL among older adults (Fisher & Fuzhong, 2004).

Finally, given that physical health factors were also found to be related to attitudes towards ageing and QOL, it may be necessary to also assess and address these within mental health settings. This study showed that it may be important to assess both objective health, as well as subjective health, as people's satisfaction with their health was often more important in predicting their QOL and attitudes towards ageing than their objective health. Furthermore, if a person's subjective health is not consistent with their objective health, it may be that CBT could be used to challenge an older adults' perception of their health.

6.7 Societal Implications.

As well as findings having clinical implications, they also have wider implications for society. Given the reported findings that depression and anxiety are related to negative attitudes towards ageing, and this is hypothesised to be related to the activation of the internalised negative age stereotype (Laidlaw, 2015), it would be logical to target the negative stereotype of ageing society holds. One way to do this could be to start targeting the negative stereotype of older adults which is apparent in the media (Levy et al., 2014; Martin, Williams, & O'Neill, 2009). Indeed the policy framework on active ageing has

emphasised the importance of the media promoting positive images of ageing and recognising the participation of older adults in society (World Health Organisation, 2002).

Given that negative age stereotypes are proposed to be internalised from a young age (Levy, 2009) it may also be beneficial to target young peoples' attitudes towards ageing, for example by providing realistic information regarding older adults in schools. Additionally, encouraging younger people and older people to interact on a regular basis could help to shift the societal perception of older adults. In support of this, it has been shown that contact with stigmatised groups can reduce prejudice by enhancing knowledge about the outgroup, reducing anxiety about contact, and increasing empathy and perspective taking (Pettigrew & Tropp, 2008). Furthermore, such interventions could be helpful for older adults themselves. In line with this, a study which looked at the impact of an intergenerational school program found that it was related to improved mental health among older adults (Murayama et al., 2015).

6.8 Strengths and Weaknesses

It is important that this thesis is interpreted in light of its strengths and limitations.

6.8.1 Sample. A strength of the empirical study, is that unlike previous studies in this area, participants were recruited from mental health services, making results more clinically meaningful. It is hoped that due to this, the clinical implications stemming from this research can be applied directly by those working with older adults in mental health settings. Another strength of the clinical sample, is that participants were screened for clinical anxiety with two methods: clinician judgement and self-report. It was felt important that clinicians identify people for the study because clinicians will be the ones applying the findings, and because older adults with anxiety are found to have poor insight into their own symptoms (Lenze & Wetherell, 2011). Using an anxiety self-report measure to screen people out after initial clinician identification was also deemed necessary as it ensured that participants were anxious when filling in questionnaires. Five people were

excluded from the main analyses due to scoring below the determined anxiety threshold. There could be many reasons for this, for example it may be that clinicians misjudged the extent of a person's anxiety, or it may be that their anxiety improved in the time between the research being introduced to them and them filling in questionnaires.

There are also limitations with regards to the clinical and non-clinical sample. As previously stated, the non-clinical sample was collected from another research study, which did not measure anxiety specifically (Laidlaw et al., 2007). The utilisation of this sample was deemed acceptable given the budget and time limitations of the doctoral thesis. Also, the author was able to screen out those who had reported a psychiatric condition and scored within the clinical threshold for depression. However, this is still possibly the largest weakness of this study, as it is not known the extent to which this sample could have had symptoms of anxiety. Furthermore, if this sample had completed an anxiety measure, anxiety could have been treated as a continuous variable and it would have likely improved the main regression analyses and the ROC analyses. A limitation of the samples included in the systematic review is that they were mainly drawn from community populations, meaning that results lacked clinical relevance.

6.8.2 Sample size. A strength of the empirical study was that the overall sample size ($n=109$) was adequate for addressing the primary study aims and was able to detect a medium effect size. The number of the participants obtained from a clinical setting particularly is a relative strength of the study. The only known published study which has utilised a clinical population when looking at negative affect in relation to attitudes towards ageing, was one conducted by Law, Laidlaw, and Peck (2010). In their study they recruited older adults accessing psychiatric services who scored above the threshold on a depression measure; they managed to recruit 19 people. Comparatively, therefore, the sample size achieved for the clinical sample in this study was relatively good. The sample

sizes of studies included in the systematic review is also a strength as they were relatively large, and thus they were likely to have had adequate power.

A limitation of the empirical study is that the group sizes were not equal, with approximately double the number of people being within the non-clinical sample compared to the clinical sample. The disparity in sample sizes between the two groups may have been in part responsible for the unequal variances found. It is likely that the disparity in sample sizes also made the ROC analysis less accurate, as ideally equal size groups would have been used for this. It also meant that the additional exploratory analyses conducted within the clinical sample only were underpowered. For example, the Kruskal Wallis test, with a power of .80, requires at least 66 people in total. The regression analysis, conducted within the clinical sample, was also underpowered, as for such an analysis at least 98 people are required. To conduct a correlation analyses with power of .80, at least 64 people are needed. These additional analyses therefore must be interpreted tentatively.

6.8.3 Representativeness. There are limitations with regards to the representativeness of the empirical study. The community sample was from one geographical location, and the clinical sample was from one region, therefore findings may not be generalisable to the whole population. As indicated in the demographic information, different ethnicities were not represented and there were more females in both samples than males; this means that the samples used in this study are not completely representative of the target population. Additionally, both the empirical paper and many of the papers included in the systematic review used opportunity sampling and recruited people who opted to take part. It is well documented that those who agree to participate in studies may have different characteristics to those who do not opt in to do such studies (Hammer, du Prel, & Blettner, 2009). Unfortunately, it was not feasible for a response rate to be calculated in the empirical study to understand how many people were offered to take part

but did not, and whether these people had different characteristics to those who did take part.

It is also noted that the mean Geriatric Anxiety Inventory (GAI; Pachana, Bryna, Siddle, & Koloski, 2007) score of the clinically anxious group in this study ($M=15.03$) is higher than the mean GAI scores found in other research conducted with clinically anxious older adults. For example, Pachana and colleagues (2007) reported a mean GAI score of 10.6 among older adults with anxiety disorders, and in a similar study Johnco, Knight, Tadic, and Wuthrich (2015) reported a mean GAI score of 11.1. This indicates that those who took part in this study may have had more severe anxiety compared to the average anxious older adult population. Additionally, compared to previous research within an older adult mental health setting (Sarma & Byrne, 2014), the clinical sample in this study scored higher on the Geriatric Depression Scale (GDS; Yesavage & Sheitkh, 1986) short form and lower on subjective health and all scales of the WHOQOL-BREF. One possible reason for the current sample scoring higher on mood measures and lower on QOL measures than has been found in previous studies which have utilised clinical samples, could be because many participants in this study were recruited from secondary mental health services for older adults, where the threshold for meeting service criteria is continually raising.

6.8.4 Measures. A strength of the empirical study is that it used measures with good psychometric properties which are well suited to the older adult population. It was deemed important that measures relating to mood were ones which have been specifically designed for older adults as it is reported that somatic items in some mood measures do not accurately reflect the somatic nature of older adults mood disorders, including anxiety (Pachana et al., 2007) and depression (Yesavage & Sheikh, 1986).

There are, however, several disadvantages of the measures used in the empirical study which are important to be aware of. A disadvantage of the AAQ, is that there are no

national norms to compare scores to, and no threshold as to what constitutes ‘negative attitudes’. Therefore, although it can be concluded that clinically anxious older adults accessing mental health services have more negative attitudes towards ageing than those from a non-clinical population, it cannot be concluded specifically how negative these attitudes are.

A weakness of using the GAI is that there are many conflicting findings about the optimal cut off scores to use, with studies evidencing the use of 3 (Cheung, Patrick, Sullivan, & Cooray, 2012) to 9 (Pachana et al., 2007) as being appropriate cut off scores for any type of anxiety disorder. These findings suggest the GAI may not be consistent with clinical judgements of anxiety. The inconsistency in findings around cut off scores made it difficult to select an appropriate one. For various reasons, as outlined in the methodology chapter, a score of 3 and above was deemed suitable for this study. It is acknowledged that this score is lower than the threshold originally recommended by Pachana and colleagues (2007), and therefore may have reduced the specificity of the measure. Nevertheless, primary statistical analyses were repeated with only those from the clinical sample who scored 9 or more on the GAI, and results overall were very similar indicating that even if a higher threshold was used this would not have changed overall results. Also, as the average GAI score for the clinical sample was well above 9, this would support that the sample had significant levels of anxiety.

This study could have been improved by adding additional measures into the main empirical study. A questionnaire on personality could have potentially added to the findings, as personality traits are a predictor of attitudes towards ageing (Shenkin, Laidlaw, et al., 2014) and QOL among older adults (Kempen, Jelicic, & Ormel, 1997) and it could have been insightful to examine whether this was also true within a clinical population. Also shame could have been explored, as older adults with psychiatric problems score

higher on measures of shame, and shame may be partly related to their ageing (Crossley & Rockett, 2005).

In the systematic review, the measures used by some studies were considered a weakness of the overall review. This is because studies which looked at depression in relation to attitudes towards ageing were not consistent in the measure they used. Furthermore, some researchers used non-validated measures to assess attitudes towards ageing. It was also indicated that the psychometric properties of some of the measures used to assess attitudes towards ageing were not within the acceptable range.

6.8.5 Design. The cross-sectional design of the empirical study, and many of the studies included in the systematic review, means that no causal inferences can be made. Although hypotheses can be proposed about the underlying mechanisms in which variables may be related, this thesis is not able to ascertain the temporal relationship between variables.

