The relationship between self-compassion, attitudes to ageing, anxiety, depression and loneliness in older adults who live alone in the UK.

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Title of degree programme	**Professional Doctorate in Clinical Psychology**
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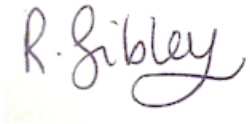
Declaration and signature of candidate
I confirm that the thesis submitted is the outcome of work that I have undertaken during my programme of study, and except where explicitly stated, it is all my own work. I confirm that the decision to submit this thesis is my own. I confirm that except where explicitly stated, the work has not been submitted for another academic award. I confirm that the work has been conducted ethically and that I have maintained the anonymity of research participants at all times within the thesis. Signed:  Date: 29.04.24

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Thesis Abstract

Paper One is a literature review of 12 studies. It reviews the impact of social isolation during Covid-19 lockdowns on older adults' psychological wellbeing. Four main areas across the studies highlighted how ways of coping, effects on physical and mental health, uncertainty relating to the lockdown restrictions, and loneliness due to lack of social connection impacted older adults. There were discrepancies between how psychological wellbeing was defined and measured. Some studies were limited by their cross-sectional design, narrow inclusion criteria and an inability to establish cause and effect. The potential implications for this are discussed.

Paper Two is an empirical study. This details a cross-sectional study, which explored the relationship between loneliness, attitudes to ageing, self-perceived burden, anxiety, depression, and self-compassion. A total of 65 older adult participants over 65 years old were recruited. Participants completed five validated questionnaires online or by requesting a postal pack. A multiple regression was used to analyse the data. The results indicated that there was no relationship between loneliness, attitudes to ageing, self-perceived burden, anxiety, depression, and self-compassion. The findings suggest that further research is needed into the complex and nuanced experience of loneliness. Exploring different individual factors, such as resilience and income, alongside environmental factors through mixed methods research may provide information into loneliness dynamic and deeply subjective.

Paper Three is an executive summary of the empirical research project. It is written to be accessible to participants who originally took part in the study. The background, method, results, and recommendations are outlined.

Table of Contents

Paper One: Literature Review

What was the impact of social isolation during Covid-19 lockdowns on older adults' psychological wellbeing?

Word count: 7757 (Excluding the title page, references and appendices)

This literature review is intended for publication in the 'Journal of Population Ageing'. The referencing style of this paper is APA 7th edition, in line with the journal requirements. Further modifications will be made before submitting to the journal to meet these guidelines.

Abstract

Psychological wellbeing is increasingly crucial in older age due to increased risk and prevalence of chronic illnesses. This review appraises literature of the impact on older adult psychological wellbeing, of social isolation during Covid-19 lockdown restrictions.

A systematic search of 10 databases was completed with 12 studies critically appraised in a narrative synthesis.

Four areas were highlighted: ways of coping, effects on physical and mental health, uncertainty relating to the lockdown restrictions, and loneliness due to lack of social connection. The effects varied, with individual personality and social factors, such as support networks being influential.

Lockdowns led to social isolation, resulting in mental and physical health decline in older adults. Uncertainty about the length of the restrictions negatively affected psychological wellbeing and a lack of social connection contributed to loneliness. Improving and maintaining psychological wellbeing in older adults is important, given the risk of reduced quality of life in ageing.

Introduction

Covid-19, caused by the severe acute respiratory syndrome coronavirus-2, was declared a pandemic by the World Health Organization (WHO) on the 11th of March 2020. Global quarantine and lockdown regulations were implemented to control the spread of Covid-19. Lockdowns are temporary government imposed conditions requiring people to stay home and limit public activities outside their homes, such as dining out or attending large gatherings (Woc-Colburn & Godinez, 2022). Lockdowns were implemented globally to slow Covid-19 transmission, with physical distancing being a significant part of this. Physical distancing can be categorised into social restrictions, such as social gatherings, movement restrictions, and business closure or restricted opening hours (WHO, 2020). The restrictions imposed varied worldwide, however were in place in some form between March 2020 and December 2021 (WHO, 2021). Since the mandated restrictions and physical distancing ended, research on the impact of social isolation on older adults' psychological wellbeing has been growing (Atzendorf & Gruber, 2021).

The lockdowns affected mental health, for example, increased feelings of helplessness, sadness, frustration and loneliness (Onyeaka et al., 2021). Global lockdown restrictions have contributed to economic depression, reduced social activities, increased mental health symptoms, and a negative impact on wellbeing and quality of life (Onyeaka et al., 2021; Someshwar et al., 2020; Verma & Prakash, 2020).

In the UK, an older adult is defined as someone over 65 (NHS England), as this was the age traditionally at which men could retire and draw their pension (Office for National Statistics, 2019). This review uses the UK definition for an older adult as someone over 65 years old. Prior to the onset of Covid-19, older adults were viewed as more susceptible to social isolation, due to less social contact and poorer physical health, which increases vulnerability to poor psychological wellbeing (Brown et al., 2020). In a study of 52,730 people a Chinese study found that 35% of older adults experienced higher emotional and physiological distress compared to those younger, following lockdown restrictions (Qiu et al., 2020).

Social isolation is 'the objective absence of interactions between a person and a social network' (Gardner et al., 1999). Guidance for older people to stay connected was criticised as being unrealistic due to the speed of infections and the lack of resources

(Brooke & Jackson, 2020). Older adults experienced enforced social isolation which resulted in worsening psychological symptoms, such as depression, sleep problems, and struggles to access health services resulting in physical health decline (Lebrasseur et al., 2021). Maintaining psychological wellbeing in later life is deemed important, with the absence of mental illness and good psychological wellbeing linked to improved overall mental health (Tang et al., 2019).

Psychological wellbeing is a subjective construct based on combined positive emotions and a sense of life purpose (Deiner, 2000). Individual circumstances, including personal finances, resilience, empathy, perceived quality of social interaction, work and family relationships contribute to the flourishing of psychological wellbeing (Keyes et al., 2002; Ryff & Singer, 2008; Ryff, 2018). Additionally, good quality sleep, regular exercise, and emotional regulation have been found to promote good psychological wellbeing (Huppert, 2009; Morales-Rodríguez et al., 2020; Wicks, 2008). A widely accepted definition of psychological wellbeing is that it is more than the absence of psychological illbeing, encompassing a broader range of constructs than happiness, such as feeling safe and having independence (Seligman, 2011). This includes the philosophical terms hedonia and eudaimonia, which were first used to define a ‘good life’. These terms coexist to refer to human orientations, behaviours, experiences, and functioning (Huta, 2015). The hedonic approach refers to experiencing pleasure, happiness, increased life satisfaction, and positive affect. The eudaimonic perspective emphasises self-acceptance, personal growth, and life purpose (Ryan & Deci, 2001). Combining both approaches provides a more comprehensive understanding of psychological wellbeing (McMahan & Estes, 2011; Ryff, 1995). Psychological wellbeing is frequently utilised in research, encompassing both hedonic and eudaimonic approaches (Dodge et al., 2012; Steptoe at al., 2015).

Evaluating psychological wellbeing has no single index or accepted questionnaire (Warr, 2012). Standardised measures that have been developed include the Psychological Wellbeing (PWB) scale (Ryff et al., 2007; adapted from Ryff, 1989), the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS), (Tenant et al., 2007), and the. World Health Organization Well-Being Index (WHO-5), which is among the most widely used questionnaires assessing subjective psychological wellbeing (Bech, 2004). The UK's ‘Measuring National Well-Being Programme’, uses the WHO-5, whilst a different measure of psychological wellbeing is used for the UK government’s

assessment of national levels of wellbeing (Allin & Hand, 2017). The Office for National Statistics assesses psychological wellbeing in four areas: life satisfaction, eudaimonic wellbeing, and hedonic wellbeing and illbeing, respectively (VanderWeele et al., 2020).

Psychological wellbeing is subjective, with evaluation or judgment about a person's life made by the individual themselves (Das et al., 2020). Older adults' psychological wellbeing is influenced by changes in social relationships, social roles, and activities, such as transitioning from parent to grandparent or retiring (Steptoe at al., 2015). Good psychological wellbeing is linked to healthy ageing, greater satisfaction, less stress, worry, and anger (Lyubomirsky et al., 2005). Research indicates that older adults' psychological wellbeing may decline due to increased risk of dependence due to physical health limitations, personal factors, including deteriorating health, reduced income, and death of loved ones (Bragina & Voelcker-Rehage, 2018). In this review both hedonic and eudaimonic approaches to psychological wellbeing will be used to define psychological wellbeing.

Rationale

Research is emerging evaluating the impact of Covid-19 lockdown restrictions on the psychological wellbeing of older adults, who are deemed to be more vulnerable to social isolation and loneliness (Fakoya et al., 2020). Whilst some research on social isolation in older adults has identified health risks, there is little on this relating to Covid-19 (Cornwell & Waite, 2009).

There has been research conducted for health staff, children, but there is a paucity of research for older adults' mental wellbeing. Where research with older adults exists, the primary focus is on the effectiveness of online interventions during the lockdown rather than the impact of social isolation on older adults' psychological wellbeing. To ensure adequate studies on this topic in the current review all living situations were included, namely, those living alone, with others, or in sheltered housing.

Aim

- To identify what the impact of social isolation was on older adults' psychological wellbeing during Covid-19 lockdowns.

Method

Search Strategy

A search of the literature was carried out over two days on the 4th – 5th April 2023 by one reviewer.

A systematic approach was used to search the literature. Keywords were inputted into EBSCOhost (including Medline, PsychINFO, CINAHL Plus, and PsychARTICLES) electronic databases. Science Direct, Google Scholar, DART Europe, Open Grey, SCOPUS and Ethos were also searched individually.

The search terms used for each database are shown in Table 1.

Table 1

Search terms

Search Terms
S1: "older adults" OR "over 65" OR elderly NOT children NOT adults
AND
S2: "psychological wellbeing" OR "wellbeing"
AND
S3: "Covid-19" OR coronavirus
AND
S4: "social isolation" OR lockdown OR restriction

Selection Criteria

Inclusion Criteria

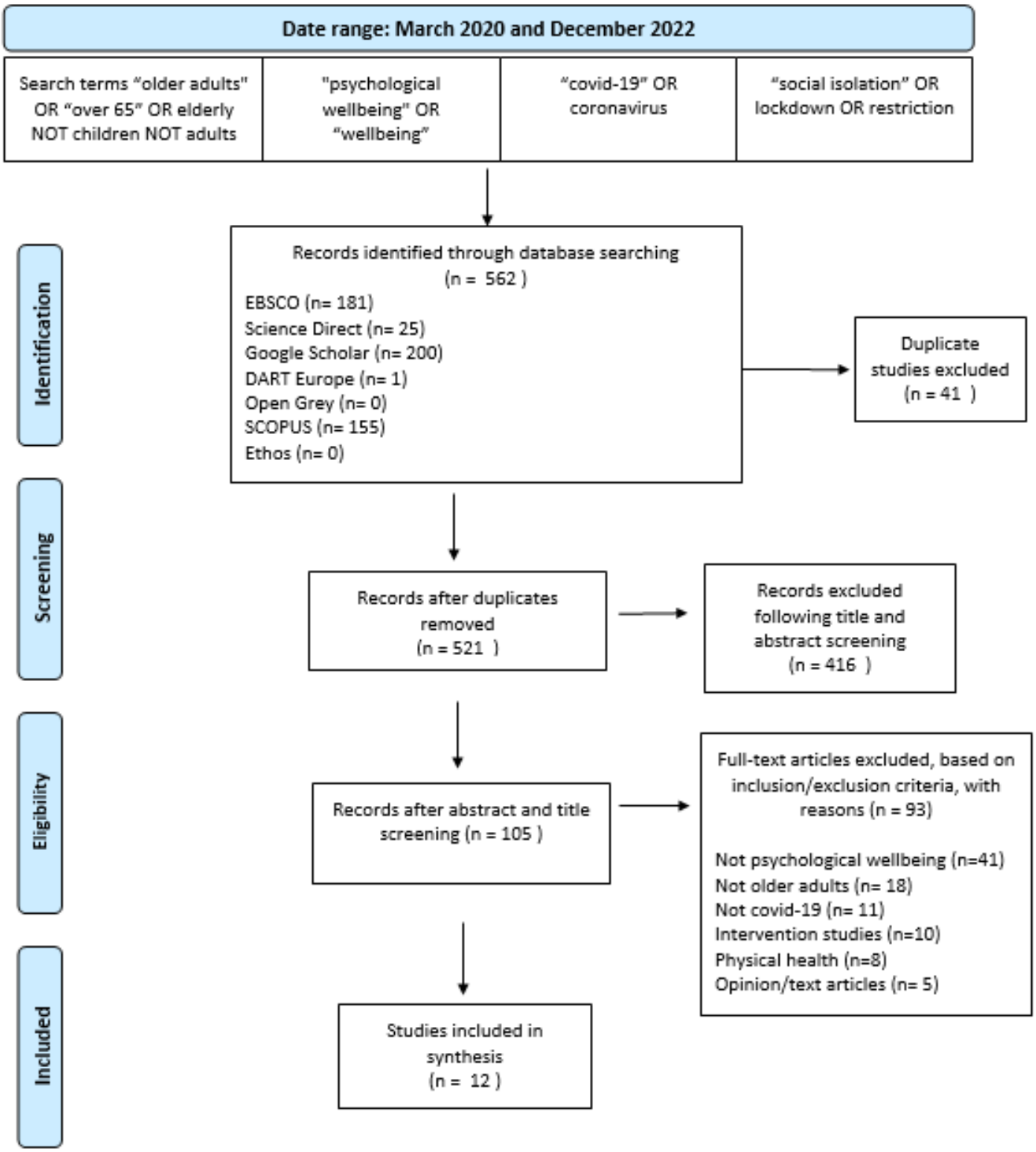
- Participants 65 years old
- Peer-reviewed
- Focused on social isolation due to the Covid-19 lockdown restrictions
- Investigation and measurement of psychological wellbeing, using hedonic and eudaimonic approaches as a variable, which was explored as part of the study aims.
- The publication was made between March 2020 and December 2022, coinciding with the global lockdown restrictions.
- Reference to lockdown restrictions between 1st January 2020 and 31st December 2022 (Oxford University Response Tracker, 2023).

Exclusion Criteria

- Intervention study
- Study not available in English, due to a lack of resources for translation facilities
- Text or opinion article

The search yielded 562 studies, which were screened for eligibility, and once duplicates were removed, articles were screened for eligibility by title and abstract. For the remaining articles, studies were excluded if they did not meet the inclusion criteria, resulting in 12 relevant articles (Figure 2). To counteract for publication bias further searches on Open Grey, EthOS and Google Scholar were used to search for unpublished and grey literature with no relevant papers found. The reviewer's inability to search every database may result in some unpublished research not being included in the review.

Figure 2 - Flowchart of Search Strategy Process



Critical Appraisal

The studies were appraised by the author. For the qualitative studies, the Joanna Briggs Institute (JBI) qualitative critical appraisal tool (Joanna Briggs Institute, 2020) was utilised, which comprises ten items. The tool is designed for systematic review of content, methodology, and processes, and has a clear structure for efficiently conducting critical reviews. Papers were scored out of a maximum of two according to whether the criteria were met, (yes = 2), partially met (partial = 1) or not met (no = 0), and the total score was converted into a percentage providing an indicator of the overall quality. For the quantitative studies in the review an adapted eleven item JBI appraisal tool (Joanna Briggs Institute, 2020) was developed by the author, by combining elements from the cross-sectional checklist with questions to account for longitudinal studies, for both survey and mixed methods design. Four items were incorporated into the JBI cross sectional tool from a longitudinal checklist by Tooth (2005), as it was deemed the most appropriate way to appraise the longitudinal design. Additionally, the question ‘Are the participant voices, adequately represented?’ was included and taken from the JBI qualitative appraisal tool (Joanna Briggs Institute, 2020). This enabled critical appraisal and scoring of the mixed methods studies. The adapted appraisal tool and scoring system was utilised in all quantitative and mixed methods studies to maintain consistency.