6.8.6 Methodology. The methodology used throughout this thesis was quantitative in nature. This was because most of the research in this area has utilised a quantitative methodology, and thus in order to complement previous research it was decided that choosing a similar methodology was important. However, it is also a limitation of the research as it means that there continues to be a gap in the literature regarding older adults' personal narrative on attitudes towards ageing. By employing a qualitative design, it may have allowed for a more in-depth exploration of the topic area.

6.9 Further Research

The results of this thesis can be used to guide future research in this area. As the empirical paper was the first to investigate what scores on the AAQ can reliably discriminate a clinically anxious group of older adults from a non-clinical group, future research which focuses on cut off scores on the AAQ would be useful. The empirical study

provided evidence that those older adults with anxiety are likely to have a poorer QOL, but there is still a lack of research studies in this area therefore more are needed. If more studies are conducted exploring anxiety and QOL in community and clinical populations, it would be helpful for a review to be conducted to summarise the outcomes of studies so far. Also, the review indicated that more studies are needed on attitudes towards ageing and depression within a clinical sample.

Future research could also extend or add to the present study in numerous ways. The majority of studies examining the relationship between mental health and attitudes towards ageing, this study included, have used cross-sectional designs. As such designs cannot be used to make causal inferences, future studies would benefit from using longitudinal designs. Studies in the future could further explore how attitudes towards ageing relate to mental health among caregivers, as results from the review indicated that such a relationship may not exist within this population. Also, given the study findings, and the assertion that addressing negative attitudes towards ageing within psychotherapy for older adults may be beneficial (Laidlaw, 2010), in the future studies which compare the effectiveness of therapies which incorporate attitudes towards ageing into treatment for older adults, to those that do not, would be helpful. This would provide further information on the potential added benefit of incorporating attitudes towards ageing into psychological treatment.

Finally, future research in this area which makes use of qualitative methodology is warranted. It does not appear that there are any qualitative studies which have explored the concept of attitudes towards ageing in relation to mood among older adults. This type of research could help understand in more depth why older adults with mental health difficulties may hold more negative attitudes towards ageing. Furthermore, it could help identify those who have mental health difficulties but do not hold negative attitudes towards ageing and would provide an opportunity to explore why this could be.

6.10 Overall Conclusions

To conclude, this thesis has evidenced a robust relationship between depression and attitudes towards ageing among older adults. It has also documented that older adults with clinical anxiety are more likely to have negative attitudes towards ageing and a poorer QOL compared to those older adults in the community. Furthermore, it has shown that attitudes towards ageing and QOL are complex and multifaceted, and anxiety alone is not a unique predictor of these variables when demographics, physical health factors, and depression are accounted for. Together, findings have important implications for the assessment and treatment of both late life depression and anxiety among older adults. Future research in this area needs to focus on using clinical populations, longitudinal designs, and qualitative methodology.

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Appendices

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Appendix A: Systematic review Author Guidelines

Organization and style of research articles

Title page and corresponding author: Each article must have a title page with the title of the article, a list of all authors and their titles, affiliations and addresses. Each author must select only ONE country as their location. Author qualifications should not be listed as these are not published in the journal. The title page should explicitly identify the author to whom correspondence about the study should be addressed and that author's email address, telephone number, fax number and postal address must be clearly stated.

Abstract: Abstracts for original research and reviews should be structured and incorporate 4 sub-headings: background, method(s), results, conclusion(s). Abstracts for protocol only papers should omit the third sub-heading (Results). Abstracts for brief reports and case reports should have no sub-headings. Abstracts should communicate the primary findings and significance of the research. They should not exceed 250 words in length. Abstracts for brief reports should not exceed 200 words.

Key words: Under this heading and beneath the abstract, please list up to 8 words for the purpose of indexing.

Running title: This should contain no more than 50 characters including spaces.

Introduction: Briefly state the relevant background to the study to provide the necessary information and context to enable non-specialists to appreciate the objectives and significance of the paper. Most introductions to articles received for review are too long.

Methods: Materials and procedures should be described in sufficient detail to enable replication. Any statistical procedures used should be outlined and their use should be justified here. Results should not be included in the Method(s) section. If statistical procedures are used, they should be described here in adequate detail. Choice of statistical technique should be justified including some indication of the appropriateness of the data for the technique chosen. Adequacy of the sample size for the statistical technique(s) used must be addressed. If appropriate, a description of the statistical power of the study should be provided. If multiple univariate significant tests are used, probability values (p-values) should be adjusted for multiple comparisons, or alternatively a multivariate test should be considered.

Further advice about statistics and International Psychogeriatrics can be found in the following article: Chibnall, J. (2000) Some basic issues for clinicians concerning things statistical. *International Psychogeriatrics*, 12, 3-7. The following article may also be of assistance to intending contributors: Chibnall J.T. (2004). Statistical audit of original research articles in *International Psychogeriatrics* for the year 2003. *International Psychogeriatrics* 16, 389-396. Both of these are available at the International Psychogeriatrics website by following the link to [Statistical Advice for intending contributors](#). This is also located under the related links icon at the journal homepage (www.cambridge.org/core/journals/international-psychogeriatrics).

Results: This section may contain subheadings. Authors should avoid mixing discussion with the results. Sample sizes should be delineated clearly for all analyses. Some indicator of variability or sampling error should be incorporated into the reporting of statistical results (e.g. standard deviation, standard error of the mean). Wherever possible an indicator of effect size (e.g. Cohens d, η^2 , Cramers V, 95% confidence interval) should be reported

in addition to p values. If multiple univariate statistical tests are used p values should be adjusted for multiple comparisons or alternatively a multivariate test should be used. Obtained statistical values for tests should be reported with degrees of freedom (e.g. t, F, χ^2).

Discussion: Interpretation of the results with respect to the hypothesis(es) and their significance to the field should be discussed here. Results should be interpreted in the light of the size of the effect found and the power of the study to detect differences. Any methodological weaknesses of the study should be outlined, including limitations imposed by sample size. Careful consideration of the conclusion(s) for accuracy and alternative interpretation, and possible conflicts or resolution of conflicts in the field is encouraged. Limited speculation and directions for future research can be included.

Conflict of interest declaration: **This section must be completed.** This should follow the discussion and precede the references. Where there is no conflict of interest perceived to be present the heading **Conflict of Interest** should be included with the single word "none" underneath it. For full details see below.

Description of authors' roles: **This section must be completed if the paper has 2 or more authors.** It should contain a very brief description of the contribution of each author to the research. Their roles in formulating the research question(s), designing the study, carrying it out, analysing the data and writing the article should be made plain. For example: H. Crun designed the study, supervised the data collection and wrote the paper. M. Bannister collected the data and assisted with writing the article. N. Seagoon was responsible for the statistical design of the study and for carrying out the statistical analysis.

Acknowledgements: Any acknowledgements other than conflict of interest declarations in regard to sponsorship should be listed briefly here.

References: For original research **no more than 30** articles that have been published or are in press should be cited, and for brief reports no more than 15 references. If authors believe that more than 30 references are essential to an original research article this must be justified in the cover letter. Unpublished data, personal communications, and manuscripts submitted for publication should be cited in the text and the supporting material submitted with the manuscript. International Psychogeriatrics uses the Harvard referencing system. Within the text of each paper journal articles should be cited in the style (Smith and Jones, 1999). Where an article quoted in the body of the text has more than two authors the term "et al." should be employed, i.e., (Smith et al., 1999). Text citations of multiple articles should be separated by semicolons, i.e., (Smith and Jones, 1999; Smith et al., 1999). At the end of each paper, all cited references should be listed alphabetically in 5 the style indicated below. If the Digital Object Identifier (doi) is known, it should be added to the reference.

For a journal article: **Smith, J., Jones, W. I. and Doe, J. T.** (1996). Psychogeriatrics for pleasure and profit: an expanding field. *International Journal of Unreproducible Results*, 3, 240–242. doi:12.3456/S123456789.

For a book: **Smith, J.A., Brown, P.Q., Jones, H.A. and Robinson, D.V.** (2001). *Acute Confusional States*. New York: Cambridge University Press. For a book chapter. **Park, K., Tiger, B. and Runn, F.** (1999). Psychogeriatrics in context. In G.Verdi and A. Boito, (Eds.) *New Medical Specialties* (pp. 240–260). Cambridge: Cambridge University Press.

Where an article or book chapter has more than six authors only the first author's name should be given followed by the words "*et al.*".

For further examples of reference style see papers in recent issues of International Psychogeriatrics.

Figures/Tables: The manuscript should contain no more than five figures or tables (no more than three figures or tables for brief reports). The copies submitted with the manuscript must be of sufficient quality to enable reviewers to evaluate the data. The journal has a small budget to permit some colour to be printed in some issues but authors wishing to publish figures requiring colour to communicate the data may be required to pay some or all the additional cost.

Figure/Table legends: Each caption should begin with a brief description of the conclusion or observation provided in the figure. These should be submitted as a separate section after the References.

Supplementary material: More detail about the submission of supplementary material is available below – see "Supplementary Material for online only publication" and "Instructions for contributors – Supplementary Material" in subsequent pages of this document.

Word limits: At present International Psychogeriatrics does not have a fixed word limit for articles, other than for brief reports for which the word limit is 1500. Because of limited space, short articles have a higher chance of acceptance than longer ones of an equivalent standard.

Brief Reports

This category allows for articles that are shorter than original research but have the same style and may be used to report new and innovative research and/or significant (hot topics). Unlike letters to the editor, brief reports are peer reviewed. They should be of 1500 words or less and include no more than three figures or tables, no more than 15 references, and have an unstructured abstract of no more than 200 words. They may contain supplementary material which is published online only.

Reviews of the Literature

International Psychogeriatrics will publish at least 1 literature review in each issue. Authors intending to submit a literature review should check recent issues of International Psychogeriatrics to ensure that no review of the topic they propose to discuss has been published in the journal in recent times. Review articles may have up to 50 relevant references. Authors contemplating the submission of a literature review article are welcome to contact the editor to discuss the appropriateness of the topic prior to submission (ipaj-ed@unimelb.edu). Literature reviews should have an abstract.

"For Debate" Articles

From time to time International Psychogeriatrics will publish "For debate" articles on topics of a controversial nature. "For debate" articles will be commissioned by the editor, but readers are welcome to suggest possible topics for debate by contacting the editor at ipaj-ed@unimelb.edu.au. To view recently published debates see journal issues 19(6), 20(2), and 21(2).

Case Reports

Case reports will be accepted for review and considered for publication. They should be of 1200 words or less and should have no more than 10 references. An unstructured abstract of 100 words or less is required. When submitting case reports authors **must** enclose a **letter of consent to publication** from each of the patient(s) described or, if the patient(s) is/are deceased or not competent to consent the authors must indicate that they have obtained such consent from the patient's legal guardian(s). These letters will be kept confidential.

Study protocol articles

Any author contemplating submission of a protocol only paper is advised to contact the editor of IPG via ipaj-ed@unimelb.edu.au to discuss the paper's suitability for submission prior to submitting it.

Qualitative research articles

Authors of qualitative research articles are advised to contact the editor of IPG via ipaj-ed@unimelb.edu.au to discuss the paper's suitability for the journal before submitting online.

Letters to the Editor

Reader's letters will be considered for publication. Letters should be no longer than 1,000 words and should have no more than 5 references. No abstract is required. Usually tables will not be published in the Letters section of the journal, but may be accepted for online publication as supplementary material at the journal website.

Supplementary Material for online only publication

International Psychogeriatrics has the facility to publish unedited figures, tables, appendices, any non-English sections, and other material which is not suitable for inclusion in papers published in the paper copy of the journal as supplementary online material attached to the electronic version of individual papers at <http://journals.cambridge.org/ipg>. This renders such supplementary material accessible without clogging the journal with materials that will be of interest to only a small minority of readers. If submitting such supplementary material please follow the instructions below. If referring to supplementary material in a paper the following form of words should be used "see table S1/figure S1/appendix A1 published as supplementary material online attached to the electronic version of this paper at <http://journals.cambridge.org/ipg>".

Conflict of Interest

Conflict of interest occurs when authors have interests that **might** influence their judgement inappropriately, regardless of whether that judgement is influenced inappropriately or not. International Psychogeriatrics aims to conform to the policies of the World Association of Medical Editors in regard to conflict of interest. For full details please see the website <http://www.wame.org/wamestmt.htm#fundres>. To this end all authors must disclose potential conflicts of interest so that others may be aware of their possible effects. Specifically, under the heading conflict of interest, all articles must detail:

The source(s) of financial support for the research (if none, write "none").

A description of any sponsor's role(s) in the research (e.g., formulation of research question(s), choice of study design, data collection, data analysis and decision to publish).

Information about any financial relationship between any author and any organization with a vested interest in the conduct and reporting of the study. For example, in a study on the effects of a drug made by Bigpharma which directly competes with another drug made by Megadrug a declaration might say "Jane Smith has received research support and speaker's honoraria from Bigpharma and has received financial assistance from Megadrug to enable her attend conferences."

Instructions for contributors – Supplementary Material

There will normally be one of the following reasons for you to be supplying supplementary material to accompany the online version of your article:

1. You wish to link to additional information which due to its nature does not lend itself to print media (examples- full data sets, movie or sounds files etc...)
2. The Editor of the Journal has requested that you extract certain information from the original article in order to allow for space constraints of the print version.
3. You have requested additional material to be available to accompany an article that does not normally allow such material to be included (examples – sections not written in the English language, tables to accompany a correspondence article).

N.B. Please note that no copyediting or quality assurance measures will be undertaken on supplementary material (other than to ensure that the file is intact). The authors therefore warrant that the supplementary material that they submit is in a suitable format for publication in this manner. The material shall be published online in exactly the form that it is supplied.

Submission

Please follow the following instructions to supply supplementary material to accompany the online version of your article:

1. Each supplementary file must be supplied as a separate file. Do not supply this material as part of the file destined for publication in the print journal.
2. Each supplementary file must have a clear title (for example, Supplementary Figure 1).

3. Provide a text summary for each file of no more than 50 words. The summary should describe the contents of the file. Descriptions of individual figures or tables should be provided if these items are submitted as separate files. If a group of figures is submitted together in one file, the description should indicate how many figures are contained within the file and provide a general description of what the figures collectively show.
4. The file type and file size in parentheses.
5. Ensure that each piece of supplementary material is clearly referred to at least once in the print version of the paper at an appropriate point in the text, and is also listed at the end of the paper before the reference section.

Format and file size

File sizes should be as small as possible in order to ensure that users can download them quickly.

Images should be a maximum size of 640 x 480 pixels at a resolution of 72 pixels per inch.

Authors should limit the number of files to under ten, with a total size not normally exceeding 3 MB. Sound/movie files may be up to 10 MB per file; colour PDFs/PowerPoint may be up to 5 MB per file; all other general file types may be up to 2 MB per file but most files should be much smaller.

We accept files in any of the following formats (if in doubt please enquire first):

MS Word document (.doc), Adobe Acrobat (.pdf), Plain ASCII text (.txt), Rich Text Format (.rtf), WordPerfect document (.wpd), HTML document (.htm), MS Excel spreadsheet (.xls), GIF image (.gif), JPEG image (.jpg), TIFF image (.tif), MS PowerPoint slide (.ppt), QuickTime movie (.mov), Audio file (.wav), Audio file (.mp3), MPEG/MPG animation (.mpg)

If your file sizes exceed these limits or if you cannot submit in these formats, please seek advice from the editor handling your manuscript.

Supply of author-generated artwork

Monochrome line subject illustrations supplied as hard copy only

These should have the author's name and figure number clearly marked on the back of each piece of artwork. The figures will be scanned at 1200 dpi and compressed using LZW. The scanning process can result in problems with some fine ornaments and with any grey tints used (e.g. tints can fill in; a Moiré interference pattern can be produced; or poor quality, patchy tints result). Illustrations of this kind may be acceptable in a desktop publishing format, but they do not proceed satisfactorily through the several stages before printing. Plain black/white is acceptable, but all other shades/tints should be replaced with distinct PostScript fills or custom fills.

Monochrome line subject illustrations supplied in digital form

Macromedia Freehand, Adobe Illustrator and Adobe Photoshop are the preferred graphics packages. Before submitting your artwork, please do the following:

Where possible, please supply illustrations as TIFF or EPS files (300 dpi). When submitting EPS files you must convert your text within the file to artwork/outlines. If your EPS file contains a scanned image, you must ensure that you supply a full EPS, i.e. binary data. Do not supply PostScript files. PostScript files cannot be included within our integrated page make-up system, or worked on in any way. For best results please save your files as TIFF or EPS files. If files cannot be supplied in this way other formats can be handled (although we do not guarantee to use them).

Draw or scan line artwork to finished size with appropriate line weights and typefaces.

Indicate the file format (e.g. TIFF or EPS), the graphics software that you have used in originating the artwork files (e.g. Freehand 7.0, Illustrator 8.0, etc.) and the computer operating system used (e.g. Mac OS 8.6, Windows NT).

Supply a laser print of all figures. List the name and version of the artwork package used and the names and libraries of fonts used in the artwork or EPS files.

Pattern fills and tints

Artwork packages do not always generate pattern fills for output on image/platesetters. Imagesetters will interpret them differently from your Mac or PC and the result often looks pixellated or blocked. Where possible, use PostScript fills, custom fills and conventional tints. 9

PostScript fills frequently do not display well on screen but they do print out correctly. It is best to avoid the use of complex or very detailed tints, patterns and symbols. These seldom reproduce satisfactorily when reduced to fit the page and when used in a caption or legend may be completely illegible when represented on a screen (for example during page make-up, or on the Web) or when output on low-quality CUP artwork instructions.doc 2 laser printers. Supplying as TIFF or EPS files (see above) alleviates this problem.

Please therefore:

- Use only the tints, patterns and symbols shown here.
- Use conventional fills: solids, tints, lines or cross-hatching.
- Use a PostScript fill if possible.
- Do not use a screen value above 133 lpi. Generally, 100 lpi is better (even when scanned at high resolution finer tints do not reproduce satisfactorily when reduced).
- If possible, use just one kind of screen (line angle or dot shape) and one screen value throughout the document.
- Do not use pattern fills from a graphics program, as these are usually bitmap patterns, which do not output adequately to plate/image setters.

- Do not use colour tints, even if the figure is intended for monochrome printing; use black/white/greyscale.
- Do not use .hairline. line widths in graphics packages.

Monochrome halftone subjects

Figures composed of (hard copy) photographs should be unscreened glossy prints presented at publication scale; each component part should be named with a lower-case letter. Photographic artwork is numbered as part of the sequence of figures, not as separate plates.

If supplying these in digital form, your repro house should follow these instructions:

- Scanning: Scan at a resolution that is around twice the intended screen value; for example scan at 300 dpi for 133 or 150 screen.
- Dot range (halftones only): This is the term we use to describe the highlight/white area and shadow/black areas within a printed image. To prevent the heavy or dark areas of your halftones from filling in or the light areas being washed out we specify a dot range that allows for gains or losses during the process to lithographic printing. Pre-set the dot range at 1% highlight to 96% shadow where possible, we will check your files before outputting as a safeguard.
- Data files: Supply data as TIFF files; if you wish to compress them, use lossless compression software such as the LZW compression package.
- Laser proofs: Supply a good quality laser proof of all figures. List the name and version of the artwork package used and the names and libraries of fonts used in the artwork. If we are unable to use your electronic file, we can scan in the laser proof as an alternative until a revised file can be supplied.
- Line & tone combination: Files scanned as line & tone combination should be scanned at a higher resolution than a standard halftone to ensure better type/line quality, for example, 600 dpi.