Table 3

Table of study characteristics

Author, year and country	Participants	Aims	Design	Findings	Quality Score %
Clifton et al. (2022) United States of America	100; >65 years old	To assess loneliness, social isolation, and social support in older adults with cancer during the pandemic.	Mixed methods; Cross-sectional survey questionnaire design and content analysis	There was a significant correlation between loneliness, social isolation, and emotional support, with 27% of participants exhibiting at least one indicator of loneliness.	88%
Corley et al. (2021) Scotland	171; >70-years old	Whether home garden usage is associated with self-reported mental and physical wellbeing in older adults, during Covid-19 lockdown in Scotland.	Cross-sectional survey questionnaire design.	Neither gardening nor relaxing in the garden were associated with health outcomes. higher garden usage was linked to improved physical, emotional, and mental health, sleep quality, and a composite health score, despite no association between gardening and relaxation.	71%
De Pue et al. (2021) Belgium	639; 65-97 years old	To establish the impact of the COVID-19 pandemic on adults aged 65 years or older, and which factors moderate this impact.	Cross-sectional survey questionnaire design.	Participants reported a significant decrease in activity level, sleep quality and wellbeing. Depression was strongly related to reported declines in activity level, sleep quality, wellbeing and cognitive functioning.	95%
Falvo et al. (2021) Switzerland	19; >65 years old	To explore the lived experiences of individuals aged 65 or older during the first Covid-19 lockdown.	Qualitative method using inductive thematic analysis	The public health response generated a resentment and ambivalence at the individual, micro, meso and macro social levels. Labelling older adults as an at-risk sub-population was found to contribute to public and self-stigmatization.	80%

Author,year and country	Participants	Aims	Method	Findings	Quality Score %
Fuller & Huseth-Zosel (2020) United States of America	76; 70-97 years old	To examine levels of self-rated perceived coping among older adults, as well as explore ways older adults are coping with the sudden need to socially isolate.	Mixed methods; Cross-sectional survey questionnaire design and thematic analysis	Mean perceived coping level (on a scale from 1-10) was self-rated as 7.9, with 87% rating their coping positively. Primary themes that emerged included: 1) staying busy, 2) seeking social support, 3) having a positive mind-set.	58%
Hansen et al. (2022) Norway	4,104; 65-92 years old	To examine longitudinal change in loneliness, psychological ill-being and psychological wellbeing in older adults after Covid-19 restrictions had been in place.	Cross-sectional longitudinal survey questionnaire design.	Women reported slightly higher loneliness, psychological ill-being and lower psychological wellbeing. For both genders, a decline in psychosocial wellbeing with higher loneliness and psychological distress reported.	90%
Krendl & Perry (2020) United States of America	120; > 65 years old	To examine whether social isolation due to Covid-19 was associated with greater loneliness and depression for older adults, and, if so, whether declines in social engagement or relationship strength moderated that relationship.	Cross-sectional longitudinal survey questionnaire design.	Participants reported increased depression and loneliness among participants, with loneliness positively predicting depression. Relationship strength moderated this relationship, and loneliness only predicted depression for a reduction in social contact with close family or friends.	70%
Mau et al. (2022) Denmark	17; 64–97 years old	To examine well-being among older adults during COVID-19. 'How do older adults understand the nature and conditions of well-being in light of the COVID-19 pandemic? And how do they approach the pandemic's potential influence on their well-being?'	Qualitative method using IPA.	Three themes emerged in relation to approaching the pandemic and influence on wellbeing: adaptation, control, and a sense of community.	90%

Author,year and country	Participants	Aims	Method	Findings	Quality Score %
Moens et al. (2022) Netherlands	834; >76 years old	To investigate the impact of Covid-19 pandemic and associated restrictive measures on the six dimensions of Positive Health in community-dwelling older individuals living in the Netherlands.	Cross-sectional survey questionnaire design.	75% self-rated mental wellbeing as satisfactory and 70% of participants rated their quality of life as unchanged, and their social participation as poor. 73% of participants reported a deterioration was most frequently in the dimension of social participation.	81%
Pujari et al. (2023) India	10; >70 years old	To gain a deeper understanding of the impact of social isolation due to Covid-19 on the vulnerable geriatric population.	Qualitative method, analysis used not stated.	Challenges faced included poor sleep and digestive health along with neglect of their persisting ailments, which needed attention. Mental issues were also very serious, such as fear of death, anxiety, stress and depression.	50%
Vitman-Schorr et al. (2021) Israel	201; > 65 years old	To examine the effect of loneliness and the role of two mediating factors, depressive symptoms and malnutrition on subjective age among older adults during the Covid-19 pandemic, and explore how the pandemic is affecting subjective age.	Cross-sectional survey questionnaire design.	The relationship between feelings of loneliness and subjective age was mediated by malnutrition, but not by depressive symptoms. Possible practical solutions include new social network technologies for reducing loneliness.	86%
Zablan et al. (2023) Australia	177; 65- 84 years old	To explore how companion animal ownership impacted the subjective wellbeing of older adults	Qualitative design using thematic analysis	Participants with companion animals perceived benefits to their mental, social, and physical wellbeing by providing ‘covid safe’ tactile comfort, social support, and companionship during the lockdown. Providing care for their companion animals and interacting with wild animals offered reprieve from fear, bringing a sense of pleasure, purpose to their days.	80%

Results

Twelve studies were included in this review. For further study characteristics for each study see Table 3. Four of the papers used cross-sectional questionnaire design (Corley et al., 2021; De Pue et al., 2021; Moens et al., 2022; Vitman-Schoor et al., 2021), one quantitative longitudinal study (Hansen et al., 2022) and one mixed method longitudinal study (Krendl & Perry, 2021) using a structured validated data collection research interview (PhenX Toolkit; Hamilton, et al., 2011), a further two used mixed methods, utilising content analysis and cross-sectional questionnaire design (Clifton et al., 2022), thematic analysis and cross-sectional questionnaire design (Fuller & Huseth-Zosel, 2021). Four papers used qualitative methodology; two using Interpretative Phenomenological Analysis (IPA) (Falvo et al., 2021; Mau et al., 2022), and two using Thematic Analysis (Pujari et al., 2022; Zablan et al., 2022).

Overview of the Studies

Corley et al. (2021) recruited 171 older adults in Scotland to investigate the impact of garden usage on mental and physical wellbeing, measured by asking participants to rate their emotional and mental health. Participants completed online questionnaires about their garden use.

Vitman-Schoor et al. (2021) recruited 201 older adults in Israel to examine the effects of loneliness, depressive symptoms and malnutrition on subjective age, or how old people feel. Participants completed telephone questionnaires to measure psychological wellbeing by using a self-rating scale for subjective age and loneliness, and a validated measure of depression.

De Pue et al. (2021) recruited 640 older adults in Norway to complete validated online questionnaires examining possible factors that might have influenced seven domains of wellbeing, including psychological wellbeing.

Moens et al. (2022) examined the impact of Covid-19 restrictions on 834 older adults in the Netherlands, using an online questionnaire to measure six health dimensions, including mental wellbeing.

Hansen et al. (2022) completed a longitudinal study in Norway examining the psychosocial wellbeing of 4,104 older adults, focusing on satisfaction, engagement, happiness, and loneliness.

Clifton et al. (2022) conducted a study on 100 cancer patients in the USA, assessing their psychological wellbeing through measures of loneliness, social isolation, and emotional support.

Fuller & Huseth-Zosel (2021) explored coping experiences and strategies during Covid-19 in the USA of 76 older adults. Participants engaged in telephone interviews and questionnaires, with psychological wellbeing measured using open questions relating to quality of life.

Krendl and Perry (2021) investigated the link between the Covid-19 restrictions, increased loneliness and depression among 93 older adults in the USA. Participants completed phone interviews and questionnaires at two time points to assess psychological wellbeing, including depression, loneliness, anxiety, and stress.

Mau et al. (2022) interviewed 17 older adults in Denmark to examine how Covid-19 potentially influenced their wellbeing. Wellbeing was measured by asking participants to describe their lived experience of the lockdown.

Falvo et al. (2021) investigated the lived experiences and psychological wellbeing of 19 older adults in Switzerland during the Covid-19 lockdown using semi-structured interviews, focusing on emotions, expectations, and hopes.

Zablan et al. (2022) aimed to explore how companion animal ownership impacted the subjective wellbeing of 177 older adults in Australia. Participants completed telephone interviews and psychological wellbeing was explored by using open ended questions.

Pujari et al. (2022) conducted semi-structured interviews with 10 older adults to gain an understanding of the impact of the social isolation on physical and psychological wellbeing in India.

Design and methodology

The JBI critical appraisal tools provided a comprehensive understanding of the impact of social isolation on psychological wellbeing across various methodologies and designs, scoring between 50% - 93%.

Overall, the studies clearly stated their aims but provided varying theoretical information due to limited research on lockdown restrictions and Covid-19. The theory presented focused on social isolation and ageing, with appropriate research designs and methods.

Recruitment

Overall, the qualitative papers provided clear detail of selection and recruitment processes. The exception to this was Pujari et al. (2023) who used convenience sampling to interview participants but provided no detail about how participants were recruited, with a lack of detail relating to what questions were asked in the interview to investigate psychological wellbeing, which limits the study quality. All other qualitative designs described the interview in detail, which is a strength as it indicates rigor (Clifton et al., 2022; Falvo et al., 2021; Fuller & Huseth-Zosel, 2021; Krendl & Perry, 2021; Mau et al., 2022; Zablan et al., 2022). Mau et al. (2022) used purposive sampling advertising in a newsletter targeting older adults, highlighting potential limitations due to distress. Other recruitment methods included flyers, ageing-focused organizations, magazines, and word of mouth. (De Pue et al., 2021; Fuller & Huseth-Zosel, 2021; Moens et al., 2022; Vitman-Schoor et al., 2021). A recruitment limitation of all the studies is self-selection bias, as online recruitment excluded individuals without internet or the financial means to participate. The studies aren't a representative sample of older adults, with challenges faced by the researchers in reaching groups such as ethnic, sexual and disabled minorities. Falvo et al. (2021) used convenience and snowball sampling, however these methods are prone to research and sampling bias, which could have affected the internal validity of the analysis.

Clifton et al. (2022) and Hansen et al. (2022) sourced participants from cancer clinics, limiting generalisability. Corley et al. (2021) recruited participants from previous research, potentially posing social desirability or response bias.

Hansen et al. (2022) and Corley et al. (2021) provided ethical approval information, but a limitation of two qualitative (Pujari et al., 2022; Mau et al., 2022), and one mixed methods study (Krendl and Perry, 2021) was that no information was provided regarding how informed consent was gained. No studies detailed the potential risk or safeguards in place for participants taking part in the research which impacts the study quality.

Sample size

Calculating an appropriate sample size is important for methodological, ethical purposes and ensuring data is reliable (Faber & Fonseca, 2014). A small sample size also undermines the internal and external validity of a study.

Two mixed methods studies detailed sample size calculations, with Krendl and Perry's (2021) study being over-powered, which could result in a small difference appearing very significant and is a waste of resources. Clifton et al. (2022) considered the potential barriers of recruiting and the retention of older adults with cancer during the lockdown due to social distancing and incorporated this into their recruitment strategy. Moens et al. (2022) did not report a sample size calculation, stating that their recruitment methods allowed them to reach 834 older adults during the lockdown timeframe.

For the quantitative studies, Corley et al. (2021) reported a moderate effect size in relation to their 171 participants, noting that the sample did not reflect a heterogeneous sample. Hansen et al. (2022) reported the effect sizes of their data, gathered at two time points, detailing moderation analysis the handling of missing data. Of the qualitative papers, only Falvo et al. (2021) described a sample size calculation, based on previous similar methodological studies. Sample sizes in the IPA studies were acceptable at 17 and 19 (Falvo et al.,2021; Mau et al., 2022), based on guidance stating that between 2 and 25 participants is sufficient in order to represent the homogeneity that exists among participants (Creswell, 2012), and to gain a 'better understanding' of their overall lived experiences.

The sample sizes for the thematic analysis studies were quite different and neither study provides justification for the sample size or describes a data saturation point, where enough data has been collected to draw necessary conclusions. Zablan et al. (2022) invited 845 participants from another mixed methods study and recruited a sample of 177, whereas Pujari et al. (2022) do not provide information about how they arrived at the sample size of 10. Guidance for thematic analysis sample size has been mixed, ranging from around 2 to over 400 depending on whether a study is small, medium or large. However, it is recommended that studies need enough data to demonstrate patterns while ensuring there is not too much data to manage (Braun & Clarke, 2013).

Data analysis and Reflexivity

All quantitative studies provided a clear description of their statistical analyses, thus allowing for replication. All of the studies reported the significance level used, however, only three reported confidence intervals (Corley et al., 2021; De Pue et al., 202; Vitman-Schoor et al., 2021). De Pue et al. (2021) also described the relevance of using multi-collinearity and Bonferroni correction.

Reflexivity is crucial in qualitative research, but lack of information on it in qualitative papers can lead to bias in conclusions (Mauthner & Doucet, 2003). No qualitative papers discussed reflexivity, which is problematic, as data may be bias based on the researcher's own beliefs. A lack of reflexivity negatively impacts data quality, as researchers must acknowledge their role, prior experiences, assumptions, and judgments to maintain subjectivity (May & Perry, 2014). Mau et al. (2022) and Zablan et al. (2022) described analysis, but not researcher reflexivity. This may have impacted the objectivity of the researchers, influencing findings based on their own beliefs, experiences, and feelings they had in relation to the lockdown restrictions.

Synthesis of Findings

From a synthesis of the findings, four prominent areas emerged: different ways of coping, the impact on physical and mental health, the role of uncertainty relating to the lockdown restrictions, and loneliness due to lack of social connection. These areas are discussed below.

Different ways of coping

The older adult population demonstrated strengths such as resilience and adaptive coping, which contributed to a positive outlook, support to regulate emotions, which mitigated negative effects on psychological wellbeing (Fuller & Huseth-Zosel, 2021; Hansen et al., 2022; Mau et al., 2022). Personality characteristics influenced individual coping styles and the extent to which the lockdown restrictions caused psychological distress. For example, one participant said, 'I am positive, extrovert and optimist...I have been happy and content' (Mau et al., 2022, p. 7), and another participant said 'there has been a giant black hole there, for those three months... that self-isolation, right? We were two people here…. for two months, where we did not see anybody' (Mau et al., 2022, p. 5). Older adults implemented routines day to day, and keeping busy provided a sense of purpose, which supported their psychological wellbeing (Falvo et al, 2021). Significantly better self-reported physical health, sleep quality, emotional and mental wellbeing, was associated with spending more time in the garden during the lockdown, when compared with pre-lockdown (Corley et al., 2021). Benefits of communal, green outdoor spaces included opportunities for social engagement and social support between neighbours. Zablan et al. (2022) found that companion animals provided an 'emotional escape' from pandemic fears, a sense of motivation and purpose. Dog owners stated that walking their dog outside provided physical exercise, and other benefits, which aided coping. For example, one participant stated 'My main interest is the wild birds in the garden, …. I look forward to seeing them each day' (Zablan et al., 2002, p 13).

Fuller and Huseth-Zosel (2021) found that 81% of the 76 older adults self-reported coping well by staying busy and maintaining a positive mind-set in the initial weeks of the lockdown despite social distancing challenges. They also found exercise routines, virtual book clubs, reading, and puzzles were found to be beneficial. Older adults' previous experiences of confronting and overcoming hardships in their lives aided coping (Mau et al., 2022). Any form of social engagement reduced feelings of isolation, as the social connection supported psychological wellbeing during the lockdown restrictions (Corley et al., 2021). In contrast, the longer the lockdowns continued, the less effective different coping strategies became (Hansen et al., 2022). There was limited evidence across the studies relating to unhelpful coping, although

Mau et al. (2022) found that where older adults perceived that they were overlooked by their social networks and the wider community, their psychological wellbeing was negatively impacted (Mau et al., 2022). Initially older adults adapted well to social isolation, although negative feelings accumulated over time, making it more difficult to cope. The stressors caused by the lockdowns, such as changing restrictions and negative feelings intensifying, contributed to older adults lacking the resources and skills to cope effectively (Hansen et al., 2022).

Impact on physical and mental health

The consequences of the lockdown restrictions resulted in physical health challenges, such as poor sleep and diet, as well as struggling to cope with existing ailments or emerging physical health issues which needed attention (Pujari et al, 2022). Pujari et al. (2022) reported that observations informed their individual interviews of older adults conducted in Mumbai, India, with 'key experiences' described in the study. These experiences included descriptions of fearing death, experiencing anxiety, stress and depression during the lockdown and with lasting effects beyond the end of the lockdown. Physical healthcare was also neglected, with participants stating that tasks to maintain health such as blood pressure monitoring, annual medical reviews, and physiotherapy sessions were disrupted. One participant said 'My daughter didn't allow me to go for my physiotherapy sessions. The pain kept on building up' (Pujari et al., 2022, p. 72).