10

Colour halftone or line subjects

Do not submit line subject drawings with coloured tints unless the figure is required as a colour plate; use only black/white/greyscale.

If supplying colour subjects in digital form, submit as TIFF or EPS files and choose CMYK colour mode when saving your scans. If you supply files as RGB we need to convert them to the CMYK printing process before we can print, this usually results in a

slight change of the colour values; therefore all colour correction must be carried out in CMYK mode on your machine.

Checklists

Always supply a printed directory of file names, laser proofs of all the figures, and a list of fonts/typefaces used in labelling artwork.

Transfer media

You can supply artwork files in any of the following media:

Apple Mac/PC:

disks at 3.5 inch

100/250 Mb Floppy ZIP drive

CD-ROM

Virus check

Before dispatching your disks please run them through a virus checker program. If possible, also check Word and Excel files for viruses.

General notes

Following acceptance of a manuscript the contact author should receive proofs within 1-12 weeks. They also will be required to complete and forward a copyright form and authors' checklist both of which will be forwarded to the corresponding author by email when the article is accepted.

The average time from an article being accepted to being e-published ahead of print as a First View article is 35 days, provided authors return proofs promptly. E-publication generates a doi number and counts as full publication for citation purposes.

Editorials, "For Debate" articles and book reviews are commissioned by the editor.

Reviewers who reviewed papers in the previous calendar year will be acknowledged in the journal each year. International Psychogeriatrics no longer publishes an annual index as modern computerised search techniques have rendered annual hard copy indices obsolete.

Contributors should refer to recent issues of the journal for examples of formatting (abstracts, headings, references, tables, etc.).

Appendix B: Quality Assessment Tool Guidelines

QUALITY ASSESSMENT TOOL FOR QUANTITATIVE STUDIES

COMPONENT RATINGS

A) SELECTION BIAS

(Q1) Are the individuals selected to participate in the study likely to be representative of the target population?

- 1 Very likely
- 2 Somewhat likely
- 3 Not likely
- 4 Can't tell

(Q2) What percentage of selected individuals agreed to participate?

- 1 80 - 100% agreement
- 2 60 – 79% agreement
- 3 less than 60% agreement
- 4 Not applicable
- 5 Can't tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

B) STUDY DESIGN

Indicate the study design

- 1 Randomized controlled trial
- 2 Controlled clinical trial
- 3 Cohort analytic (two group pre + post)
- 4 Case-control
- 5 Cohort (one group pre + post (before and after))
- 6 Interrupted time series
- 7 Other specify _____
- 8 Can't tell

Was the study described as randomized? If NO, go to Component C.

No Yes

If Yes, was the method of randomization described? (See dictionary)

No Yes

If Yes, was the method appropriate? (See dictionary)

No Yes

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

C) CONFOUNDERS

(Q1) Were there important differences between groups prior to the intervention?

1 Yes 2 No 3 Can't tell

The following are examples of confounders:

1 Race 2 Sex 3 Marital status/family 4 Age 5 SES (income or class) 6 Education 7 Health status 8 Pre-intervention score on outcome measure

(Q2) If yes, indicate the percentage of relevant confounders that were controlled (either in the design (e.g. stratification, matching) or analysis)?

1 80 – 100% (most) 2 60 – 79% (some) 3 Less than 60% (few or none) 4 Can't Tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

D) BLINDING

(Q1) Was (were) the outcome assessor(s) aware of the intervention or exposure status of participants?

1 Yes 2 No 3 Can't tell

(Q2) Were the study participants aware of the research question?

1 Yes 2 No 3 Can't tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

E) DATA COLLECTION METHODS

(Q1) Were data collection tools shown to be valid?

1 Yes 2 No 3 Can't tell

(Q2) Were data collection tools shown to be reliable?

1 Yes 2 No 3 Can't tell

RATE THIS SECTION	STRONG	MODERATE	WEAK
See dictionary	1	2	3

F) WITHDRAWALS AND DROP-OUTS

(Q1) Were withdrawals and drop-outs reported in terms of numbers and/or reasons per group?

1 Yes 2 No 3 Can't tell 4 Not Applicable (i.e. one time surveys or interviews)

(Q2) Indicate the percentage of participants completing the study. (If the percentage differs by groups, record the lowest).

1 80 -100% 2 60 - 79% 3 less than 60% 4 Can't tell 5 Not Applicable (i.e. Retrospective case-control)

RATE THIS SECTION	STRONG	MODERATE	WEAK	
See dictionary	1	2	3	Not Applicable

G) INTERVENTION INTEGRITY

(Q1) What percentage of participants received the allocated intervention or exposure of interest?

1 80 -100% 2 60 - 79% 3 less than 60% 4 Can't tell

(Q2) Was the consistency of the intervention measured?

1 Yes 2 No 3 Can't tell

(Q3) Is it likely that subjects received an unintended intervention (contamination or co-intervention) that may influence the results?

4 Yes 5 No 6 Can't tell

H) ANALYSES

(Q1) Indicate the unit of allocation (circle one) community organization/institution
practice/office individual

(Q2) Indicate the unit of analysis (circle one) community organization/institution
practice/office individual

(Q3) Are the statistical methods appropriate for the study design?

Yes

No

Can't tell

(Q4) Is the analysis performed by intervention allocation status (i.e. intention to treat) rather than the actual intervention received?

1 Yes 2 No 3 Can't tell

GLOBAL RATING

COMPONENT RATINGS

Please transcribe the information from the gray boxes on pages 1-4 onto this page. See dictionary on how to rate this section.

A	SELECTION BIAS	STRONG	MODERATE	WEAK
		1	2	3

B	STUDY DESIGN	STRONG	MODERATE	WEAK	
		1	2	3	
C	CONFOUNDERS	STRONG	MODERATE	WEAK	
		1	2	3	
D	BLINDING	STRONG	MODERATE	WEAK	
		1	2	3	
E	DATA COLLECTION METHOD	STRONG	MODERATE	WEAK	
		1	2	3	
F	WITHDRAWALS AND DROPOUTS	STRONG	MODERATE	WEAK	
		1	2	3	Not Applicable

GLOBAL RATING FOR THIS PAPER (circle one):

- | | | |
|---|----------|----------------------------|
| 1 | STRONG | (no WEAK ratings) |
| 2 | MODERATE | (one WEAK rating) |
| 3 | WEAK | (two or more WEAK ratings) |

With both reviewers discussing the ratings:

Is there a discrepancy between the two reviewers with respect to the component (A-F) ratings?

No Yes

If yes, indicate the reason for the discrepancy

1 Oversight 2 Differences in interpretation of criteria 3 Differences in interpretation of study

Final decision of both reviewers (circle one):

STRONG

MODERATE

WEAK

Appendix C: Quality Criteria

Table 1

Quality Criteria for Included Studies

Quality Criteria	Description	Rating
1. Presence of a selection bias (based on the size and characteristics of sample)	The selected individuals are likely to be representative of the target population	Strong
	The selected individuals are at least somewhat representative of the target population	Moderate
	The selected individuals are not likely to be representative of the target population	Weak
2. The depression measure and attitudes towards ageing measure are appropriate for the older adult population	Both measures are validated within an older adult population	Strong
	At least one measure is validated within an older adult population	Moderate
	Neither measure is appropriate for older adults	Weak
3. The depression measure is reliable and valid	The depression measure has good reliability and validity which is reported in relation to the sample (e.g. Cronbach's alpha for the measure)	Strong
	The depression measure has adequate reliability and validity, but there is information missing in relation to the particular sample	Moderate
	The depression measure has very poor reliability or validity, or this is not addressed at all	Weak
4. The measure to assess attitudes to ageing is reliable and valid	The measure has good reliability and validity which is reported in relation to the sample (e.g. Cronbach's alpha for the sample)	Strong
	The measure has adequate reliability and validity but there is information	Moderate

	missing in relation to the particular sample	
	The measure has poor reliability or validity, or this is not addressed at all.	Weak
5. Confounding variables are reported and addressed	All confounding variables are acknowledged and have been well addressed (at least 80% controlled for)	Strong
	There has been some attempt to identify and control for potential confounding variables (60-79% controlled for)	Moderate
	Potential confounding variables are not reported or less than 60% have been controlled for	Weak
6. Appropriate statistical analysis has been used	The statistical analysis is appropriate for the data and post hoc tests are included where necessary	Strong
	The statistical analysis is appropriate for the data, but no additional tests have been used	Moderate
	Statistical analysis is not suitable for data or the analysis used is not reported	Weak
7. Reports missing data and addresses it appropriately	Missing data is acknowledged and it is addressed appropriately through explanation of missing data	Strong
	Missing data is acknowledged but is not addressed in any way making it hard to determine the cause	Moderate
	Does not indicate whether there is missing data or inappropriate method used to deal with it	Weak

Appendix D: Reasons for Excluding Articles from Systematic Review

Includes data from a previous study already used within this review

Shenkin, S. D., Watson, R., Laidlaw, K., Starr, J. M., & Deary, I. J. (2014). The attitudes to ageing questionnaire: Mokken Scaling Analysis. *PloS one*, 9(6), e99100. doi:

10.1371/journal.pone.0099100

Looks at perceived societal age discrimination rather than ones' own attitude towards ageing or being an older person

Ayalon, L. (2016). Perceived Age Discrimination: A Precipitator or a Consequence of Depressive Symptoms?. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, gbw101. doi: 10.1093/geronb/gbw101

El Bcheraoui, C., Adib, S., & Chapuis-Lucciani, N. (2015). Perception of ageism and self-esteem among Lebanese elders at home and abroad. *Le Journal médical libanais. The Lebanese medical journal*, 63(1), 27. doi: 10.12816/0009916

No standardised measure of depression

Moser, C., Spagnoli, J., & Santos-Eggimann, B. (2011). Self-perception of aging and vulnerability to adverse outcomes at the age of 65–70 years. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 66(6), 675-680.

doi: 10.1093/geronb/gbr052

Participants are not over 60 years old

Bodner, E., Ayalon, L., Avidor, S., & Palgi, Y. (2016). Accelerated increase and relative decrease in subjective age and changes in attitudes toward own aging over a 4-year period: results from the Health and Retirement Study. *European Journal of Ageing*, 1-

11. doi:10.1007/s10433-016-0383-2

Brown, L., Bryant, C., Brown, V., Bei, B., & Judd, F. (2015). Self-compassion, attitudes to ageing and indicators of health and well-being among midlife women. *Ageing & mental health*, 1-9. doi: 10.1080/13607863.2015.1060946

Freeman, A. T., Santini, Z. I., Tyrovolas, S., Rummel-Kluge, C., Haro, J. M., & Koyanagi, A. (2016). Negative perceptions of ageing predict the onset and persistence of depression and anxiety: findings from a prospective analysis of the Irish longitudinal study on ageing (TILDA). *Journal of affective disorders*, 199, 132-138. doi: 10.1016/j.jad.2016.03.042

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- Kavirajan, H., Vahia, I. V., Thompson, W. K., Depp, C., Allison, M., & Jeste, D. V. (2011). Attitude toward own aging and mental health in post-menopausal women. *Asian journal of psychiatry, 4*(1), 26-30. doi:10.1016/j.ajp.2011.01.006
- Lai, D. W. (2005). Prevalence and correlates of depressive symptoms in older Taiwanese immigrants in Canada. *Journal of the Chinese Medical Association, 68*(3), 118-125. doi:10.1016/S1726-4901(09)70232-1
- Lai, D. W. (2007). Attitudes of elderly Chinese toward aging: An international comparison. *International Journal of Sociology of the Family, 79-94.*
- Lai, D. W. (2009). Older chinese' attitudes toward aging and the relationship to mental health: an international comparison. *Social work in health care, 48*(3), 243-259. doi:10.1080/00981380802591957
- Loi, S. M., Dow, B., Moore, K., Hill, K., Russell, M., Cyarto, E., ... & Lautenschlager, N. T. (2015). Attitudes to aging in older carers—do they have a role in their well-being?. *International Psychogeriatrics, 27*(11), 1893-1901. doi:10.1017/S1041610215000873
- Robak, R. W., Griffin, P. W., Lacombe, M., & Quint, W. (2000). Perceptions of aging and their relation with age, death depression, and sex. *Perceptual and motor skills, 90*(3 suppl), 1179-1183. doi: 10.2466/pms.2000.90.3c.1179
- Robertson, D. A., & Kenny, R. A. (2016). “I'm too old for that”—The association between negative perceptions of aging and disengagement in later life. *Personality and Individual Differences. doi:10.1016/j.paid.2016.03.096*

Robertson, D. A., King-Kallimanis, B. L., & Kenny, R. A. (2016). Negative perceptions of aging predict longitudinal decline in cognitive function. *Psychology and aging, 31*(1), 71. doi: 10.1037/pag0000061

Sindi, S., Juster, R. P., Wan, N., Nair, N. P. V., Ying Kin, N., & Lupien, S. J. (2012). Depressive symptoms, cortisol, and cognition during human aging: The role of negative aging perceptions. *Stress, 15*(2), 130-137. doi: 10.3109/10253890.2011.599047

Wang, H. L., Booth-LaForce, C., Tang, S. M., Wu, W. R., & Chen, C. H. (2013). Depressive symptoms in Taiwanese women during the peri-and post-menopause years: Associations with demographic, health, and psychosocial characteristics. *Maturitas, 75*(4), 355-360. doi:10.1016/j.maturitas.2013.04.021

Wight, R. G., LeBlanc, A. J., Meyer, I. H., & Harig, F. A. (2015). Internalized gay ageism, mattering, and depressive symptoms among midlife and older gay-identified men. *Social Science & Medicine, 147*, 200-208. doi:10.1016/j.socscimed.2015.10.066

Wurm, S., & Benyamini, Y. (2014). Optimism buffers the detrimental effect of negative self-perceptions of ageing on physical and mental health. *Psychology & Health, 29*(7), 832-848. doi:10.1080/08870446.2014.891737

The study does not establish the relationship between attitudes towards ageing and depression

Bolkan, C., Hooker, K., & Coehlo, D. (2015). Possible selves and depressive symptoms in later life. *Research on aging, 37*(1), 41-62. doi:10.1177/0164027513520557

Bryant, C., Bei, B., Gilson, K. M., Komiti, A., Jackson, H., & Judd, F. (2016). Antecedents of Attitudes to Aging: A Study of the Roles of Personality and Well-being. *The Gerontologist, 56*(2), 256-265. doi: 10.1093/geront/gnu041

Cho, J., Martin, P., Poon, L. W., & Georgia Centenarian Study. (2015). Successful aging and subjective well-being among oldest-old adults. *The Gerontologist, 55*(1), 132-143. doi: 10.1093/geront/gnu074

Copeland, J. R., Beekman, A. T., Dewey, M. E., Jordan, A., Lawlor, B. A., Linden, M., ... & Prince, M. J. (1999). Cross-cultural comparison of depressive symptoms in Europe does not support stereotypes of ageing. *The British Journal of Psychiatry, 174*(4), 322-329. doi:10.1192/bjp.174.4.322

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- Hickey, A., O'Hanlon, A., & McGee, H. (2010). Quality of life in community-dwelling older people in Ireland: Association with ageing perceptions, physical health and psychological well-being. *The Irish Journal of Psychology*, 31(3-4), 135-150.
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- Zeng, W., North, N., & Kent, B. (2013). Family and social aspects associated with depression among older persons in a Chinese context. *International journal of older people nursing, 8*(4), 299-308. doi: 10.1111/opn.12006

Appendix E: Empirical Paper Author Guidelines

Instructions for authors

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At the point of submission, you will be asked if there is a data set associated with the paper. If you reply yes, you will be asked to provide the DOI, pre-registered DOI, hyperlink, or other persistent identifier associated with the data set(s). If you have selected to provide a pre-registered DOI, please be prepared to share the reviewer URL associated with your data deposit, upon request by reviewers.

Where one or multiple data sets are associated with a manuscript, these are not formally peer reviewed as a part of the journal submission process. It is the author's responsibility to ensure the soundness of data. Any errors in the data rest solely with the producers of the data set(s).

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Title Page: Please include a concise informative title and the full names, highest academic degrees, and affiliations of all authors. A short running head not to exceed 50 characters should be supplied. *Clinical Gerontologist* uses single blind review. Anonymous review is available on request if indicated in the cover letter. Manuscripts in this case should be prepared to conceal the identity of the author(s). The cover page and footnotes that identify author(s) should be omitted.

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Keywords: Please supply 3 to 6 keywords. Consult our guidance on keywords [here](#).

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Note, all manuscripts should include five sections consisting of Introduction, Methods, Results, Discussion, and Clinical Implications (when possible, as a bulleted list), except case studies in which a case presentation is substituted for the "Methods and Results" section.

Original research reports include randomized intervention studies, cohort observational studies, survey research, and studies of assessment or diagnostic tests. If describing scale development, please include a useable version of the scale as an appendix when

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Original brief reports provide the opportunity to succinctly present a concise research contribution. The manuscripts should include five sections consisting of Introduction, Methods, Results, Discussion, and Clinical Implications (preferred format is a bulleted list). Maximum length: 2,000 words not including abstract, tables, figures, references. The Editors may request that original research reports be shortened to brief report length.

Conceptual Reviews may include systematic reviews of the literature, meta-analyses, and/or manuscripts presenting new or revised theoretical models. All reviews should provide systematic, critical assessments of literature that yield conclusions of direct clinical importance to the behavioral health care of older adults. The manuscripts should include five sections consisting of Introduction, Methods of review, Results, Discussion, and Clinical Implications (preferred format is a bulleted list). Maximum length: 6,000 words not including abstract, tables, figures, references.

Clinical comments may take the form of (1) Program evaluation, quality improvement, or clinical implementation studies or (2) Case studies. Except for case studies, clinical comments should follow the format of an original research report with 5 sections: Introduction, Methods, Results, Discussion, and Clinical Implications (bulleted list). Case studies should 4 sections: Introduction, Case Presentation, Discussion, and Clinical Implications (bulleted list). In the Introduction section, frame the issue, citing meta-analyses and review papers when possible. In the Case Presentation section, describe the background data, formulation/approach, and outcome. In the Discussion section, discuss the outcome in the context of the literature and your formulation. Maximum length: 2,500 words not including title page, references, tables, and figures. After peer review, the Editors may allow for additional length if the reviewers request additional material.

New and Emerging Professionals. Special consideration will be given for papers submitted where the primary author is a student, post-doctoral fellow, or newly appointed faculty member. Papers by new and emerging professionals may be of any manuscript type and should follow the instructions for that category.