For half of the 19 older adults interviewed from Switzerland, the participants shared how the social isolation of the lockdown was affecting their mental health due to the reclusion and confinement of prolonged time away from their social contacts (Falvo et al., 2021). One participant said 'I had a mental block. It's a kind of fear of that insidious stranger. . . And I no longer feel like going out' (Falvo et al., 2022, p7). he psychological stress induced by the onset of Covid-19 was suggested to be a contributing factor to an increase in subjective age, based on the impact that stress has on worsening the physical effects of ageing, for example, a weaker immune system (Vitman-Schoor et al., 2021). Furthermore, stress induced by the social restrictions contributed to less energy, higher levels of irritation and lethargy.

Lockdown significantly reduced older adults' wellbeing, activity, and sleep quality (De Pue et al., 2021). In the same study, those with symptoms of depression experienced decline in cognitive functioning, including concentration, memory and multi-tasking. Research was inconsistent about whether pre-existing mental health conditions such as depression increased the risk on physical or mental health. Hansen et al. (2022) reported no increased risk to mental health if depression was present prior to the lockdowns but De Pue et al. (2021) suggest that symptoms of low mood before the lockdown contributed to a deterioration in overall mental health.

Loneliness negatively impacted psychological wellbeing, leading to increased depression and reduced social connections to social networks (Krendl & Perry, 2021). It is unclear if this loneliness will persist or changes over time as people adapt without lockdown restrictions (Hansen et al, 2022).

The role of uncertainty relating to the lockdown restrictions

The nature of the sudden implementation of the lockdown restrictions resulted in insufficient planning for health and social care (Filip et al., 2022; Isasi et al., 2021). Mau et al. (2022) highlighted older adults feeling a lack of control over the restrictions and frustration about the changing guidelines. The longer the restrictions went on, the more emotional strain accumulated for older adults (Hansen et al., 2022), which contributed to an increased sense of reclusion, isolation in their community, and society, influencing their psychological wellbeing.

Interviewing participants aided understanding of the psychological impact of lockdown restrictions, including feelings of fear and uncertainty about virus spread through qualitative interviews (Mau et al., 2022). There were difficulties in adapting to updated guidance, described by one participant as ‘making sense of paradoxical guidelines’ (Mau et al., 2022, p. 5). Another participant spoke about the changing guidance and future uncertainty saying that ‘you can’t trust what people are saying’ (Mau et al., 2022, p. 5). Due to guidelines differing across areas of the community, one participant said ‘The unknown of what will come after. . . How we will get out of this problem. . . If we will still be the same. . . I don’t know (Falvo et al, 2022, p. 11), and ‘maybe authorities will have to say “slowly, slowly!” and enforce even stricter rules’ (Falvo et al, 2022, p. 12).

Loneliness due to lack of social connection

The use of technology was mixed for participants' psychological wellbeing and social connection. Using the internet and mobile phones enabled older adults to keep in touch and connect with others (Clifton et al., 2022; Fuller & Huseth-Zosel, 2021; Krendl & Perry, 2021; Pujari et al., 2022). However, this also highlighted the inequity for the older adult population based on the need for internet skills and finances to permit access (Moens et al., 2022).

Older adults described being stigmatised, discriminated against and excluded by being portrayed as 'at risk' or 'weak' (Falvo et al., 2021). For example, one participant said, 'I cannot stand wearing a mask if I go out, and if I do, they look at me weirdly' (Falvo et al., 2021, p.10). The focus from public health messages communicated by government on older adults' vulnerability exacerbated social isolation, leading to a reduction to in person contact and reduced opportunities for social interaction (Falvo et al., 2021).

Social isolation during the lockdown increased loneliness, malnutrition, and subjective age in older adults due to the increase in stress that older adults experienced (Vitman-Schoor et al., 2021). Also, a lack of contact with others contributed to a decline in general wellbeing, particularly for those with reduced vision or hearing, who rely on social support with practical tasks such as shopping and cooking. Remote social contact, such as via telephone or video calls, buffered against the impact of the restrictions (Falvo et al., 2021), reducing loneliness by providing emotional support. Attending in person appointments for cancer treatment provided both practical and medical input which was helpful for psychological wellbeing (Clifton et al., 2022). Loneliness affected females living alone as they lacked social support in their home during the lockdown, and felt more distressed (Hansen et al., 2022). The authors suggest that this could be due to the social expectations upon females to be more socially active and from a cohort that tended to be more responsible for caregiving in families. As this wasn't possible during the lockdown, loneliness feelings increased with a reduction in social engagement. Increased loneliness in older adults predicted depression symptoms when asked to compare to symptoms prior to the lockdown (Krendl & Perry, 2021).

Discussion

Social connection being important for good psychological wellbeing was highlighted across the studies, despite variations in the lockdown restrictions, with a lack of social connection being a significant contributor to the impact in overall psychological wellbeing. This builds on previous evidence to support the need for older adults to have social connection and close relationships (Bruggencate et al., 2017). According to the Evolutionary Theory of Loneliness (ETL), loneliness is an adaptive trait and the negative emotional response to being alone is a survival mechanism that encourages social connection seeking. ETL explains how social isolation or feeling alone, even when surrounded by others, is an instinctive warning system that evolved to support society's survival through social solidarity, cohesiveness and collective action (Cacioppo & Cacioppo, 2018). The review highlights how negative psychological wellbeing was exacerbated by uncertainty related to lockdown restrictions, as fear and anxiety became dominant emotions in the Covid-19 crisis (De Pue et al., 2021; Krendl & Perry, 2021).

Weiss (1973) describes two types of loneliness: emotional and social loneliness. Emotional loneliness is where there is a lack of intimate or close relationships, and social loneliness is where there is shortage of social engagement (Weiss, 1973). The unexpected lockdowns exaggerated the impact that social isolation had on psychological wellbeing, disconnecting older adults from their community (Fuller & Huseth-Zosel, 2021; Moens et al., 2022). Therefore, it’s understandable that loneliness in this context may contribute to worsening psychological wellbeing, increased anxiety, depression and the fear of continued loneliness (Keller et al., 2022).

Caution should be used when interpreting the studies with low scores on the appraisal tool and consideration given to the presence of uncontrolled confounding variables. For example, pre-existing health conditions affected older adults in different ways, such as existing mental health conditions being negatively affected (Hansen et al., 2022).

Evidence shows that proactive coping, by adapting to stressful situations aids resilience in older adults (Tomás et al., 2012), and has an important role in wellbeing. This is in line with findings from this review, as having helpful coping strategies, such

as keeping occupied, spending time outdoors, and connecting with others, improved psychological wellbeing. This suggests that having resources to cope is important for older adults. For example, having a support system, an alternative perspective on the situation or effective coping strategies are required to cope successfully (Aguilera, 1998). The transactional theory of stress and coping (Lazarus & Folkman, 1984) describes how reaction to events and stress levels are influenced by their environment, varying from mild to extreme distress. For example, one individual may not be upset at all, but another may be extremely distressed by the same situation. Stress perception, which impacts both coping and judgement of a situation is influenced by a number of individual resources (Fozard & Wahl, 2012). These include personality factors, such as higher levels of optimism and compassion, influencing potential threats appearing manageable, a reduction in stress, and a greater sense of wellbeing (Gross, 2015). This aligns with the differences in individual ways of coping found in the review, likely due to individualistic differences. It is possible that the longer that the lockdown was enforced negatively impacted psychological wellbeing, due to older adult's reappraisal of their resources to cope and resulting in negative emotional consequences. For example, initial hope and optimism about Covid-19 and the lockdowns may have been reappraised in a more negative and anxiety inducing way, contributing to a worsening of psychological wellbeing in older adults.

Review Limitations

The Covid-19 restrictions are likely to have affected research being carried out due to the effect of lockdowns on the approval of studies and on the researchers themselves. Therefore, this may impact the reliability of this literature review. However, clear eligibility criteria and published appraisal tools were used to conduct a rigorous review. The inclusion of a numerical scoring system, which was not part of the original tools, but aided comparisons across the studies. However, additional reviewers could have reduced scoring bias, increased the number of relevant studies and aided improvement in the validity of the findings. It's possible that relevant papers were overlooked, including unpublished research and non-English-published papers that could not be translated, limiting the scope of this review. The effect of lockdowns on psychological wellbeing may be influenced by the number of people living in a dwelling, with those living alone experiencing a decline in their well-being compared

to those with family or in sheltered housing (Clifton et al., 2022; De Pue et al., 2021; Moens et al., 2022). Further exploration of this would be beneficial to understand the extent to which this influences psychological wellbeing.

The length and restrictions of the lockdowns varied across countries, with older adults influenced by cultural, socioeconomic, and cohort effects. For example, social and health inequalities across the world contributed to differences in government spending, medical supplies and the development of a vaccine (Lee, 2021). Study locations include the UK and Europe (Corley et al., 2021; De Pue et al., 2021; Falvo et al., 2021; Hansen et al., 2022; Mau et al., 2022; Moens et al., 2022), the United States of America (Clifton et al., 2022; Fuller & Huseth-Zosel, 2021; Krendl & Perry, 2021), Australia (Zablan et al., 2022), Israel and India (Pujari et al., 2022; Vitman-Schoor et al., 2021) and will reflect these wider systemic issues.

The overall findings of this review varied in quality, particularly Pujari et al. (2022) achieving a much lower quality score and should be interpreted with caution. The review highlights the broad impact of social isolation on older people under Covid-19 restrictions, which limits the accuracy of the findings. The results are also representative of homogeneous populations, using cross-sectional designs that can't determine cause and effect or predict relationships over time. The use of online, postal or telephone methods, due to the imposed social restrictions throughout this time period, also limits the validity of the findings as the participants aren’t representative of those not able to access the internet.

Clinical Implications

The review highlights that social isolation has a negative impact on the psychological wellbeing of older adults and regular screening for social support and loneliness could be useful (Clifton et al., 2022). The terms social isolation and loneliness are often used interchangeably, with evidence suggesting significant overlap where both result in a negative concept of wellbeing (Golden et al., 2009). Additionally, loneliness can lead to isolation, and vice versa (Shankar et al., 2011) which suggests that considering both may be help improve understanding of when social isolation or loneliness occurs, in order to provide new directions for research and interventions (Newall & Menec, 2019). In the long term, loneliness lowers self-esteem, effects the ability to connect with others and increases the likelihood of

needing mental health support for declining mood (Goldie et al., 2016). Loneliness was problematic during the lockdown (Falvo et al, 2021; Krendl & Perry, 2021), contributing to anxiety and depression (Moens et al., 2022; Pujari et al., 2022), including physical health changes, such as malnutrition (Vitman-Schoor et al., 2021) and poor sleep (De Pue et al., 2021). A UK campaign for loneliness (Ferguson, 2011), funded by the EU Interregional Fund aims to develop new evidence and synthesise existing evidence. The importance of coping mechanisms for older people and psychological wellbeing has been highlighted by this review. Older adults with higher income, active lifestyles, and better social contact report better subjective wellbeing and coping abilities for life stressors, despite age and gender differences (Pinquart & Sörensen, 2000). These inequalities are important to consider when developing effective interventions for older adults, to try to address the barriers that exist in targeting psychological wellbeing. Combining the opportunity to socialise with therapeutic interventions may provide a more comprehensive and effective way to target social isolation (Dickens et al., 2011).

Mental health symptoms like depression and anxiety predict loneliness in older adults (Singh & Misra, 2009) and psychological interventions like Acceptance and Commitment Therapy (ACT) can help promote coping strategies and values driven behaviour, such as participating in community activities for social contact, rather than treating symptoms of anxiety and depression (Petkus & Wetherell, 2013). For example, ACT teaches acceptance of negative situations and feelings as part of life, unlike CBT which focuses on reframing negative thoughts related to anxiety, which might be less helpful than ACT because anxiety based around health or loss, for example, may not be unrealistic. By encouraging people to change their thinking about loss or disablement, an acceptance approach to learn to focus on their remaining resources may be more beneficial (Diefenbach et al., 2008). One pilot study found fewer dropout rates of older adults having an intervention for generalised anxiety for an ACT intervention, compared to CBT (Wetherell et al., 2009). As ACT offers an acceptance oriented rather than a change oriented style, there is more flexibility in the treatment approach and format for older adults and has been found to be positively received by older adults (Isaacowitz & Seligman, 2002; Witlox et al., 2021). For example, coping with age related problems like declining physical health through

acceptance may be more beneficial than changing something that is not possible, freeing up time to focus on meaningful tasks in life (Wetherell et al., 2011).

A low intensity self-help randomised control design CBT intervention (Jarvis et al., 2019) was conducted over three months using the instant messaging service 'WhatsApp'. The study suggests that technology-based interventions, such as group video sessions and written messages, can effectively reduce loneliness and change negative thoughts in socially isolated individuals. Using technology in a similar way could be incorporated to provide increased flexibility for those socially isolated due to an inability to leave their house, for example, those who are physically disabled.

Future Research

All of the studies have strengths and limitations, but specific recommendations related to the psychological wellbeing of older adults is lacking. Quality of life declined during lockdowns for those living alone (Moens et al, 2022), therefore future studies investigating people who live alone could provide insight into how psychological wellbeing and social isolation interact. Additionally, research looking at ways to reduce vulnerability to social isolation could provide better understanding into what contributes to good psychological wellbeing.

Most of the quantitative studies in this review were cross-sectional, meaning the ability to establish causality between social isolation and psychological wellbeing wasn't possible. Longitudinal studies over a prolonged period of time are needed to address a knowledge gap to provide insight into older adult psychological wellbeing beyond lockdowns.

An estimated 2.5 million people in the UK, aged 65 and over do not use the internet, therefore a large number of people do not have access to online social contact or resources (Age UK, 2023). Additional qualitative research to capture more in-depth views from older adults without access to the internet would enable the voices of those missing from this review to be heard.

Healthcare disparities such as poor physical health influence older adult's access to therapeutic interventions that could remedy social isolation. Research on loneliness in older adults led to the development of social prescribing, a psychosocial

intervention aimed at reducing the likelihood of loneliness (Cohen-Mansfield & Parpura-Gill, 2006; Ong et al., 2015). Social prescribing involves healthcare staff referring older adults to local, non-clinical services, such as volunteering, arts activities, group learning, gardening, cookery, and a range of sports. However, a systematic review found a lack of convincing data to suggest success or value for money (Bickerdike et al., 2017). Despite widespread advocacy, a more rigorous evaluation approach of social prescribing is needed due to small-scale research with poor design and missing data, requiring more time and resources.

Alternatives to social prescribing, include more structured psychological interventions such as cognitive behavioural therapy (CBT), which has been found to have the potential to target loneliness and social isolation (Freedman & Nicolle, 2020). However, more evidence is required to understand to what extent structured psychological interventions could improve outcomes and psychological wellbeing.

Conclusion

The review examines the psychological impact of Covid-19 lockdowns on older adults, revealing shared vulnerability to mental and physical health issues and loneliness, but individual differences influenced the severity of these effects. Research on living situation, social support systems, and personality factors could better inform health and social care professionals to aid the shaping of relevant services. This could support the improvement of psychological wellbeing, maintain and improve overall health outcomes of socially isolated older adults.