Acknowledgements . An acknowledgement page should indicate the source of the funding and other support, and disclosure of potential conflicts of interest. All other persons who have made substantial contributions to the work reported in the manuscript (e.g., data collection, analysis, and writing or editing assistance) but who do not fulfill the authorship criteria should be named with their permission.

References

Please use this [reference guide](#) when preparing your paper.

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Tables and Figures may be included with the main manuscript file. Tables should be double spaced throughout. Figures should be completely labeled, taking into account

necessary size reduction. A short descriptive title should appear for each table and figure with a clear legend and any footnotes suitably identified below. All units must be included.

Illustrations submitted (line drawings, halftones, photos, etc.) should be clean originals or digital files. Digital files are recommended for highest quality reproduction and should follow these guidelines:

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Appendix F: Participant Information Sheets

Information Sheet

Version 5.August 2017



Norwich Medical School
 Postgraduate Research Office 2.30
 Elizabeth Fry Building
 University of East Anglia
 Norwich Research Park Norwich
 NR4 7TJ
 Email: clinpsyd@uea.ac.uk
 Tel: +44 (0) 1603 593076
 Fax: +44 (0) 1603 591132
 Web: www.uea.ac.uk

Study title

Quality of Life and Attitudes towards Ageing among Older Adults with and without Anxiety Disorders

Invitation

We would like to invite you to take part in our research study. Before you decide if you would like to take part or not please read this information sheet that explains what the study is about and how you will be involved. If you have any questions about the study then please directly contact the researcher who will try to answer them for you. The details of the researcher can be found at the end of this information sheet. Please take your time to read the information sheet, there is no need to make a decision right away as to whether you would like to take part or not.

What is the purpose of this study?

The purpose of this study is to look if there is a difference between those with and without anxiety in terms of attitudes towards ageing and quality of life among adults over the age of 60. It has been found that healthy older adults generally have positive attitudes towards ageing and have good life satisfaction. However, it has been found that older adults with physical and mental health difficulties may have negative attitudes towards ageing and a worse quality of life. No study has looked at whether having an anxiety disorder has an impact on quality of life and attitudes towards ageing. For this reason this study aims to look at whether there is a difference in attitudes towards ageing and quality of life between older adults with anxiety disorders compared to older adults without.

Do I have to take part?

It is up to you to if you would like to take part. Whether you do decide to take part or not will have no effect on the care you are receiving. If you are not sure we can try to answer any questions you may have before you make a decision. If you agree to take part you will be asked to sign a consent form.

What would taking part involve?

You will be given a pack with questionnaires and consent forms in. First you will be asked about some basic details such as your age and gender. You will then be asked to complete four short questionnaires. In total these should take no longer than 20-25 minutes to complete and can be done in the clinic or at home. Please feel free to discuss the research with family and friends but it is expected that you complete the questionnaires on your own so we can understand your own experiences. You will then be asked to hand them into the reception of the service you are in. If it is more convenient you can collect a pre-paid envelope from reception to enable you to post the questionnaires back. You do not need to show anyone in the clinical team your questionnaires.

What are the possible benefits of taking part?

By taking part in this study will be helping us to understand how anxiety may impact quality of life and attitudes towards ageing. This information could make treatments for anxiety disorders among older adults more helpful. It is unlikely that you will directly benefit from the study. There will be the option to be entered into a draw to win a £25 M & S voucher should you wish.

What are the possible disadvantages and risks of taking part?

It is unlikely that distress will be caused by taking part in this study. The questionnaires will contain some questions about mood which some people may find upsetting. You do not have to answer all the questions if you do not want to. If you do experience any distress then there is information in the debrief form about who you can contact. It is also important to remember that you can withdraw from the study if you wish.

What if there is a problem?

If you have any concerns about any aspects of this study, you should speak to the researcher directly who will try to answer your questions. If you remain unhappy you can make a formal complaint and contact either Professor Kenneth Laidlaw, K.Laidlaw@uea.ac.uk or Dr Adrian Leddy, A.Leddy@uea.ac.uk, University of East Anglia, School of Medicine, Elizabeth Fry Building, NR4 7TJ. Or you can contact the Associate Dean for Research in the Faculty of Health University of East Anglia.

What happens if I don't want to carry on with the study?

You are free to withdraw from the study without giving a reason. If you decide that you would like to withdraw this needs to be done by contacting the researcher on the details below before November 2017 when data collection stops. Up until this point if you withdraw from the study any information that you have provided will be destroyed.

How will information be kept confidential?

All information that is collected will be kept confidential. This means that no one outside the research team will see your personal data. The clinicians in the team you may be seeing do

not need to know whether you are taking part in the study or not. They will also not be able to see the answers you provide. All documentation including identifiable data will be kept in a locked filing cabinet. When your data is entered onto the computer your name will be replaced with a number. All data will be password protected. Your data will be held for up to 10 years after the study had ended and after this point it will be destroyed. All data will be managed in line with the Data Protection Act (1998).

What will happen to the results of the study?

We intend to publish the results of this study in a journal. There will be no personal details used in this. We will also give a brief summary of the results to the mental health services involved in the study as well as yourself if you wish to see the results.

Who is organising and funding this study?

This study is being organised by Miss Hope Westgate (Trainee Clinical Psychologist) under the supervision of Dr Adrian Leddy and Professor Ken Laidlaw, and is being funded by the University of East Anglia.

Who has reviewed this study?

The research is being supervised by the Department of Clinical Psychology at the University of East Anglia. All research in a healthcare setting is reviewed by an Ethics Committee to protect the interests of service-users.

Further information and contact details

If you have any questions I can be contacted via the following:

Hope Westgate
Department of Clinical Psychology
Norwich Medical School
Faculty of Medicine and Health Sciences
University of East Anglia
Norwich Research Park
Norwich
NR4 7TJ
Email: H.Westgate@uea.ac.uk
Mobile number: 07514863643

Alternatively, please contact my supervisor via email: A.Leddy@uea.ac.uk. If you would like to speak to someone unconnected to the study you can contact the Patient Advice and Liaison Service (PALS) who are independent to the study on pals@cpft.nhs.uk or 01223 726774.

Information Sheet

Version 6.August 2017



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 Postgraduate Research Office 2.30
 Elizabeth Fry Building
 University of East Anglia
 Norwich Research Park Norwich
 NR4 7TJ
 Email: clinpsyd@uea.ac.uk
 Tel: +44 (0) 1603 593076
 Fax: +44 (0) 1603 591132
 Web: www.uea.ac.uk

Study title

Quality of Life and Attitudes towards Ageing among Older Adults with and without Anxiety Disorders

Invitation

We would like to invite you to take part in our research study. Before you decide if you would like to take part or not please read this information sheet that explains what the study is about and how you will be involved. If you have any questions about the study then please directly contact the researcher who will try to answer them for you. The details of the researcher can be found at the end of this information sheet. Please take your time to read the information sheet, there is no need to make a decision right away as to whether you would like to take part or not.

What is the purpose of this study?

The purpose of this study is to look if there is a difference between those with and without anxiety in terms of attitudes towards ageing and quality of life among adults over the age of 60. It has been found that healthy older adults generally have positive attitudes towards ageing and have good life satisfaction. However, it has been found that older adults with physical and mental health difficulties may have negative attitudes towards ageing and a worse quality of life. No study has looked at whether having an anxiety disorder has an impact on quality of life and attitudes towards ageing. For this reason this study aims to look at whether there is a difference in attitudes towards ageing and quality of life between older adults with anxiety disorders compared to older adults without.

Do I have to take part?

It is up to you to if you would like to take part. Whether you do decide to take part or not will have no effect on the care you are receiving. If you are not sure we can try to answer any questions you may have before you make a decision. If you agree to take part you will be asked to provide consent.

What would taking part involve?

You will be asked to fill in an online survey. When you go on to the survey, you will first be asked to provide consent. Then you will be asked about some basic details such as your age and gender. Following this, you will be asked to complete four short questionnaires. In total these should take no longer than 20-25 minutes to complete. Please feel free to discuss the research with family and friends but it is expected that you complete the questions on your own so we can understand your own experiences. If you would like to fill in questionnaires by hand, rather than do them online, please ask your clinician for the study pack.

What are the possible benefits of taking part?

By taking part in this study you will be helping us to understand how anxiety may impact quality of life and attitudes towards ageing. This information could make treatments for anxiety disorders among older adults more helpful. It is unlikely that you will directly benefit from the study. There will be the option to be entered into a draw to win a £25 M & S voucher should you wish.

What are the possible disadvantages and risks of taking part?

It is unlikely that distress will be caused by taking part in this study. The questionnaires will contain some questions about mood which some people may find upsetting. You do not have to answer all the questions if you do not want to. If you do experience any distress then there is information at the end of the study about who you can contact. It is also important to remember that you can withdraw from the study if you wish.

What if there is a problem?

If you have any concerns about any aspects of this study, you should speak to the researcher directly who will try to answer your questions. If you remain unhappy you can make a formal complaint and contact either Professor Kenneth Laidlaw, K.Laidlaw@uea.ac.uk or Dr Adrian Leddy, A.Leddy@uea.ac.uk, University of East Anglia, School of Medicine, Elizabeth Fry Building, NR4 7TJ. Or you can contact the Associate Dean for Research in the Faculty of Health University of East Anglia.

What happens if I don't want to carry on with the study?

You are free to withdraw from the study without giving a reason. If you decide that you would like to withdraw this needs to be done by contacting the researcher on the details below before November 2017 when data collection stops. Up until this point if you withdraw from the study any information that you have provided will be destroyed.

How will information be kept confidential?