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Appendices

Appendix A: Critical Appraisal Tables

Joanne Briggs Institute (JBI) adapted critical appraisal tool	**Author and Year**							
Cross Sectional and Mixed Methods (MM) Studies **only scored and included in total when applicable to study design*	(MM) Clifton et al. (2022)	Corley et al. (2021)	De Pue et al. (2021)	(MM) Fuller &Huseth-Zosel (2021)	Hansen et al. (2022)	(MM) Krendl & Perry (2021)	Moens et al. (2022)	Vitman-Schoor et al. (2021)
1. Were the criteria for inclusion in the sample clearly defined?	0	2	2	2	2	2	2	2
2. Were the study subjects and the setting described in detail?	2	2	2	0	2	2	2	2
3. Were confounding factors identified?	2	2	2	0	2	2	2	2
4. Were strategies to deal with confounding factors stated?	2	0	1	0	2	0	0	1
5. Were the outcomes measured in a valid and reliable way?	2	0	2	1	2	2	1	2
6. Was appropriate statistical analysis used?	2	2	2	2	2	2	2	2
7. *Was loss to follow-up taken into account in the analysis?	n/a	n/a	n/a	n/a	2	0	n/a	n/a
8. * Were confounders accounted for in analyses?	n/a	n/a	n/a	n/a	2	1	n/a	n/a
9. * Were missing data accounted for in the analyses?	n/a	n/a	n/a	n/a	0	0	n/a	n/a
10. * Did authors relate results back to a target population?	2	2	2	2	2	2	2	2
11. * Are the participant voices adequately represented?	2	n/a	2	2	n/a	2	n/a	n/a
Total %	**88%** 14/16	**71%** 10/14	**93%** 13/14	**56%** 9/16	**90%** 18/20	**68%** 15/22	**79%** 11/14	**93%** 13/14

Joanne Briggs Institute (JBI) critical appraisal tool for Qualitative Research	Author and Year			
Qualitative Studies	Pujari et al. (2023)	Falvo et al. (2021)	Mau et al., (2022)	Zablan et al. (2023)
1. Is there congruity between the stated philosophical perspective and the research methodology?	2	2	2	2
2. Is there congruity between the research methodology and the research question or objectives?	2	2	2	2
3. Is there congruity between the research methodology and the methods used to collect data?	0	2	2	2
4. Is there congruity between the research methodology and the representation and analysis of data?	0	2	2	2
5. Is there congruity between the research methodology and the interpretation of results?	2	2	2	2
6. Is there a statement locating the researcher culturally or theoretically?	0	0	1	0
7. Is the influence of the researcher on the research, and vice- versa, addressed?	0	0	1	0
8. Are participants, and their voices, adequately represented?	2	2	2	2
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	0	2	2	2
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	2	2	2	2
Total %	**50%** 10/20	**80%** 16/20	**90%** 18/20	**80%** 16/20

Appendix B: Adapted JBI Critical Appraisal Tool for Quantitative and Mixed Methods

JBI Critical Appraisal Checklist adapted for cross sectional and longitudinal studies

Reviewer_____ Date_____

Author_____ Year_____ Record Number_____

Questions: * Only scored when applicable	Yes	No	Unclear	Not applicable
1. Were the criteria for inclusion in the sample clearly defined?				
2. Were the study subjects and the setting described in detail?				
3. Were confounding factors identified?				
4. Were strategies to deal with confounding factors stated?				
5. Were the outcomes measured in a valid and reliable way?				
6. Was appropriate statistical analysis used?				
7. *Was loss to follow-up taken into account in the analysis?				
8. * Were confounders accounted for in analyses?				
9. * Were missing data accounted for in the analyses?				
10. * Did authors relate results back to a target population?				
11. * Are the participant voices, adequately represented?				

Appendix C: JBI Critical Appraisal Tool for Qualitative

JBI Critical Appraisal Checklist for Qualitative Research

Reviewer_____ Date_____
Author_____ Year_____ Record Number_____

Questions	Yes	No	Unclear	Not applicable
1. Is there congruity between the stated philosophical perspective and the research methodology?				
2. Is there congruity between the research methodology and the research question or objectives?				
3. Is there congruity between the research methodology and the methods used to collect data?				
4. Is there congruity between the research methodology and the representation and analysis of data?				
5. Is there congruity between the research methodology and the interpretation of results?				
6. Is there a statement locating the researcher culturally or theoretically?				
7. Is the influence of the researcher on the research, and vice- versa, addressed?				
8. Are participants, and their voices, adequately represented?				
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?				
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?				

Paper Two: Empirical Paper

Does self-compassion, attitudes to ageing, anxiety and depression predict loneliness in older adults who live alone in the UK, and does self-perceived burden mediate the relationship?

Word count: 7979 (Excluding the title page, references and appendices)

This paper is intended for publication in the 'Journal of Population Ageing'. The referencing style of this paper is APA 7th edition, in line with the journal requirements. Further modifications will be made before submitting to the journal to meet these guidelines.

Abstract

Older adult loneliness increases the risk of depression, cognitive impairment, and dementia. Whilst research has indicated that risk factors of loneliness include bereavement, reduced mobility and low income, there are various inconsistencies about the onset and maintenance of loneliness. Demographic factors, such as being unmarried, having limited social networks, poor self-perceived health, and depressed mood have also been indicated as predictors of loneliness. However, individual and psychological factors related to loneliness have also been explored with some promising but inconsistent findings. The current study explored the relationship between attitudes to ageing, anxiety, depression, self-compassion, self-perceived burden, and loneliness in people over 65 in the UK living alone in the community. Using a cross-sectional multiple regression design, 65 participants, with a mean age of 76, completed self-report measures online or by post. None of the predictors were significant, although the study was under powered. Further research is needed to investigate the separate constructs of social and emotional loneliness alongside other factors, such as how social contact, and the provision of care influences loneliness.

Introduction

Loneliness in older adults

In the UK, an older adult is defined as someone over the age of 65 (NHS England). Approximately 1.4 million UK older adults report often feeling lonely (Age UK, 2018; McClelland, 2023), with an increase since the Covid-19 pandemic (Su et al., 2022). Weiss (1973) proposed two types of loneliness: emotional, describing a lack of close relationships, and social, describing a shortage in the amount or quality of relationships. Widely used in research, Perlman and Peplau's (1981), definition incorporates both emotional and social loneliness, stating that loneliness is a 'mismatch between the quantity and quality of the social relationships that we have, and those that we want', leading to increased unhappiness (Fried et al., 2020; Taylor, 2019). According to Ouellette (2004), experiencing emotional and social loneliness happens when individuals perceive a lack of belonging. Feeling lonely is a multi-faceted and subjective experience, suggested to occur to prompt behaviours such as socialisation to regain social contact.

One perspective on the origin of loneliness is from a social psychological deficit theory, where lonely people may appear to have no observable social deficits but perceive that they lack relationships required for positive wellbeing (DiTommaso & Spinner, 1997). Only restoring relationships will alleviate the problem, however, fulfilling social or emotional loneliness won't reduce overall loneliness if the other remains lacking (Weiss, 1973). Alternatively, the Evolutionary Theory of Loneliness (ETL), proposes that loneliness is an adaptive trait where the negative emotional response is a survival mechanism that encourages social connection seeking (Cacioppo & Cacioppo, 2018). Loneliness acts as a warning system evolved to enable survival through social connection. This differs from social isolation, which is the objective state of being alone (Prohaska et al., 2020; Valtorta et al., 2016). Loneliness increases detrimental health behaviours, such as smoking, and negatively impacts mental health, contributing to low mood (Doane & Adam, 2010). Loneliness contributes to poor life satisfaction, higher levels of anxiety and depression (Zebhauser et al., 2013), increased morbidity, early death (Holt-Lunstad, 2015; Luchetti et al., 2020), increased risk of cognitive decline, and dementia in later life (Courtin & Knapp, 2015). Cardiovascular disease and hypertension risk are higher in lonely individuals

compared to risk factors, like smoking or obesity in those who aren't lonely (Broome, 2016; Cacioppo & Cacioppo, 2013; Ferguson, 2011). Loneliness also increases social withdrawal and frailty, and frailty increases the risk of falls, admission to hospital or the need for long-term care (Davies et al., 2021). Older adult loneliness negatively impacts the health and wellbeing of people worldwide (Clegg et al., 2013), with UK health and social care services predicted to support 8 million older adults by 2050 (Kinsella & Phillips, 2005). The Campaign to End Loneliness was developed in the UK in 2011 to synthesise research and to prevent loneliness (Ferguson, 2011). It has not contributed to significant changes in loneliness, and generating change might require a larger scope of intervention or more targeted strategies (Li et al., 2024).

Evidence into loneliness risk in older adults has highlighted consistent factors including being unmarried, partner loss, limited social networks, infrequent social activity, poor self-perceived health, and depressed mood (Dahlberg et.al. 2021; Petersen et.al, 2016; Wang et al., 2023). Retired older adults have fewer social contacts than working age adults (Domènech-Abella et al., 2017; Haney et al., 2017), with inactivity, boredom, recent losses, and mental health issues also increasing the risk (Cohen-Mansfield et al., 2015). Whilst demographic characteristics and loneliness are linked, the link becomes negligible when other individual or environmental factors are considered (Barjaková et al., 2023). For example, living alone, defined as no-one else sharing an address (Office for National Statistics, 2021; Rolls et al., 2010), does not predict loneliness, as older adults living alone can still be socially active and connected (Hsu, 2020). However, older adults living in a care home reported feeling lonelier, compared to those that did not, highlighting the difficulties in predicting and protecting against loneliness (Drennan et al., 2008; Gardiner et al., 2020). In England and Wales, 30% of those over 65 live alone (Office for National Statistics, 2021), making it pertinent to understand more about living alone and loneliness (Lee & Edmonston, 2019).

Attitudes to ageing

Negative attitudes to ageing increase individual's negative subjective appraisals of health, compared to those with positive attitudes (Low et al., 2013). Public attitudes to ageing include fears that older age leads to health decline and dependency on others (Centre for Ageing Better, 2021). Older adults with negative

age stereotypes of themselves are more likely to engage in unhealthy behaviours, including smoking, and not exercising (Levy, 2009). It is believed that priming effects unconsciously increase the risk of declining potentially life-saving procedures, making worse health-related decisions, and acting in a manner consistent with views about unhealthy ageing (Wurm et al., 2017). Negative attitudes to ageing magnify feelings of loneliness, contribute to poor psychological wellbeing, low self-esteem, self-efficacy and self-esteem. (Kang & Kim, 2022; Kondolf et al., 2020). Loneliness significantly influences the relationship between negative attitudes to ageing and social disconnection, leading to reduced social contact (Hu & Li, 2022). Loneliness is more prevalent among older adults with negative attitudes to ageing, as beliefs that ageing is dull and lonely, reduces social connection (Shiovitz-Ezra et al., 2018). Older adults with negative stereotypes of ageing feel lonelier, believing that loneliness is common (Pikhartova et al., 2016). Increased understanding of how attitudes to ageing and loneliness correlate could help develop interventions that normalise and explore beliefs, to modify them (Jagosh, 2019).

Self-compassion

Self-compassion is crucial to disrupting the self-perpetuating, negative cycle that loneliness can cause, by increasing coping ability through self-kindness and understanding (Andel et al., 2021). Self-compassion is defined as a ‘self-attitude, involving treating oneself with warmth and understanding in difficult times’ (Neff, 2003), and ‘a deep awareness of one’s suffering, coupled with the wish and effort to relieve it’ (Gilbert, 2009). For example, a self-compassionate stance towards experiencing negative emotions, such as sadness and shame, would promote viewing emotions as natural defence mechanisms, rather than being weak (Gilbert & Procter, 2006). More self-compassionate older adults feel less lonely (Ghezelseflo & Mirza, 2020), more motivated, have higher feelings of self-worth, and life satisfaction (Clouston, 2020). Self-compassionate practises, such as meditation, can benefit older adults by increasing self-kindness and reducing personal distress, through recognition that all humans are imperfect, and make mistakes (Neff & Pommier, 2013). More self-compassion improves older adult’s openness to social connectedness, acceptance that difficulties are a part of life and distress is shared by others (Lyon, 2015). Self-compassion has also been found to be a protective factor mitigating the feelings of

loneliness (Akin, 2010). A 6-week self-compassion video intervention targeting older adult loneliness, found that loneliness, stress, and depression reduced significantly (Patapoff et al., 2023), with more evidence needed about the extent to which self-compassion reduces loneliness.

Anxiety and Depression

Anxiety is defined as feeling tense or uneasy, resulting from the anticipation of danger, including situations where no danger is present (Barlow, 2013). Generalised anxiety is strongly associated with loneliness in the general population, including older adults (Beutel et al., 2017). Depression is defined as persistent feelings of sadness, loss of motivation, and may also cause deterioration in sleep, appetite, and feelings of self-worth (Gilbert, 2016). A systematic review found depression increased the risk of becoming severely lonely (Dahlberg et al., 2021). Symptoms of anxiety and depression, frequently coexist due to symptom overlap (Cosco et al., 2012).

Both anxiety and depression influence mood, which is characterised as the state of mind influencing how someone thinks, feels, and behaves (Sekhon & Gupta, 2023). Mood influences general health and psychological wellbeing, contributing to overall quality of life (Diener, 2000; Kelley-Gillespie, 2009). Assessing mood in older adults needs consideration of everyday emotional negative and positive experiences, rather than on clinical diagnoses (Brown & Astell, 2012). Low mood contributes to social disconnection, increasing an individual's negative thoughts and negative interactions (Steger & Kashdan, 2009). People low in mood are more likely to be avoided by other people, with others also feeling more negative as a result (Elmer & Stadtfeld, 2020). Depression can decrease enjoyment for older adults when engaging in activities (Brown & Astell, 2012), whilst anxiety is related to poor well-being, and a bias towards negative information (Bower et al., 2015; Cabrera et al., 2020). Research conducted over a year found that older adults who reported more loneliness, felt more depressed and anxious (Steiner et al., 2022).

Detecting anxiety and depression in older adults living alone can be difficult, as consistent social support is less likely (Abdi et al., 2020). Support for anxiety and depression costs the UK an estimated £117.9 billion annually (Mcdaid & Park, 2022),

and reducing loneliness among older adults is valuable as a cost-effective way to improve the population's overall well-being and health.

Self-perceived burden

Self-perceived burden arises from feelings of dependence, resulting in frustration and worry, which can then lead to negative feelings, including guilt (Cousineau et al., 2003). Self-perceived burden arises from the effect of one's health and care needs on others, when the individual perceives they are responsible for a negative impact (McPherson et al., 2007). By 2035, two-thirds of UK older adults are predicted to have multiple physical health issues (Kingston et al., 2018), putting more pressure on health and social care services. Self-perceived burden can change over time (Van Orden et al., 2010), and influence decision making, due to the perceived consequences or worries about depending on others financially and emotionally (Bell & Menec, 2015; Kuharić et al., 2024). Older adults receiving renal dialysis decided to stop treatment due to the desire to prevent family members the ongoing burden (Ashby et al., 2005).

Dempsey et al. (2012) reported that self-perceived burden mediated the relationship between the inability to wash and dress, and depression in people with movement disorders, such as Parkinson’s disease, with implications for how self-perceived burden influences adaptation to chronic illness. Self-perceived burden influenced cancer survivor’s perception of being more burdensomeness to their caregivers, negatively influencing their well-being (Yeung et al., 2019). A focus group of 163 older adults explored wellbeing in ageing, shared experiences of disrespectful treatment, and beliefs that wider society views older people as a burden (Hoban et al., 2013). Feeling a burden to family leads to a reluctance to discuss health issues, increasing feelings of loneliness (Cahill et al., 2009); however, more self-compassionate older adults report fewer debilitating feelings of being a burden to others (Wirth et al.,2020). Higher levels of perceived burdensomeness correlated with lower levels of self-compassion in a student population (Umphrey et al., 2020), but research is lacking for older adults.

Summary

In summary, whilst separate individual constructs and their influence on loneliness have been investigated, there is no accepted psychological model to predict loneliness in older adults which includes personal characteristics. Evidence suggests that increasing self-compassion can reduce loneliness, and more positive attitudes towards ageing are also protective against loneliness. Additionally, fewer symptoms of anxiety and depression reduce the likelihood of feeling lonely, and not perceiving oneself as a burden to others is associated with less loneliness. Therefore, investigating whether there is a relationship between these relevant psychological variables may provide a psychological model of loneliness, which could support an explanation of loneliness to inform clinical interventions.

Rationale

The UK loneliness strategy recommends 'monitoring loneliness, its drivers and consequences among specific subgroups', such as older adults (Pyle & Evans, 2018), and considering their diverse needs is important (Langmann, 2022). Interventions including counselling, support groups for health conditions, and companionship schemes have shown mixed effectiveness in reducing loneliness in older adults living in the community (Wilson & Bickerdike, 2014), and identifying which components are effective has been challenging, as they are often not informed by evidence (Fakoya et al., 2020). With no clear predictors of the individual characteristics for older adults that experience loneliness (Chawla et al., 2021), identifying predictors of loneliness in those living alone, may enable the development of targeted and effective interventions.

Over 3.3 million people over 50 in the UK report rare or no social contact in person, over the phone, or online day to day (Boulton, 2024), however over 6 million older adults experiencing loneliness reported that a few minutes of conversation makes a difference to their week (Age UK, 2019). A literature review found inconsistent conclusions about the effects on loneliness of the number and type of social contacts, and whether increasing the amount of social contact reduces loneliness (Gray & Worlledge, 2016). It is important to gather descriptive data in the current study, as social contact could impact the findings. However, the aims of the current study are not related to social contact predicting loneliness, therefore, social contact is not included as a variable. There is a gap in the literature investigating the variables

selected for the current study collectively, which could provide a further understanding of the psychological causes of loneliness to inform interventions. Given the theoretical understanding of self-perceived burden (Cousineau et al., 2003), it is hypothesised that self-perceived burden will mediate the relationship between depression and loneliness. This would support targeting self-perceived burden within psychosocial interventions for older adults experiencing loneliness. Perlman and Peplau's (1981) definition of loneliness, describing a subjectively unpleasant experience, which encompasses both emotional loneliness; the absence of wanted companionship, and social loneliness; a small social network, is used in this study.

Aims and Hypotheses

This study aims to investigate predictors of loneliness in older adults living in the community, and the following hypotheses:

1. Lower levels of self-compassion, more negative views of ageing, higher symptoms of depression and anxiety, and greater self-perceived burden will predict higher levels of loneliness.

2. Self- perceived burden will mediate the relationship between depression and loneliness, such that, depression leads to increased self-perceived burden, which in turn leads to increased loneliness.

Method

Design

The study used a quantitative cross-sectional survey design. Participants were recruited online, face to face, and via post and all participants provided informed consent before participating. The study was approved by the Ethics Committee of Staffordshire University's School of Health, Science and Wellbeing (Appendix A). The study takes a pragmatic epistemological position, which enables researchers to employ methodological and theoretical strategies that are best suited for addressing the research question (Kaushik & Walsh, 2019).

Inclusion and Exclusion Criteria

Study eligibility included adults over 65 years old, retired from paid employment, living alone in the community. Those in receipt of paid or voluntary care were excluded. Excluding participants who received care on a formal or informal basis aimed to recruit participants who were similar in their lifestyle, as it was assumed that without the need for care, participants could function independently day to day. The exclusion also aimed to prevent confounding variables relating to the need for care due to the range of reasons that someone may require carer support and variation in the amount of care per week.

Procedure

Participants were recruited from the UK general population, using convenience sampling.

Online recruitment

Advertisements were posted on the researcher's social media. Older adults were invited to visit the web-based survey software Qualtrics (http://www.qualtrics.com) using a QR code or a unique web address. This directed participants to an online participant information sheet, and it was not possible to access the study without completing the consent form (Appendix C). Participants were asked to create a participant ID code, enabling anonymous completion, and the option to withdraw from the study. Clicking 'no' to the consent question terminated the survey. On completion of the survey, debrief information was provided, including agencies offering support if required (Appendix J).

Postal recruitment

Research adverts also had the researcher's contact details on in order to request paper questionnaire pack, including a return stamped addressed envelope. The researcher also posted recruitment adverts and questionnaire packs to local older adult community organisations, including Age UK, in the West Midlands. Questionnaire packs were allocated a participant ID code, enabling anonymous

completion, and the option to withdraw from the study. The researcher attended Staffordshire Age UK groups in person in June and July 2023 to promote the research and distribute postal questionnaire packs to those eligible. There was no accurate way to record response rate. Postal packs were returned to the researcher in a pre-paid, sealed envelope to maintain anonymity and confidentiality. The researcher inputted the data to a secure database merged with the online responses for analysis.

Data collection took place from June to December 2023. Participants were asked to provide a contact address if they wished to receive a summary of the findings upon completion of the research. Those who provided an address were sent the executive summary of the study results by the researcher.

Participants

Participant demographics are presented in Table 1; detailing 65 participants (22 online, 43 postal), with ages ranging from 66-93 years old (M= 76, SD= 7.2).

Demographic variables gathered included age, gender, ethnicity, accommodation status and amount of social contact per week (Appendix I). Gathering the average weekly amount of in person and virtual contact for participants provided a useful overview of social contact and would highlight if there were large differences between participants.

Two respondents accessed the link on Qualtrics but did not proceed to the consent form, therefore, were assumed to have withdrawn from the study.

Table 1

Sample Characteristics

Demographic Characteristic	*N* (%)
Gender	*N* = 65
Female	48 (74%)
Male	17 (26%)
Ethnicity	N = 65
White British	42 (64.6%)
British Welsh	2 (3.1%)
White English	6 (9.2%)
White Scottish	4 (6.2%)
White New Zealand	1 (1.5%)
Not stated	10 (15.4%)
Weekly social contact	*N* = 65
No virtual or in person contact	10 (15.3%)
Both virtual and in person contact	44 (67.7%)
Only in person contact	5 (7.7%)
Only virtual contact	6 (9.3%)
Location	*N* = 65
Buckinghamshire	2 (3.1%)
Derbyshire	2 (3.1%)
Glasgow	8 (12.3%)
London	2 (3.1%)
Manchester	2 (3.1%)
Midlands	14 (21.5%)
Staffordshire	13 (20%)
Not stated	22 (33.8%)
No	4 (12%)
Accommodation owned outright	*N* = 65
Yes	29 (44%)
No	36 (56%)

Measures

Five standardised measures were selected based on their use in previous relevant research, ease, speed of completion, and their established psychometric properties.

University of California Los Angeles (UCLA) Loneliness Scale, 8 items (ULS-8) (Hays & DiMatteo, 1987) (Appendix D)

The ULS-8 is a short form of the Revised ULS-20 (Russell et al., 1978), with 8 items designed to measure the severity of subjective feelings of social and emotional loneliness. It is suitable for use in individuals, from adolescence to older adults, using a 4-point Likert scale, ranging from 1 (never) to 4 (always). Individuals rate statements such as 'I lack companionship' and 'There is no one I can turn to' with the total score revealing a general loneliness score. There are no clinical norms or cut-off scores, with total scores range from 8 to 32, with higher scores reflecting higher levels of loneliness. There is a high correlation (r = 0.91) between ULS-8 and the ULS-20, although the ULS-8 is beneficial as it takes less time to complete. Data obtained from older adults indicated high internal consistency (Cronbach's α = .84) (Neto, 2014). In this study, internal consistency was good (Cronbach's α = .72).

Interpersonal Needs Questionnaire Burdensomeness Scale (INQPBS), (Hill et al., 2015) (Appendix E)

The INQPBS measures self-perceived burden deriving from the Interpersonal Needs Questionnaire (INQ,) which assesses perceived burdensomeness and thwarted belongingness together (Van Orden et al., 2012). Different forms of the INQ are available, with the 6 item INQPBS recommended for research to assess self-perceived burden. Statements include 'I think I am a burden on society' and 'The people in my life would be happier without me'. Participants rate statements on a seven-point Likert scale, ranging from 1 (not at all true for me) to 7 (very true for me), with total scores ranging from 6 to 42 with higher scores reflecting higher levels of perceived burdensomeness. The INQPBS has demonstrated strong psychometric properties, including construct validity among older adults (Cronbach's α = .85 to .94) (Van Orden et al., 2008). In this study, internal consistency was excellent (Cronbach's α = .95).

The Self-Compassion Scale, Short Form (SCS-SF), (Raes et al., 2011) (Appendix F)

The SCS-SF measures self-compassion using two subscales; self-disparagement and self-care, with subscale scores enabling calculation of a total self-compassion score. The scale has 12 items, scored on a 6-point Likert scale. Individuals rate statements such as 'I try to see my failings as part of the human condition' and 'When I'm going through a hard time, I give myself the caring and tenderness I need' on a scale ranging from 0 (Almost never) to 5 (Almost always), with some items reverse scored. There are no clinical norms or cut-off scores, with total scores range from 12 to 60, and higher scores are indicative of higher self-compassion. The short form has good internal consistency and correlates with the long 26 item SCS, r ≥ .97. The SCS-SF demonstrated adequate internal consistency (Cronbach's α = .68) in an older adult sample (Bratt & Fagerström, 2019). In this study, internal consistency was adequate (Cronbach's α = .64).

Hospital Anxiety and Depression Scale (HADS), (Snaith & Zigmond, 1986) (Appendix G)

The HADS is used to assess the symptom severity of anxiety and depression symptoms in the general population and is commonly used in research. The HADS has 14 statements: 7 for anxiety and 7 for depression. Individuals rate statements representing how they have felt over the last week, such as 'I feel tense or wound up' and 'I enjoy the things I used to enjoy'. Each statement is scored between 0 (not at all) and 3 (most of the time), with total scores ranging from 0 to 21 for both anxiety and depression. Higher scores indicate higher levels of anxiety and depression. The HADS can assess anxiety and depression among a general population aged 65 years old (Djukanovic, 2017), with excellent internal consistency for anxiety (Cronbach's α = .87) and for depression (Cronbach's α = .81) symptoms. In this study, internal consistency for anxiety was excellent (Cronbach's α = .83) and was adequate for depression (Cronbach's α = .69).

The Attitudes to Ageing Questionnaire, Short Form (AAQ-SF), (Laidlaw et al., 2017) (Appendix H)

The AAQ-SF measures attitudes to ageing and is a 12-item scale with three subscales: psychosocial loss, physical change, and psychological growth. Consisting of 12 items, including 'It is a privilege to grow old' and 'There are many pleasant things about growing older', individuals rate items on a 5-point Likert scale. Scores range from of 1 (strongly disagree) to 5 (strongly agree), with a total score ranging from 12 to 60. Higher total scores indicate more positive attitudes towards ageing. The 12-item AAQ-SF reported adequate internal consistency for an older adult population (Cronbach's α = .62 to .72) (Low et al., 2023). In this study, internal consistency was adequate (Cronbach's α = .65).

Power Analysis

A power calculation was undertaken to determine the required sample size (Soper, 2015). In view of similar research (Lee at al., 2018; Mahon et al., 2006) a medium effect size (0.15) was selected (Cohen, 1992), with five predictors (attitudes to ageing, anxiety, depression, self-perceived burden and self-compassion), power set at 0.8 and alpha at 0.15, 91 participants were required.

Data Analysis

All data was transferred for data analysis into the Statistical Package for the Social Sciences (SPSS) for Windows, version 29 (IBM Corp, 2022). All variables were entered, and a standard multiple regression analysis was performed.

Data Screening

Fourteen participants missed questionnaire items, accounting for 3.8% of the overall data, although this was predominantly demographic data, with only 0.1% of data missing from the variables used in the regression analysis. To determine whether imputation, the process of replacing missing data with substituted values was necessary, Little's test was performed (Little, 1988). The test verifies the assumptions that data is missing completely at random for multivariate, quantitative data. The test indicated that data was Missing Completely at Random (MCAR), due to the non-

significant result (Chi-Square = 740.17, DF = 710, p = .210), demonstrating that data are randomly distributed across the variable, and unrelated to other variables (Li, 2013) (Appendix L). Given this, and the suggestion that <5% of missing data is acceptable (Madley-Dowd et al., 2019), participant mean substitution was used to manage the missing data, rather than multiple imputation. The mean is a reasonable estimate for a randomly selected observation from a normal distribution (Bono et al., 2007).

Statistical Assumptions

Data checks were completed to see if the data significantly violated the assumptions for a multiple regression analysis, including absence of outliers, normality, homoscedasticity, linearity, absence of multicollinearity, and independence of residuals (Field, 2017).

The histogram, Kolmogorov-Smirnov statistic, skewness, and kurtosis value indicated that self-perceived burden significantly deviated from normality (Appendix K). The kurtosis statistic was 10.301, outside the suggested range -7 to +7, which demonstrates normality (Byrne & van de Vijver, 2010), with a positive skew evident, although no other statistical assumptions were violated (Appendix K). Log transformation was considered, to resample the data, but has been shown to increase Type-II error in regression (Russell & Dean, 2000), when compared to other methods such as bootstrapping. Bootstrapping is a robust random re-sampling method which can be used when the sample differs from normality, estimating the properties of the sampling distribution using the study data (Field, 2017). When observational data violate normality assumptions, randomisation techniques like bootstrapping offer a way to obtain *p* values and confidence intervals for parameter estimates from the data that deviates from normality (Good, 2005).

Analysis of residuals indicated that they were not highly correlated for the regression analysis, all but self-perceived burden were normally distributed on a P-P plot, and randomly distributed in a scatter graph. The Cook's Distance values were within normal limits (< 1). Casewise diagnostics identified two cases (0.03%) of the regression model for loneliness with a standard residual below -2, with none above 3.

This is below the typically accepted level of 5% and thus no action to deal with influential points was needed.

Method of Analysis

Bootstrapping was deemed the most appropriate way to address the violation for the self-perceived burden data. Bootstrapped correlations (Table 3) between the study variables were carried out, followed by a multiple regression analysis with bootstrapping (Appendix M). A multiple regression analysis was carried out to explore the relationship between the independent variables (attitudes to ageing, self-perceived burden, anxiety, depression, and self-compassion) and the criterion variable (loneliness).

Results

Descriptive Statistics

The mean, standard deviation and range for the dataset are presented in Table 2.

Table 2

Descriptive statistics for each variable (n = 65).

	M	SD	Range
Attitudes to Ageing	34.37	6.3	19-58
Anxiety	8.37	4.5	0-18
Depression	7.20	3.7	0-15
Self-perceived Burden	8.67	6.1	6-37
Self-Compassion	35.32	6.4	12-48
Loneliness	23.35	6.9	9-32

Correlations

There was a weak positive correlation between loneliness and self-perceived burden (r =.258, p < 0.05); thus, as loneliness increases, self-perceived burden increases. There was a weak positive correlation between self-perceived burden and depression (r = .376, p < 0.001); thus, as self-perceived burden increases, depression also increases. There was a weak positive correlation between anxiety and depression (r = .409, p < .001); thus, as anxiety increases, depression increases. There was a weak positive correlation between self-compassion and anxiety (r = .343, p < 0.01); so, as self-compassion increases, anxiety increases. There was no significant relationship between loneliness and self-compassion (r =.061, p = .315), between self-perceived burden and attitudes to ageing (r = -.081, p = .260), anxiety and attitudes to ageing (r = -.078, p = .268), self-compassion and attitudes to ageing (r =-.141, p = .132), self-compassion and self-perceived burden (r = .071, p = .286), self-compassion and depression (r = .095, p = .226), and between loneliness and attitudes to ageing (r =-.052, p = .340). For original output, see Appendix M.

Table 3

Bootstrapped Pearson's r correlations for the study variables (n =65).

Variable	1. Loneliness	2. Attitudes to Ageing	3. Self-Perceived Burden	4. Anxiety	5. Depression	6. Self-Compassion
1. Loneliness	-					
2. Attitudes to Ageing	-.052	-				
3. Self-perceived Burden	.258*	-.081	-			
4. Anxiety	.173	-.078	.161	-		
5. Depression	.108	.027	.376**	.409***	-	
6. Self-Compassion	.061	-.141	.071	.343**	.095	-

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

Multiple Regression Analysis

Following bootstrapping, a multiple regression analysis was conducted for anxiety, depression, attitudes to ageing, self-compassion, and self-perceived burden as predictor variables, and loneliness as the criterion variable (Appendix M). All predictors were entered into the model at the same time (Table 4). The bootstrapped confidence intervals were compared to those prior to bootstrapping and were similar, although slightly larger to those in the original model (Table 4). This suggests that the degree of violation was minimal and that the bootstrapping enabled a confidence interval containing the true population parameter.

The regression model was not significant ($F_{(5,64)} = 1.31$, $p > .05$), accounting for 10.5% of the total variance in loneliness (2.5% when adjusted). Anxiety (β = .114, $p = .33$), depression (β = -.077, $p = -.610$), attitudes to ageing (β = .10, $p = .425$), self-compassion (β = -.09, $p = .504$), and self-perceived burden (β = .20, $p = .123$) were not significant predictors of loneliness.

Table 4

Multiple regression analysis of attitudes to ageing, self-perceived burden, anxiety, depression and self-compassion, as predictors of loneliness, with and without bootstrapping (n = 65)

	Multiple Regression						Bootstrapping				
	B	SE B	β	Sig.	95% CI		Bias	SE B	Sig.	95% BCa CI	
					Lower	Upper				Lower	Upper
Constant	8.15	5.2		.12	-2.30	18.59	.197	4.58	.08	-.48	17.48
Attitudes to Ageing (AAQ-SF)	.088	.11	.10	.43	-.13	.30	-.015	.09	.34	-.12	.26
***Self-Perceived Burden (INQPBS)**	.17	.11	.22	.12	-.05	.39	-.001	.13	.10	-.07	.42
Anxiety (HADS)	.15	.16	.14	.33	-.17	.47	.019	.16	.33	-.14	.52
Depression (HADS)	.10	.20	.08	.61	-.30	.50	-.002	.201	.62	-.30	.49
Self-Compassion (SCS-SF)	-.08	.11	-.09	.50	-.30	.15	.006	.09	.40	-.26	.12

Note. R^2 = 10.5%; Adjusted R^2 = 2.5%. Unstandardised coefficient, standard error, standardised coefficient, significance values and confidence intervals are presented, along with bootstrapping comparison with results based on 1000 bootstrapped samples. *Self-perceived burden data demonstrated violation to normality at data screening.

Mediation Analysis

No mediation analysis was performed. None of the predictors were significant, therefore no intervening variable between the predictors and criterion variable could be analysed (Wiedermann & Von Eye, 2015).

Discussion

The first hypothesis that lower self-compassion, negative views of ageing, higher symptoms of depression and anxiety, and greater self-perceived burden will predict higher levels of loneliness in older adults living alone in the UK was not significant. The null hypothesis is accepted, and a post-hoc power analysis calculation of the study was performed (Collins & Watt, 2021). The observed statistical power was 0.50 (Soper, 2015), confirming that this study was underpowered, reducing the chance of detecting a true effect (Button et al., 2013). This demonstrates that the current sample could be too small to identify the extent of the relationship or to detect effects.