All information that is collected will be kept confidential. This means that no one outside the research team will see your personal data. The clinicians in the team you may be seeing do not need to know whether you are taking part in the study or not. They will also not be able to see the answers you provide. The online survey has an encrypted internet connection and the data will be stored temporarily on a secure sever. Access to data is limited to technical staff

and would only be accessed in exceptional circumstances if required to for technical reasons or if required by law. All information on this server will be deleted 3 months after the survey closes. A unique identification number will be assigned to each person, and this will be downloaded from the site with the questionnaire data. Names and identifiable information will be stored separate to questionnaire data. All data downloaded will be password protected. Data will be held for up to 10 years after the study has ended and after this point it will be destroyed. All data will be managed in line with the Data Protection Act (1998).

What will happen to the results of the study?

We intend to publish the results of this study in a journal. There will be no personal details used in this. We will also give a brief summary of the results to the mental health services involved in the study as well as yourself if you wish to see the results.

Who is organising and funding this study?

This study is being organised by Miss Hope Westgate (Trainee Clinical Psychologist) under the supervision of Dr Adrian Leddy and Professor Ken Laidlaw, and is being funded by the University of East Anglia.

Who has reviewed this study?

The research is being supervised by the Department of Clinical Psychology at the University of East Anglia. All research in a healthcare setting is reviewed by an Ethics Committee to protect the interests of service-users.

Further information and contact details

If you have any questions I can be contacted via the following:

Hope Westgate
Department of Clinical Psychology
Norwich Medical School
Faculty of Medicine and Health Sciences
University of East Anglia
Norwich Research Park
Norwich
NR4 7TJ

Email: H.Westgate@uea.ac.uk

Mobile number: 07514863643

Alternatively, please contact my supervisor via email: A.Leddy@uea.ac.uk. If you would like to speak to someone unconnected to the study you can contact the Patient Advice and Liaison Service (PALS) who are independent to the study on pals@cpft.nhs.uk or 01223 726774.

Study Link

Please follow this link below if you would like to take part in the study. Once you are on the survey, follow the instructions provided. It is recommended that you take at least 48 hours to think about whether you would like to take part.

<https://uea.onlinesurveys.ac.uk/attitudes>

Appendix G: Participant Consent Forms



Consent Form

Version 5.August 2017

Norwich Medical School
 Postgraduate Research Office 2.30
 Elizabeth Fry Building
 University of East Anglia
 Norwich Research Park Norwich
 NR4 7TJ
 Email: clinpsy@uea.ac.uk
 Tel: +44 (0) 1603 593076
 Fax: +44 (0) 1603 591132
 Web: www.uea.ac.uk

Participant Identification Number:

CONSENT FORM

Title of Project: Quality of Life and Attitudes towards Ageing among Older Adults with and without Anxiety Disorders

Name of Researcher: Hope Westgate (Trainee Clinical Psychologist)

- | | Please
initial box |
|---|--------------------------|
| 1. I confirm that I have read the information sheet dated August 2017 (version 5) for the above study. I have had the opportunity to think about the information, ask questions and have had these answered. | <input type="checkbox"/> |
| 2. I understand that I do not have to take part in the study and am free to withdraw up to a given time (November 2017) without giving reason and without my care being affected. | <input type="checkbox"/> |
| 3. I understand that my information will be kept confidential and will not be shared outside of the research team. | <input type="checkbox"/> |
| 4. I understand that relevant sections of my medical notes and data collected during the study, may be looked at by individuals from UEA, regulatory authorities or from the NHS Trust, where it is relevant to my taking part in the research. I give permission for these individuals to have access to my records. | <input type="checkbox"/> |
| 5. I agree to take part in the above study (which involves filling in questionnaires). | <input type="checkbox"/> |

Name of Participant

Date

Signature

Consent Form

Version 6.August 2017



Norwich Medical School
 Postgraduate Research Office 2.30
 Elizabeth Fry Building
 University of East Anglia
 Norwich Research Park Norwich
 NR4 7TJ
 Email: clinpsyd@uea.ac.uk
 Tel: +44 (0) 1603 593076
 Fax: +44 (0) 1603 591132
 Web: www.uea.ac.uk

CONSENT FORM

Title of Project: Quality of Life and Attitudes towards Ageing among Older Adults with and without Anxiety Disorders

Name of Researcher: Hope Westgate (Trainee Clinical Psychologist)

Please select
(I agree)

1. I confirm that I have read the information sheet dated August 2017 (version 6) for the above study. I have had the opportunity to think about the information, ask questions and have had these answered.
2. I understand that I do not have to take part in the study and am free to withdraw up to a given time (November 2017) without giving reason and without my care being affected.
3. I understand that my information will be kept confidential and will not be shared outside of the research team.
4. I understand that relevant sections of my medical notes and data collected during the study, may be looked at by individuals from UEA, regulatory authorities, BOS technicians or from the NHS Trust, where it is relevant to my taking part in the research. I give permission for these individuals to have access to my records.
5. I agree to take part in the above study (which involves filling in online questionnaires).

Name of Participant _____ Date _____

Appendix H: Ethics approval documentation



Health Research Authority

West Midlands - South Birmingham Research Ethics Committee

The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

Please note: This is the favourable opinion of the REC only and does not allow you to start your study at NHS sites in England until you receive HRA Approval

31 January 2017

Miss Hope Westgate
Trainee Clinical Psychologist
UEA
Postgraduate research office 2.30
Norwich Medical School, UEA
Norwich
NR4 7TJ

Dear Miss Westgate

Study title: Quality of life and attitudes towards ageing among older adults with and without anxiety disorders
REC reference: 17/WM/0037
IRAS project ID: 209497

Thank you for your letter of 30th January 2016, responding to the Proportionate Review Sub-Committee's request for changes to the documentation for the above study.

The revised documentation has been reviewed and approved by the sub-committee.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this favourable opinion letter. The expectation is that this information will be published for all studies that receive an ethical opinion but should you wish to provide a substitute contact point, wish to make a request to defer, or require further information, please contact please contact hra.studyregistration@nhs.net outlining the reasons for your request.

Under very limited circumstances (e.g. for student research which has received an unfavourable opinion), it may be possible to grant an exemption to the publication of the study.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

Conditions of the favourable opinion

The REC favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).

Guidance on applying for HRA Approval (England)/ NHS permission for research is available in the Integrated Research Application System, www.hra.nhs.uk or at <http://www.officer.nhs.uk>.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of management permissions from host organisations.

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database. This should be before the first participant is recruited but no later than 6 weeks after recruitment of the first participant.

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact hra.studyregistration@nhs.net. The expectation is that all clinical trials will be registered, however, in exceptional circumstances non registration may be permissible with prior agreement from the HRA. Guidance on where to register is provided on the HRA website.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" above).

Approved documents

The documents reviewed and approved by the Committee are:

Document	Version	Date
Evidence of Sponsor Insurance or Indemnity (non NHS Sponsors only) [Insurance cover letter and certificates]	1	08 January 2017
IRAS Application Form [IRAS_Form_09012017]		06 January 2017
IRAS Application Form XML file [IRAS_Form_09012017]		06 January 2017
IRAS Checklist XML [Checklist_09012017]		06 January 2017
IRAS Checklist XML [Checklist_09012017]		09 January 2017
IRAS Checklist XML [Checklist_30012017]		30 January 2017
Other [schedule of events]	1	16 January 2017
Other [Statement of activities]	1	16 January 2017
Other [JEA feedback of proposal]	1	01 July 2016
Other [Amendments cover letter]	1	30 January 2017
Participant consent form [Consent form]	2	26 August 2016
Participant consent form [Contact details consent form]	2	26 August 2016
Participant consent form [Consent form]	3	24 January 2017
Participant information sheet (PIS) [Information sheet]	2	02 December 2016
Participant information sheet (PIS) [Debrief sheet]	2	26 August 2016
Participant information sheet (PIS) [Information sheet]	3	30 January 2017
Research protocol or project proposal [Proposal]	3	16 December 2016
Summary CV for Chief Investigator (CI) [CV]	1	23 December 2016
Summary CV for supervisor (student research) [Supervisor CV]	1	10 August 2016
Summary CV for supervisor (student research) [Ken Laidlaw CV]	1	09 January 2017
Summary, synopsis or diagram (flowchart) of protocol in non technical language [Procedure flowcharts]	2	02 December 2016
Validated questionnaire [Demographic information]	1	06 January 2017
Validated questionnaire [Geriatric Anxiety Inventory]	1	06 January 2017
Validated questionnaire [Geriatric Depression Scale]	1	06 January 2017
Validated questionnaire [Quality of Life for older adults measure]	1	06 January 2017
Validated questionnaire [Attitudes towards ageing questionnaire]	1	06 January 2017
Validated questionnaire [Geriatric Anxiety Inventory]		24 January 2017
Validated questionnaire [Geriatric Depression Scale]		24 January 2017
Validated questionnaire [Quality of Life measure]		30 January 2017
Validated questionnaire [Attitudes towards ageing questionnaire]		24 January 2017

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review**Reporting requirements**

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback

You are invited to give your view of the service that you have received from the Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website:

<http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance>

We are pleased to welcome researchers and R & D staff at our RES Committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

17/WM/0037	Please quote this number on all correspondence
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With the Committee's best wishes for the success of this project.

Yours sincerely



**Professor Simon Bowman
Chair**

Email: rescommittee.westmidlands-southbirmingham@nhs.net

Enclosure: *"After ethical review – guidance for researchers" (SL-AR2)*

Copy to: Mrs Yvonne Kirkman
Dr Bonnie Teague, NHS

Miss Hope Westgate
 Trainee Clinical Psychologist
 UEA
 Postgraduate research office 2.30
 Norwich Medical School, UEA
 Norwich
 NR4 7TJ

Email: hra.approval@nhs.net

31 January 2017

Dear Miss Westgate

Letter of HRA Approval

Study title: Quality of life and attitudes towards ageing among older adults with and without anxiety disorders
IRAS project ID: 209497
REC reference: 17/WM/0037
Sponsor

I am pleased to confirm that **HRA Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications noted in this letter.