The second hypothesis that self-perceived burden will mediate the relationship between depression and loneliness, was not examined. This was due to the non-significant multiple regression analysis outcome.

The sample's overall mean loneliness score was 23.35 (*SD* = 6.9), sitting around the middle of the possible total score. The ULS-8 does not have clinical norms, but this score is marginally below a suggested cut-off of 24 for loneliness (Wang et al., 2019). This is consistent with evidence that of 346 older adults living alone, 70% with a functioning social network and no symptoms of depression, did not feel lonely (Zebhauser et al., 2014). Additionally, research suggests that being alone can be a positive experience, if older adults experience enjoyment and positive feelings (Switsers et al., 2022). The findings of this study also support the suggestion that loneliness is not increasing as indicated for all older adults (Dykstra, 2009). Current findings suggest that the sample were not experiencing high levels of loneliness and contradict previous research finding that older adults living alone experience loneliness (Perissinotto & Covinsky, 2014). Although, research during the pandemic found that participants of all ages scored a mean score of 17.5 on the ULS-8, indicating the current study sample scored higher by comparison (Hoffart et al., 2020).

Furthermore, the sample scores for the predictor variables showed that negative attitudes to ageing were not high (*M* = 34.37, *SD* = 6.3), and that self-compassion scores were around the middle to high range (*M* = 35.32, *SD* = 6.4). Low scores were also shown for symptoms of depression (*M* = 7.20, *SD* = 3.7), anxiety (*M* = 8.37, *SD* = 4.5), and self-perceived burden (*M* = 8.67, *SD* = 6.1). This could account for the findings, as the sample demonstrated conservative scores, reducing the chance that there would be an explanatory relationship between the predictor variables and loneliness.

In this study, 67.7% of participants had in person and virtual contact, compared with 15.3% who reported neither in a typical week. Therefore, two-thirds of the sample were receiving some form of social contact, suggesting that this may have been a confounding factor. It is not possible to know the perceived quality of this contact, however, previous research indicates that older adults are less likely to feel lonely when engaging in what is perceived to be frequent, quality social interactions (Kuczynski et al., 2021; Schutter et al., 2022; Victor et al., 2005). This is relevant to the current study, suggesting that despite the amount of social contact, perceived quality could protect participants against loneliness.

The postal response (66%) for this study were higher than the online response (34%). This aligns with evidence that older adults prefer a paper questionnaire, although, it is beneficial to support a mixed-mode approach in research, offering online and paper options for older people (De Bernardo & Curtis, 2012). Fewer online responses could be due to less access and proficiency with online methods, or lower educated, lower income older adults being less likely to use the internet (Kelfve et al., 2020). The researcher attending and handing out postal questionnaire packs to Age UK groups could have increased postal responses, along with the benefits of ensuring participants were familiar with the process of returning the questionnaires and explaining confidentiality. A strength of the current study is that there were no identified outliers and minimal missing data; 0.1% from study questionnaires, with a total of 3.8% when including the demographic data. This may be due to questionnaire completion taking no longer than 15 minutes, which can be beneficial to maintain participant interest and reduce the likelihood of missing data (Sharma, 2022). Hardy et al. (2009) suggest that missing data from questionnaire studies is more likely to occur in studies

of older adults due to more health and functional problems. However, adapting data collection by providing the postal option in the current study may have prevented missing data. This is useful for future studies to increase participant numbers and reduce the likelihood of missing data.

The current study does not support evidence that individual variables, e.g., depression, are associated with loneliness (Schnittger et al., 2011), as no significant relationship was found. The current findings offer support for evidence suggesting that loneliness is reduced in older adults who have established and maintained social contacts (Pinquart & Sorensen, 2001), due to the absence of high scores on the loneliness measure, and the number of participants who indicated that they have more than 20 hours of social contact on average per week (n = 50, 83.3%).

Alternate predictors of individual differences may result in a different outcome, such as, utilising effective coping skills to increase resilience has been shown to help cope with feeling lonely (Ribeiro-Gonçalves et al., 2023). Unaccounted confounding variables may have influenced the current study results. For example, being younger with low financial strain are protective against loneliness (Victor et al., 2020), and pet ownership reduces loneliness, increases socialisation, and increases resilience in older adults (Gan et al., 2019). Disability increases the risk of loneliness, due to restrictions for social participation (Macdonald et al., 2018), which may not have been present in the current study sample. Also, feeling socially connected to their community by visiting local amenities, such as shops, libraries, and the inclusion of voluntary work, has been shown to alleviate feelings of older adult loneliness (Sundström et al., 2020).

There was a significant positive correlation between self-compassion and anxiety, suggesting more self-compassion contributes to more anxiety. This is understandable considering self-compassion involves being aware of the present moment (Neff, 2009), bringing awareness to anxiety, and could be explored further in future research. The findings do not align with research that loneliness is less likely for older adults who are more self-compassionate (Ghezelseflo & Mirza, 2020).

Clinical Implications

It is important to highlight that in the current study the total scores were generally low for all variables, meaning it was not possible to address the goals of investigating individual predictors of loneliness. Current findings suggest that alternative factors contribute to older adult's varied and complex experiences of loneliness. This highlights that loneliness is not a factor of the ageing process, as a variety of ways effectively mitigate the risk for older adults (Ward et al., 2019).

More postal responses, when compared to online have implications for older adult services. NHS England (2019) promotes the use of telephone and video consultations, alongside virtual services, therefore offering the option of in person or postal communication needs to be considered. Signposting older adults to community groups could increase social contact to prevent loneliness (Lind et al., 2022). However, as more extroverted people have a higher predisposition to connect with others socially so may be more willing to engage in community-based groups than more introverted people (Tapia-Munoz et al., 2023). Involving older people in the design and delivery of services may provide insights into the detection of loneliness and address social and health inequalities through community-based strategies (Van Hoof et al., 2021).

Loneliness can be chronic, but it can also be temporary, such as when facing stressful life events (Awad et al., 2023). Research proposes that effects of loneliness, such as depression, persist even after loneliness subsides (Wolska & Creaven, 2022). Therefore, measuring loneliness can be problematic, and criticism of existing measures has highlighted how the subjective element of loneliness is missing across many validated measures (Maes et al., 2022). Clinical settings would benefit from taking this into account when assessing loneliness in older adults, and not assume that all older adults living alone are at risk of being lonely.

Limitations

The application of these findings is tentative, due to the study being underpowered, indicated by the post-hoc power analysis. Therefore, study replication is required with a larger sample.

This study did not investigate the quality of social interaction but found that 43.1% (n = 28) of participants self-reported having over 40 hours of social contact per week. This may have included attendance at community groups, which participants were recruited from, and could have skewed the sample, by providing companionship, and relieving boredom. Obtaining more details about the nature of group attendance could have been useful. Previous research suggests that weekly in-person social contact reduces the likelihood of loneliness (Green et al., 2021). In contrast, evidence indicates that social contact can amplify loneliness, and is associated with worse well-being than being alone (Stavrova & Ren, 2023). This may be due to negative social interactions, caused by feeling lonely. However, it is argued that measuring only the quantity of social contact offers limited information regarding how much it reduces loneliness (Valtorta et al., 2016). This is important when thinking about interventions that may prevent or reduce loneliness, as ensuring access to social contact may be advantageous.

Due to the larger number of participants recruited by post, the sample may not be representative of older adults who use the internet. Experts by experience were not included in the study development and design, which also may limit the overall aims and recruitment (Domecq et al., 2014). Validated self-report measures were used due to their ease and reliability. However, disadvantages include a limited range of answers that may not fit participants' desired responses, social desirability bias, questions being misunderstood, and inaccurate reporting (Bergen & Labonté, 2020). The lack of ethnic diversity limits generalisability beyond this sample, as most participants were white British, with a paucity of research on loneliness among ethnic minority groups (Cotterell et al., 2024). Additionally, sight loss may have excluded older adults, as approximately 2 million people over 65 are thought to be sight impaired (Age UK, 2015). The current study didn't cater for those with sight loss, which future studies could do by employing methods, such as braille, to enable participation (Tanner et al., 2018).

The reliability of the loneliness (α = .72), self-compassion (α = .64), and depression (α = .69) measures in the current study were lower than expected. This may have been due to inconsistent responses, as a substantial number of random responses would reduce the internal reliability (Fong et al., 2010). It could also suggest

that some of the items are not representative of what was intended to be measured, and results should be interpreted with caution. Other potential reasons for lower internal consistency include the variables not being relevant to the study sample, or the small number of items used to measure the variable. Replicating the study with a larger sample or using a repeated measures design, could increase reliability and provide insight into the outcomes of the current study. There is no validated measure of self-perceived burden designed for community living older adults, therefore, the INQPBS for measuring self-perceived burden accurately for those living alone is limited. Developing a reliable scale for older adults living alone without care provision to measure self-perceived burden in future research would be beneficial.

Due to the cross-sectional nature of the current study, temporary experiences of loneliness may not have been captured. Cross-sectional studies are inexpensive and easy to conduct, aiding understanding of prevalence, but prevent the ability to make causal inferences, and assess incidence (Wang & Cheng, 2020). They are also susceptible to selection bias, which may have influenced this study, contributing to a sample that does not represent the general population.

Future Research

This research contributes to existing evidence predicting loneliness in older adults; however, future research should aim to recruit a larger sample size to allow for better statistical inference and detect smaller effects in the relationship.

Future research separating the constructs of social and emotional loneliness would also be beneficial. It is possible that the more subtle features of social and emotional loneliness were overlooked in this study. Previous research has found that emotional loneliness is more damaging for health, associated with increased risk of mortality in older adults living alone (O'Súilleabháin et al., 2019). Emotional loneliness includes feelings of emptiness, and abandonment, (Van Tilburg, 2020), with evidence suggesting that it varies throughout life (Hutten et al., 2021). Exploring social and emotional loneliness as separate dimensions, is suggested to inform specific intervention strategies, which can be developed for older adults with unmet needs (Fierloos et al., 2021). Studies have indicated that social and emotional loneliness share limited variance (Dahlberg and McKee, 2014; De Jong Gierveld & Van Tilburg,

2006; Green et al., 2001), therefore, measuring them separately may help clinical setting differentiate between the distinct pathways.

More women (39.2%) than men (21.8%) live alone in the UK (Office for National Statistics, 2023), reflected in more female respondents in this study (74%). Women may be more likely to admit to being lonely when compared to men (Luanaigh & Lawlor, 2008). It is also suggested that women establish a bigger, more active social network, perhaps buffering them from loneliness (Pinquart, 2003). This contradicts the online BBC Loneliness study, which found that loneliness was higher overall among men than women, opposing other research findings (Barreto et al., 2021). This could be because of how men express loneliness, which an online survey might have enabled, and it may be useful to consider how gender differences influence the experience and self-reporting of loneliness in future research. Previous research suggests that widows were lonelier than those who were married, but weekly voluntary roles of two hours or more, reduced loneliness to align with married older adults (Carr et al., 2017). Furthermore, Hagani et al. (2024) found that in Western countries, loneliness was significantly lower for those who were socially engaged and had voluntarily retired, compared to involuntary retirement and limited social engagement. The influence of marital status and voluntary roles were not examined in this study; therefore, would be beneficial to consider in the future.

Assessing the impact of different levels of care in the community, including but not limited to, professional carers, unpaid carers, or warden-supported accommodation, was beyond the scope of the current study. However, considering to what extent care and support provided in the home influences loneliness, would be useful to explore. According to Woolham et al. (2013), lonely older individuals are more likely to be receiving help from unpaid carers with personal care. There is a lack of evidence relating to how different levels of care contribute to perceived social support and influence loneliness.

The subjective and changing experience of loneliness could be explored using qualitative or mixed-methods research, with older adults and healthcare staff to help aid the detection of loneliness in clinical settings (Newman et al., 2024). Recognising individual circumstances is also important to understand varied experiences (Buecker et al., 2023), as two people may experience loneliness, however, the causes may

derive from different appraisals of a situation. Future research may benefit from exploring the influence of difficult life events, as Ejlskov et al. (2019) suggest a link between difficult social relationships in early life and higher loneliness in later life. Furthermore, research was conducted on how personality factors including extroversion, neuroticism, agreeableness, conscientiousness, and openness to experience were associated with loneliness. Greater neuroticism was linked to more loneliness over eight years, and only extroversion was associated with reduced loneliness, regardless of social isolation, sociodemographic, economic, and health factors (Tapia-Munoz et al., 2023). Future research investigating whether assessing personality traits could aid improved detection and prevention strategies, relating to the risk of loneliness.

Conclusion

This study contributes to the limited research about loneliness and individual factors. Attitudes to ageing, anxiety, depression, self-perceived burden and self-compassion were not significant predicts of loneliness for community older adults living alone. The study was underpowered, the sample did not report high levels of loneliness, and confounding factors such as the influence of social contact and the provision of care were not considered.

Further research with a larger sample size is required. Investigating the separate constructs of social and emotional loneliness, the provision of care, or engaging in voluntary or paid employment influences loneliness could aid understanding of the relationship between loneliness and individual factors.

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Appendices

Appendix A - Ethical approval letter

School of Health, Science and Wellbeing

ETHICAL APPROVAL FEEDBACK

Researcher name:	Rosie Sibley
Title of Study:	SU_22_265: Does self-compassion, attitudes to ageing, anxiety and depression predict loneliness in older adults who live alone in the UK, and does self-perceived burden mediate the relationship?
Status of approval:	Approved

Thank you for addressing the committee's comments. Your research proposal has now been approved by the Ethics Panel and you may commence the implementation phase of your study. You should note that any divergence from the approved procedures and research method will invalidate any insurance and liability cover from the University. You should, therefore, notify the Panel of any significant divergence from this approved proposal. This approval is only valid for as long as you are registered as a student at the University. You should arrange to meet with your supervisor for support during the process of completing your study and writing your dissertation.

When your study is complete, please send the ethics committee an end of study report. A template can be found on the ethics BlackBoard site.

Signed: 

Date: 31/05/2023

Dr Jade Elliott, Ethics Co-ordinator , Psychology ,
School of Health, Science and Wellbeing

Appendix B- Confirmation that AGEUK will support research promotion.

You replied to this message on 23/01/2023 13:31.

From: Rosemary Sibley (RRE) MPFT <Rosemary.Sibley@mpft.nhs.uk>
Sent: 04 January 2023 12:56
To: Info <info@ageukstaffordshire.org.uk>
Subject: Enquiry

Hello,

I am a Trainee Clinical Psychologist undertaking a doctorate at Staffordshire University. As part of my thesis, I am extremely keen to carry out some meaningful research into the experiences of older adults. My main research interests are focused around self-perceived burden, levels of self-compassion and the relationship to loneliness.

Although I am in the initial stages of seeking approval to carry out the research to ensure it is ethical, I am keen to think about how to reach as many people as possible. I anticipate some challenges in doing so online, so I am interested to know whether you offer any channels to advertise the opportunity to take part in research to stakeholders of AGE UK; either through local community groups, online forums or your charity shops? This is likely to be in the form of a poster with my contact details on.

I have been unsuccessful in contacting specific person that could help through head office, hence my contact via a local contact.

Many thanks,

Rosie Sibley (she/her)

Thu 19/01/2023 11:48

J >

EXTERNAL Research

To Rosemary Sibley (RRE) MPFT

Cc

You replied to this message on 23/01/2023 13:31.

Hi Rosie,

I am emailing you to confirm that you are very welcome to come out to our Ageing Well Project Exercise groups to talk to our clients about your research and to invite them to take part. I have checked with our Chief Exec and he feels that your research is important and he is happy for our Charity to be involved. Our exercise groups are in Fenton, Longton, Bucknall and Stoke. Please see our website for the addresses;

https://www.ageuk.org.uk/staffordshire/activities-and-events/ageing-well-exercise-groups/

When you are ready just let me know and then we can make arrangements for this and I can come along also to introduce you to the groups,

Many thanks

Appendix C- Participant Information Sheet and Consent Form

Version Number 1.2: November 2023- Project Reference Number: SU_22_265

INFORMATION SHEET FOR PARTICIPANTS

Title of study: Does self-compassion, attitudes to ageing, anxiety and depression predict loneliness in older adults who live alone in the UK, and does self-perceived burden mediate the relationship?

Invitation to take part

You are invited to participate in this research, which forms part of a Doctoral thesis in Clinical Psychology which is the study of thinking and behaviour. The research is being undertaken by Rosie Sibley, at Staffordshire University. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please see the contact details below if there is anything that is not clear or if you would like more information.

What is the purpose of the study?

This research study aims to look at whether showing compassion to yourself, attitudes to getting older, anxiety and depression alter whether people feel loneliness for people over 65 who live alone in the UK. The study will also look at whether feeling a burden to others effects loneliness.

There has been a lot of research about things that that influence feelings of loneliness, and this research aims to look closely at some areas which are less well research ed. Showing compassion, attitudes to getting older, anxiety and depression have been looked at separately, but this study hopes to see if there is a link between them.

In finding this out it is hoped that we can understand more helpful ways to support older people and prevent the experience of loneliness in ageing.

Why have I been invited to take part?

You have been invited to take part as you are over 65 years old and retired from paid work. You also live alone in the UK and no not live in a care home, nursing home or supported living accommodation. By taking part, you are confirming that you do not require any formal carer input.

What will happen if I take part?

You will be asked to complete some questionnaires which should take no longer than 15 minutes in total to complete. If you decide to take part in the study, you will be given a participant number which will be unique to you and will be used as a way to make sure your identity is kept anonymous.

Do I have to take part?

Taking part is completely voluntary. Once you have read the information sheet, please make contact if you have any questions that will help you make a decision about taking part. If you decide to take part, we will ask you to confirm that you are doing so willingly and you will be given your unique identification number. If you change your mind and wish to remove yourself from the study, and you can use your identification number to contact the researcher and ask to be removed.

What are the possible risks of taking part?

By taking part in the research, you may be at risk of experiencing negative feelings due to being asked some questions about your opinion on several topics related to loneliness, mood, and general wellbeing. The researcher has made efforts not to cause distress, and the research is not intended to cause negative feelings.

However, if needed there is information and support available if required at the website:

Campaign to End Loneliness: https://www.campaigntoendloneliness.org/helpful-links/

Or by telephone to AGE UK: 0800 169 6565

If you would like someone to talk to, the Samaritans can be contacted 24 hours a day by phoning 116 123.

What are the possible benefits of taking part?

By taking part in the research, you may feel good about being involved in research to know more about the experience of loneliness in relation to ageing.

Data handling and confidentiality

Your data will be processed in accordance with the data protection law and will comply with the General Data Protection Regulation 2016 (GDPR). All electronic data will be sorted safely on a password protected computer, or paper copies will be locked away securely for 10 years before being destroyed. Your identity will be kept hidden and your responses will be anonymous if the research is published, or the results are shared. Your data will remain

confidential between the research team, the exception to this being if information about poor practice came to light, which has the potential to cause harm. If there were any significant concerns relating to health or social care needs or a risk of danger of harm to yourself or others confidentiality would be broken to get advice from clinical staff.

Data Protection Statement

The data controller for this project will be Staffordshire University. The University will process your personal data for the purpose of the research outlined above. The legal basis for collecting your personal data for research under the data protection law is a 'task in the public interest' You can provide your consent for the use of your personal data in this study by completing the consent form that has been provided to you.

You have the right to access information held about you. Your right of access can be exercised in accordance with the General Data Protection Regulation. You also have other rights including rights of correction, erasure, objection, and data portability.

Questions, comments and requests about your personal data can also be sent to the Staffordshire University Data Protection Officer. If you wish to lodge a complaint with the Information Commissioner's Office, please visit www.ico.org.uk.

What if I change my mind about taking part?

You are free withdraw at any point of the study, without having to give a reason. Withdrawing from the study will not affect you in any way. You are able to withdraw your data from the study up until ***30th December 2023***, after which removal of your data will no longer be possible due to the data having been processed and analysed.
If you choose to remove yourself from the study, we will not retain any information that you have provided us as a part of this study.

What will happen to the results of the study?

The intention is to publish the results relevant journals and present the results at scientific conferences. People that take part will not be provided with an individual summary of their results.

However, if you would like to be informed about the outcome of this research, an opportunity will be presented to you as part of our thank you email at the end of the study.

Who should I contact for further information?

If you have any questions or require more information about this study, please contact me using the following contact details:

Rosie Sibley, Trainee Clinical Psychologist – 0300 790 7000

What if I have further questions, or if something goes wrong?

If this study has harmed you in any way or if you wish to make a complaint about the conduct of the study you can contact the study supervisors for further advice and information:

Dr Helen Scott, Research Director - 01782 294 021

If you have any concerns regarding the ethical conduct of the study, you can contact the Chair of Staffordshire University Ethics Committee for further advice and information:

Nachi Chockalingham, Staffordshire University, Leek Road Campus, Stoke, ST4 2RU.
N.Chockalingam@staffs.ac.uk

Thank you for reading this information sheet and for considering taking part in this research.

RESEARCH PROJECT CONSENT FORM

Title of Project: Does self-compassion, attitudes to ageing, anxiety and depression predict loneliness in older adults who live alone in the UK, and does self-perceived burden mediate the relationship?

Researcher: Rosie Sibley, Trainee Clinical Psychologist

	Initials
I have read and understood the information sheet. I have been given the opportunity to ask questions, and I have had any questions answered satisfactorily.	
I understand that my participation in this study is entirely voluntary and that I can withdraw at any time, the point that the data will be analysed, without having to give an explanation and without this in any way affecting my treatment now or in the future.	
I consent that data collected could be used for publication in scientific journals or could be presented in scientific forums (conferences, seminars, workshops) or can be used for teaching purposes and understand that all data will be presented anonymously.	
I agree that data will be used for this research, although the data may also be audited for quality control purposes for future similar interventions.	
All data will be sorted safely on a password protected computer (electronic data), or locked away securely (hard copies of data) for 10 years before being destroyed.	
I understand that I can withdraw my data from the project up to December 30th 2023 without having to give an explanation.	
I hereby give consent to take part in this study.	

Name Participant (print)	Date	Signature
Name Researcher (print)	Date	Signature

Appendix D- University of California Los Angeles (UCLA) Loneliness Scale, 8 items (ULS-8)

UCLA Loneliness Scale (ULS-8)

INSTRUCTIONS: Please tick how often each of the statements below is descriptive of you.

	Never	Rarely	Sometimes	Often
I lack companionship				
There is no one I can turn to				
I am unhappy being so withdrawn				
I feel left out				
I feel isolated from others				
People are around me but not with me				
I am an outgoing person				
I can find companionship when I want it				

Appendix E- Interpersonal Needs Questionnaire Burdensomeness Scale (INQPBS)

Interpersonal Needs Questionnaire Burdensomeness Scale (INQPBS)

INSTRUCTIONS: The following questions ask you to think about yourself and other people. Please respond to each question by using your own current beliefs and experiences, NOT what you think is true in general, or what might be true for other people. Please base your responses on how you've been feeling recently. Use the rating scale to find the number that best matches how you feel and circle that number. There are no right or wrong answers: we are interested in what you think and feel.

	1 Not at all true	2	3	4 Somewhat true	5	6	7 Very true
The people in my life would be better off if I were gone							
The people in my life would be happier without me							
I think I am a burden on society							
I think my death would be a relief to the people in my life							
I think the people in my life wish they could be rid of me							
I think I make things worse for the people in my life							

Appendix F- The Self-Compassion Scale, Short Form (SCS-SF)

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

Almost never				Almost always
1	2	3	4	5

_____1. When I fail at something important to me I become consumed by feelings of inadequacy.

_____2. I try to be understanding and patient towards those aspects of my personality I don't like.

_____3. When something painful happens I try to take a balanced view of the situation.

_____4. When I'm feeling down, I tend to feel like most other people are probably happier than I am.

_____5. I try to see my failings as part of the human condition.

_____6. When I'm going through a very hard time, I give myself the caring and tenderness I need.

_____7. When something upsets me I try to keep my emotions in balance.

_____8. When I fail at something that's important to me, I tend to feel alone in my failure

_____9. When I'm feeling down I tend to obsess and fixate on everything that's wrong.

_____10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.

_____11. I'm disapproving and judgmental about my own flaws and inadequacies.

_____12. I'm intolerant and impatient towards those aspects of my personality I don't like.

Appendix G- Hospital Anxiety and Depression Scale (HADS)

HOSPITAL ANXIETY & DEPRESSION SCALE (HADS)

Please read each item below and tick the box that comes closest to how you have been feeling this past week. Choose one response from the four given for each interview. Give an immediate response and be dissuaded from thinking too long about the answers.

A	**I feel tense or 'wound up**	Most of the time		3
		A lot of the time		2
		Occasionally		1
		Not at all		0
D	**I still enjoy the things I used to enjoy**	Definitely as much		0
		Not quite so much		1
		Only a little		2
		Hardly at all		3
A	**I get a sort of frightened feeling as if something awful is about to happen**	Very definitely & quite badly		3
		Yes, but not too badly		2
		A little, but it doesn't worry me		1
		Not at all		0
D	**I can laugh and see the funny side of things**	As much as always		0
		Not quite so much now		1
		Definitely not so much now		2
		Not at all		3
A	**Worrying thoughts go through my mind**	A great deal of the time		3
		A lot of the time		2
		Not too often		1
		Very little		0
D	**I feel cheerful**	Never		3
		Not often		2
		Sometimes		1
		Most of the time		0
A	**I can sit at ease and feel relaxed**	Definitely		0
		Usually		1
		Not often		2
		Not at all		3
D	**I feel as if I am slowed down**	Nearly all the time		3
		Very often		2
		Sometimes		1
		Not at all		0

A	**I get a sort of frightened feeling like 'butterflies' in the stomach**	Not at all		0
		Occasionally		1
		Quite often		2
		Very often		3

D	**I have lost interest in my appearance**	Definitely		3
		I don't take as much care as I should		2
		I may not take as much care		1
		I take just as much care as ever		0

A	**I feel restless as if I have to be on the move**	Very much indeed		3
		Quite a lot		2
		Not very much		1
		Not at all		0

D	**I look forward to enjoyment to things**	As much as I ever did		0
		Rather less than I used to		1
		Definitely less than I used to		2
		Hardly at all		3

A	**I get sudden feelings of panic**	Very often indeed		3
		Quite often		2
		Not very often		1
		Not at all		0

D	**I can enjoy a good book or radio or TV programme**	Often		0
		Sometimes		1
		Not often		2
		Very seldom		3

Appendix H- The Attitudes to Ageing Questionnaire, Short Form (AAQ-SF)

ATTITUDES TO AGEING QUESTIONNAIRE SHORT FORM (AAQ-12)

INSTRUCTIONS: This questionnaire asks you how you feel about growing older. Please answer all the questions. If you are unsure about which response to give to a question, please choose the one that appears most appropriate. This can often be your first response.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in **general**. For example, thinking how you feel in general, a question might ask: **I dislike growing older**

1=Not at all true
2=Slightly true
3=Moderately true
4=Very true
5=Extremely true

You should tick the number that best fits how true the statements are for you. So you would tick number 4 if you dislike growing older “Very much”, or tick number 1 if you are “Not at all” concerned about growing older.

Please read each question, assess your feelings, and tick the number on the scale for each question that gives the best answer for you.

	1 Not at all true	2 Slightly true	3 Moderately true	4 Very true	5 Extremely true
It is a privilege to grow old.					
There are many pleasant things about growing older.					
Old age is a depressing time of life.					
I don’t feel old.					

I have more energy now than I expected for my age.					
As I get older, I find it more difficult to make new friends.					
It is very important to pass on the benefits of my experiences to younger people.					
I want to give a good example to younger people.					
I feel excluded from things because of my age.					
My health is better than I expected for my age.					
I keep myself as fit and active as possible by exercising.					
I see old age mainly as a time of loss.					

Appendix I- Demographic Questions

Please tell us a little bit about yourself:

How do you identify your gender?

Male ☐
Female ☐
Other: Please state _____

How old are you? _____

How would you describe your ethnicity? _____

What region of the UK do you live in? _____

Do you own your accommodation outright?

Yes ☐
No ☐

On average, approximately how many hours of in person social contact do you have per week?

Less than 10 ☐
Between 10-20 hours ☐
Between 20-30 hours ☐
Over 30 hours ☐

On average, approximately how many hours of virtual social contact do you have per week (including telephone, facetime or online contact)?

Less than 10 ☐
Between 10-20 hours ☐
Between 20-30 hours ☐
Over 30 hours ☐

If you would like to receive a summary of the study results, please provide a contact email or postal address below. You will not be contacted for any other reason than to provide a summary of the results.

Thank you.

Appendix J- Participant Debrief Sheet

Thank you for taking part in this study.

If you would like to receive a summary of the study results, please provide a contact email or postal address below. You will not be contacted for any other reason than to provide a summary of the results. Once again, thank you for your participation.

If you require support following the completion of this questionnaire, please contact the following organisations:

Campaign to End Loneliness: https://www.campaigntoendloneliness.org/helpful-links/

Or by telephone to AGE UK: 0800 169 6565

If you would like someone to talk to, the Samaritans can be contacted 24 hours a day by phoning 116 123

Appendix K- Normality Checks showing violations to self-perceived burden

Descriptive Statistics

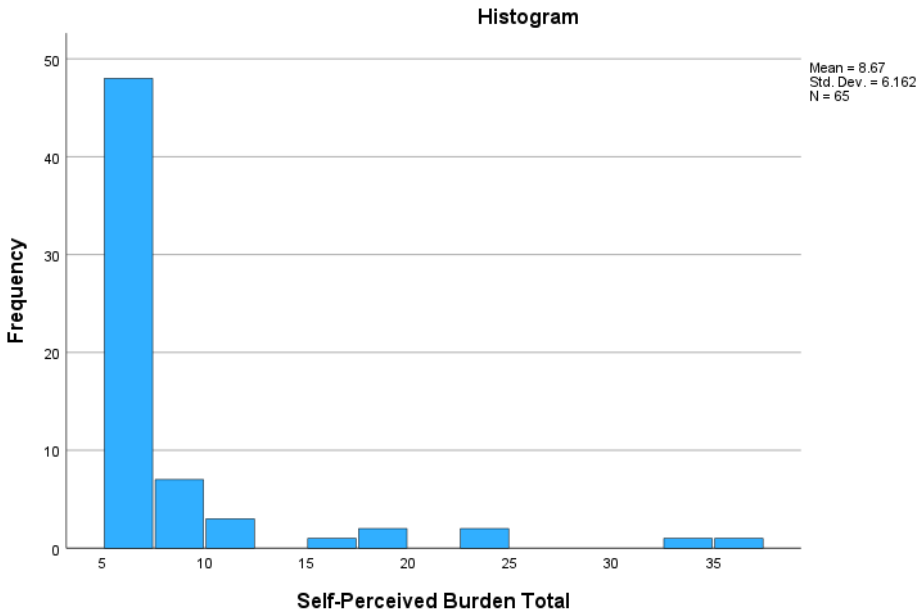
	N		Skewness		Kurtosis	
				Std. Error		Std. Error
Loneliness	65	11.00267	.810	.297	-.158	.586
Anxiety	65	4.405	-.027	.302	-.526	.595
Depression	65	3.851	.046	.302	-.667	.595
Self-Perceived Burden	65	6.182	3.174	.297	10.309	.586
Attitudes to Ageing	65	6.396	.477	.297	2.102	.586
Self-Compassion	65	6.601	-.735	.297	1.401	.586
Valid N (listwise)	65					

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Loneliness	.191	65	<.001	.918	62	<.001
Self-compassion	.081	65	.200*	.982	62	.500
Self-perceived Burden	.370	65	<.001	.474	62	<.001
Attitudes to Ageing	.070	65	.200*	.987	62	.774
Anxiety	.103	65	.098	.973	62	.178
Depression	.077	65	.200*	.975	62	.232

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction


Histogram
Mean = 8.67
Std. Dev. = 6.162
N = 65
Frequency
50
40
30
20
10
0
5
10
15
20
25
30
35
Self-Perceived Burden Total

Appendix L- Missing Data output with MCAR test

Result Variables

	Result Variable	N of Replaced Missing Values	Case Number of Non-Missing Values		N of Valid Cases	Creating Function
			First	Last		
1	AAQ12TOTAL_1	2	1	65	65	SMEAN(AAQ12TOTAL)
2	ULS8TOTAL_1	2	1	65	65	SMEAN(ULS8TOTAL)
3	INQPBSTOTAL_1	2	1	65	65	SMEAN(INQPBSTOTAL)
4	HADSTOTAL_1	3	1	65	65	SMEAN(HADSTOTAL)
5	SCSSFTOTAL_1	3	1	65	65	SMEAN(SCSSFTOTAL)

EM Means[a,b]

AAQ121	AAQ122	AAQ123	AAQ124	AAQ125	AAQ126	AAQ127	AAQ128	AAQ129	AAQ1210	AAQ1211	AAQ1212
2.91	3.23	2.63	2.89	2.80	2.58	3.17	3.46	2.71	2.68	3.12	2.28

a. Little's MCAR test: Chi-Square = 740.171, DF = 710, Sig. = .210

b. The EM algorithm failed to converge in 25 iterations.