Participation of NHS Organisations in England

The sponsor should now provide a copy of this letter to all participating NHS organisations in England.

Appendix B provides important information for sponsors and participating NHS organisations in England for arranging and confirming capacity and capability. Please read *Appendix B* carefully, in particular the following sections:

- *Participating NHS organisations in England* – this clarifies the types of participating organisations in the study and whether or not all organisations will be undertaking the same activities
- *Confirmation of capacity and capability* - this confirms whether or not each type of participating NHS organisation in England is expected to give formal confirmation of capacity and capability. Where formal confirmation is not expected, the section also provides details on the time limit given to participating organisations to opt out of the study, or request additional time, before their participation is assumed.
- *Allocation of responsibilities and rights are agreed and documented (4.1 of HRA assessment criteria)* - this provides detail on the form of agreement to be used in the study to confirm capacity and capability, where applicable.

Further information on funding, HR processes, and compliance with HRA criteria and standards is also provided.

It is critical that you involve both the research management function (e.g. R&D office) supporting each organisation and the local research team (where there is one) in setting up your study. Contact details and further information about working with the research management function for each organisation can be accessed from www.hra.nhs.uk/hra-approval.

Appendices

The HRA Approval letter contains the following appendices:

- A – List of documents reviewed during HRA assessment
- B – Summary of HRA assessment

After HRA Approval

The document ***After Ethical Review – guidance for sponsors and investigators***, issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics, and is updated in the light of changes in reporting expectations or procedures.

In addition to the guidance in the above, please note the following:

- HRA Approval applies for the duration of your REC favourable opinion, unless otherwise notified in writing by the HRA.
- Substantial amendments should be submitted directly to the Research Ethics Committee, as detailed in the *After Ethical Review* document. Non-substantial amendments should be submitted for review by the HRA using the form provided on the [HRA website](#), and emailed to hra.amendments@nhs.net.
- The HRA will categorise amendments (substantial and non-substantial) and issue confirmation of continued HRA Approval. Further details can be found on the [HRA website](#).

Scope

HRA Approval provides an approval for research involving patients or staff in NHS organisations in England.

If your study involves NHS organisations in other countries in the UK, please contact the relevant national coordinating functions for support and advice. Further information can be found at <http://www.hra.nhs.uk/resources/applying-for-reviews/nhs-hsc-rd-review/>.

If there are participating non-NHS organisations, local agreement should be obtained in accordance with the procedures of the local participating non-NHS organisation.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application

IRAS project ID	209497
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procedure. If you wish to make your views known please email the HRA at hra.approval@nhs.net. Additionally, one of our staff would be happy to call and discuss your experience of HRA Approval.

HRA Training

We are pleased to welcome researchers and research management staff at our training days – see details at <http://www.hra.nhs.uk/hra-training/>

Your IRAS project ID is 209497. Please quote this on all correspondence.

Yours sincerely

Miss Lauren Allen

Assessor

Email: hra.approval@nhs.net

Copy to: *Mrs Yvonne Kirkman (Sponsor contact)*
Dr Bonnie Teague, NHS (Lead NHS R&D contact)

REC Substantial Amendment Approval



West Midlands - South Birmingham Research Ethics Committee

The Old Chapel
Royal Standard Place
Nottingham
NG1 8FS

Please note: This is the favourable opinion of the REC only and does not allow the amendment to be implemented at NHS sites in England until the outcome of the HRA assessment has been confirmed.

04 July 2017

Miss Hope Westgate
Trainee Clinical Psychologist
UEA
Postgraduate research office 2.30
Norwich Medical School, UEA
Norwich
NR4 7TJ

Dear Miss Westgate

Study title:	Quality of life and attitudes towards ageing among older adults with and without anxiety disorders
REC reference:	17/WM/0037
Amendment number:	SA1
Amendment date:	15 June 2017
IRAS project ID:	209497

The above amendment was reviewed on 4 July 2017 by the Sub-Committee in correspondence.

Ethical opinion

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

Approved documents

The documents reviewed and approved at the meeting were:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Notice of Substantial Amendment (non-CTIMP) [Substantial amendment 1]	SA1	15 June 2017
Other [Amendment cover letter]	N/A	
Other [Clinical staff protocol (tracked)]	N/A	
Other [Clinical staff procedure (online)]	N/A	
Participant consent form [Consent form (online version)]	4	01 May 2017
Participant consent form [Consent form (tracked)]	3	01 January 2017
Participant information sheet (PIS) [PIS (online version)]	4	01 May 2017
Participant information sheet (PIS) [PIS (tracked Changes)]	3	01 January 2017
Research protocol or project proposal [Research Proposal (clean)]	4	03 August 2016
Research protocol or project proposal [Research proposal (tracked)]	4	03 August 2016

Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

Working with NHS Care Organisations

Sponsors should ensure that they notify the R&D office for the relevant NHS care organisation of this amendment in line with the terms detailed in the categorisation email issued by the lead nation for the study.

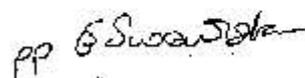
Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

We are pleased to welcome researchers and R & D staff at our Research Ethics Committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

17/WM/0037:	Please quote this number on all correspondence
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Yours sincerely



Professor Paula McGee
Chair

E-mail: NRESCCommittee.WestMidlands-SouthBirmingham@nhs.net

Enclosures: *List of names and professions of members who took part in the review*

Copy to: *Dr Bonnie Teague, NHS*
Mrs Yvonne Kirkman

West Midlands - South Birmingham Research Ethics Committee
Attendance at Sub-Committee of the REC meeting on 14 July 2017

Committee Members:

<i>Name</i>	<i>Profession</i>	<i>Present</i>	<i>Notes</i>
Dr John David Cochrane	Retired GP	Yes	
Professor Paula McGee	Professor of Nursing	Yes	

Also in attendance:

<i>Name</i>	<i>Position (or reason for attending)</i>
Ms Ellen Swainston	REC Manager

HRA Substantial Amendment Approval

Dear Miss Westgate

Further to the below, I am pleased to confirm that HRA Approval has been issued for the referenced amendment, following assessment against the HRA criteria and standards. The sponsor should now work collaboratively with participating NHS organisations in England to implement the amendment as per the below categorisation information. This email may be provided by the sponsor to participating organisations in England to evidence that the amendment has HRA Approval.

Please contact hra.amendments@nhs.net for any queries relating to the assessment of this amendment.

Kind regards

Isobel Lyle | Senior Assessor

Health Research Authority

Room 002, TEDCO Business Centre, Rolling Mill Rd, Jarrow NE32 3DT

T: 0207 972 2496

[Hra.amendments@nhs.net](mailto:hra.amendments@nhs.net) or Isobel.lyle@nhs.net

www.hra.nhs.uk

Sign up to receive our newsletter [HRA Latest](#)

HRA Non-Substantial Amendment Approval

Amendment Categorisation and Implementation Information

Dear Miss Westgate,

Thank you for submitting an amendment to your project.

If you have participating NHS/HSC organisations in any other UK nations we will forward the information to the relevant national coordinating function(s).

Please note that you may only implement changes described in the amendment notice.

What Happens Next?

Information Specific to Participating NHS Organisations in England

1. You should now share details of the amendment and, if applicable, amended documents, together with this email, with all participating NHS organisations in England. In doing so, you should include the [NHS R&D Office](#), [LCRN](#) (where applicable) as well as the local research team. A template email to notify participating NHS organisations in England is provided on the [HRA website](#).
2. The participating NHS organisations in England should prepare to implement this amendment.
3. Your amendment has been assessed against [HRA standards](#). **This email also constitutes HRA Approval for the amendment, and you should not expect anything further from the HRA.**
4. You may implement your amendment at all participating NHS organisations in England 35 calendar days from the day on which you provide the organisations with this email and your amended documents (or as soon as the participating NHS organisation confirm that you may implement, if sooner). **NHS organisations do not have to confirm they are happy with the amendment.**
5. You may not implement the amendment at any participating NHS organisations in England that requests additional time to assess, until it confirms that it has concluded its assessment.
6. You may not implement at any participating NHS organisation in England that declines to implement the amendment.

IRAS Project ID:	209497
Short Study Title:	Quality of life and attitudes towards ageing among older adults
Date complete amendment submission received:	29/08/2017
Amendment No./ Sponsor Ref:	NSA # 1 - extension of study recruitment period by 6 weeks.
Amendment Date:	29 August 2017
Amendment Type:	Non-substantial
Outcome of HRA Assessment	This email also constitutes HRA Approval for the amendment, and you should not expect anything further from the HRA.

Implementation date in NHS organisations in England	35 days from date amendment information together with this email, is supplied to participating organisations
For NHS/HSC R&D Office information	
Amendment Category	A

If you have any questions relating to the wider HRA approval process, please direct these to hra.approval@nhs.net.

If you have any questions relating to this amendment in one of the devolved administrations, please direct these to the relevant [national coordinating function](#).

Additional information on the management of amendments can be found in the [IRAS guidance](#).

Please do not hesitate to contact me if you require further information.

Kind Regards

Alka Bhayani

HRA Approvals - Amendment Coordinator



Health Research Authority

HRA, Ground Floor, Skipton House, 80 London Road, London, SE1 6LH

E: hra.amendments@nhs.net

[www.hra.nhs.uk]www.hra.nhs.uk

The HRA is keen to know your views on the service you received – our short feedback form is available [here](#)