ULS81	ULS82	ULS83	ULS84	ULS85	ULS86	ULS87	ULS88
1.78	1.29	1.15	1.24	1.29	1.49	1.78	1.95

HADS1	HADS2	HADS3	HADS4	HADS5	HADS6	HADS7	HADS8	HADS9	HADS10	HADS11	HADS12	HADS13	HADS14
1.18	1.23	1.31	.75	1.22	.78	1.01	1.40	1.17	1.20	1.30	1.02	1.20	.80

SCSSF1	SCSSF2	SCSSF3	SCSSF4	SCSSF5	SCSSF6	SCSSF7	SCSSF8	SCSSF9	SCSSF10	SCSSF11	SCSSF12
2.57	3.12	3.60	2.49	3.23	2.86	3.45	2.80	2.66	2.98	2.97	2.65

Appendix M - SPSS Analysis Output

Multiple regression for five predictors on the imputed dataset including the bootstrapped output (n = 65)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.324[a]	.105	.025	4.782	1.811

a. Predictors: (Constant), SCSSFTOT, INQPBSTOT, AAQ12TOT, ANXTOT, DEPRTOT

b. Dependent Variable: ULS8TOT

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	150.554	5	30.111	1.317	.270[b]
	Residual	1280.414	56	22.865		
	Total	1430.968	61			

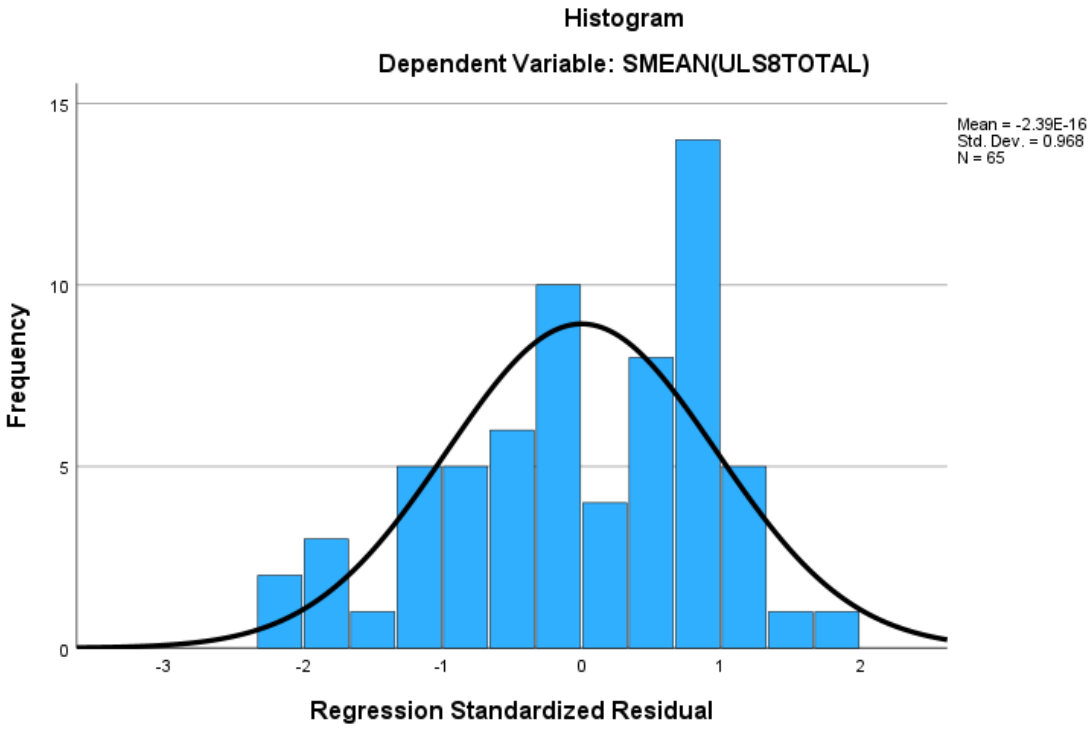
a. Dependent Variable: ULS8TOT

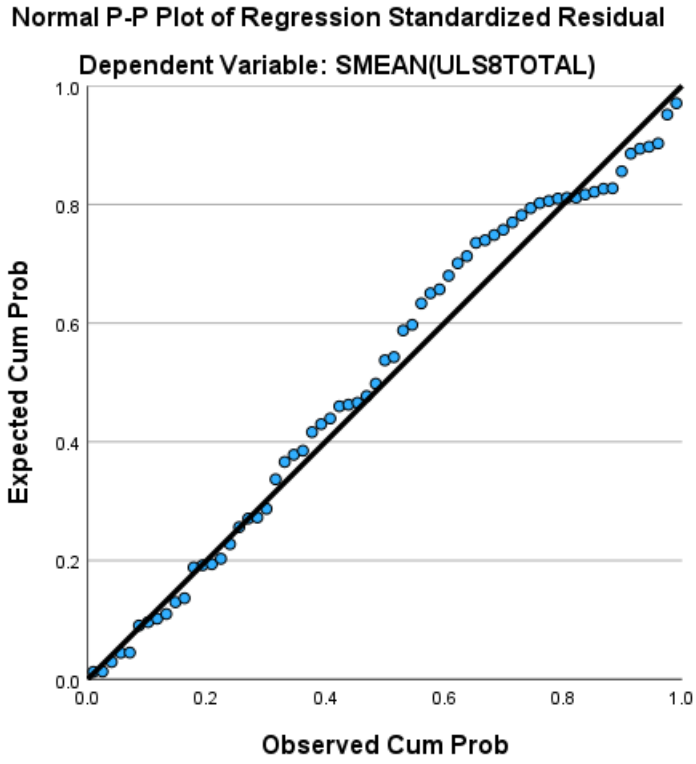
b. Predictors: (Constant), SCSSFTOT, INQPBSTOT, AAQ12TOT, ANXTOT, DEPRTOT

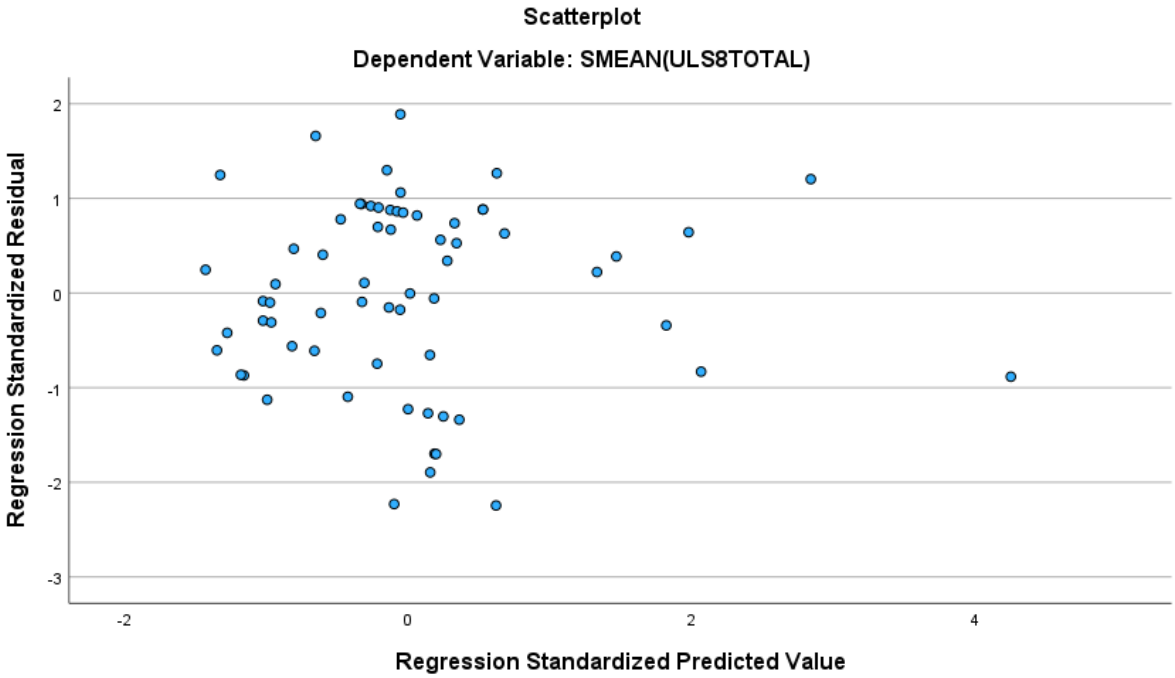
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	8.147	5.211		1.564	.124	-2.291	18.585		
	Attitudes to Ageing	.087	.108	.103	.804	.425	-.130	.303	.979	1.021
	Self-Perceived Burden	.169	.108	.215	1.565	.123	-.047	.385	.844	1.185
	Anxiety	.153	.156	.140	.977	.333	-.160	.465	.781	1.281
	Depression	.101	.197	.077	.513	.610	-.293	.494	.703	1.423
	Self-Compassion	-.075	.112	-.088	-.672	.504	-.300	.149	.923	1.084

a. Dependent Variable: ULS8ORIGTOT


Histogram
Dependent Variable: SMEAN(ULS8TOTAL)
Mean = -2.39E-16
Std. Dev. = 0.968
N = 65
Frequency
15
10
5
0
-3
-2
-1
0
1
2
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: SMEAN(ULS8TOTAL)
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: SMEAN(ULS8TOTAL)
Regression Standardized Residual
Regression Standardized Predicted Value
2
1
0
-1
-2
-3
-2
0
2
4

Bootstrap for Coefficients

Model		B	Bootstrap[a] Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval Lower	Upper
1	(Constant)	8.147	.197	4.578	.079	-.480	17.477
	Attitudes to Ageing	.087	-.015	.093	.341	-.119	.255
	Self-Perceived Burden	.169	-.001	.128	.104	-.072	.417
	Anxiety	.153	.019	.162	.331	-.137	.522
	Depression	.101	-.002	.208	.623	-.296	.494
	Self-Compassion	-.075	.006	.094	.403	-.260	.120

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Bootstrap for Coefficients

Model		B	Bootstrap[a] Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval Lower	Upper
1	(Constant)	8.147	.197	4.578	.079	-.480	17.477
	Attitudes to Ageing	.087	-.015	.093	.341	-.119	.255
	Self-Perceived Burden	.169	-.001	.128	.104	-.072	.417
	Anxiety	.153	.019	.162	.331	-.137	.522
	Depression	.101	-.002	.208	.623	-.296	.494
	Self-Compassion	-.075	.006	.094	.403	-.260	.120

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Paper 3: Executive Summary

Paper Three: Executive Summary

The relationship between self-compassion, attitudes to ageing, anxiety, depression and loneliness in older adults who live alone in the UK.

Word count: 2469 (Excluding title page and references)

Overview

This report is a summary of a research project carried out by Rosie Sibley (Trainee Clinical Psychologist) and Dr Helen Scott (Research Tutor) as partial fulfilment of the requirements of Staffordshire University for the degree of Doctorate in Clinical Psychology. The research investigated whether attitudes to ageing, self-perceived burden, anxiety, depression, and self-compassion predicted loneliness in UK older adults living alone in the community. It is written for participants who took part or anyone with an interest in the topic and wishes to read about the study and its findings.

This summary has been written for older adults; however, it may also be of interest to professionals who work with older adults, families, carers of older adults, or to anyone with an interest in this topic.

When preparing this report, a draft version was read by four individuals from older adult community groups. They kindly reviewed the report and provided recommendations on how to improve this document, to make it as accessible as possible. Changes were made based on these comments.

Background to the Research

Loneliness

It is estimated that approximately 1.4 million older adults in the UK feel lonely often, which has increased since Covid-19 (Age UK, 2018; McClelland, 2023). In the UK, an older adult is defined as someone over the age of 65 (NHS England). Loneliness is a ‘mismatch between the quantity and quality of the social relationships that we have, and those that we want’, leading to increased unhappiness (Taylor, 2019). Perlman and Peplau’s (1981) definition of loneliness, describes a subjectively unpleasant experience, which encompasses emotional loneliness; the absence of wanted companionship, and social loneliness; a small social network, is used in this study.

Loneliness has been found significantly impact physical and mental health, such as:

- Increased risk of depression (Doane & Adam, 2010)
- Poorer life satisfaction, and higher levels of anxiety (Zebhauser et al., 2013)
- Increased health conditions and early death (Holt-Lunstad, 2015; Luchetti et al., 2020)
- Increased risk of cognitive decline, and dementia (Courtin & Knapp, 2015).

Loneliness also contributes to poorer mental health, including poorer life satisfaction, higher levels of anxiety and depression (Zebhauser et al., 2014). Research has explored factors that predict loneliness in older adults, finding that being unmarried, experiencing partner loss, having limited social networks, infrequent social activity, poor self-perceived health, and depressed mood are risk factors (Dahlberg et.al. 2021; Peterson et.al, 2016; Wang et al., 2023). However, there are gaps in knowledge in relation to how individual factors, such as attitudes and characteristics influence loneliness.

Attitudes to Ageing

Personal views of the experience of ageing over the course of life have been found to influence expectations of the ageing process. For example, those that feel lonelier have been found to believe that loneliness is a part of ageing (Pikhartova et al., 2016). This was shown for older adults with beliefs that ageing is dull and lonely, who began to withdraw socially, increasing social disconnection from others. Research focusing on how loneliness exists in relation to other subjective views, such as attitudes to ageing, could address a lack of knowledge about how to understand and explain the causes of loneliness as well as how to tackle it (Fakoya et al., 2020).

Anxiety and depression

Anxiety is defined as feelings of tension or unease resulting from the anticipation of internal or external danger, including where the response may not warrant the reality of the situation (Barlow, 2013). Depression is defined as a persistent feeling of sadness and loss of interest in activities that would usually be enjoyed and may also experience deterioration in sleep, appetite, and feelings of self-worth (Gilbert, 2016). Both anxiety and depression influence mood, which is characterised as the temporary

state of mind that negatively impacts how someone thinks, feels, and behaves (Sekhon & Gupta, 2023). For example, lacking motivation, avoiding social situations, and feeling worried or sad. Therefore, considering anxiety and depression in research about loneliness is valuable and meaningful in the pursuit of preventing and reducing loneliness.

Self-Perceived Burden

Self-perceived burden is defined as the concern generated from the impact on others of one's illness and care needs, which causes guilt, distress, and feeling responsible for this (McPherson et al., 2007). It is described as a dynamic feeling, which can vary over time (Van Orden et al., 2010), and a study looking at older adults found that the desire not to burden others was one crucial element in the decision regarding health treatment (Ashby et al., 2005). Self-perceived burden could be a factor preventing people from asking for help or seeking social connection, which may cause and perpetuate loneliness.

Self-Compassion

Self-compassion is defined as having a 'self-attitude that involves treating oneself with warmth and understanding in difficult times recognising that making mistakes is part of being human' (Neff, 2003). It has been shown to reduce feelings of loneliness (Akin, 2010 & Patapoff et al., 2023), as higher levels of self-compassion are associated with lower reports of loneliness in students, but less is known regarding an older age population.

Why carry out this study?

Public attitudes to ageing are described as complex and nuanced, fearful about the unknown elements of older age, thinking that it inevitably leads to decline and dependency on others or the state (Centre for Ageing Better, 2021).

This research is important for the way in which older adults are supported by health and social care services in the community, with the potential to improve and maintain the overall health and wellbeing of older adults. There is inconsistent and conflicting research to date about the predictors of loneliness (Chawla et al., 2021). Considering the existing literature and gaps that have been identified in the research, this study

could provide useful insight into loneliness and an understanding of some possible ways to mitigate it. This might be through the development of targeted interventions to address loneliness in community living older adults.

Aims of the Study

- To investigate whether loneliness is influenced by levels of self-compassion, self-perceived burden, attitudes to ageing, anxiety and depression.
- To understand to what extent self-perceived burden is worsened by depression, and how much this increases loneliness.

Predicted Outcomes

1) Based on the existing research on loneliness, it was thought that the following would predict higher levels of loneliness:

- Lower levels of self-compassion
- More negative views on ageing
- More symptoms of depression and anxiety
- High self-perceived burden

2) It is also predicted that:

- Depression influences self-perceived burden, which in turn influences loneliness, such that, depression leads to increased self-perceived burden, which in turn leads to increased loneliness.

The Study Design

This study was reviewed and approved by Staffordshire University Ethics Committee.

How were participants recruited?

Participants were recruited between June and December 2023. A research advertisement was posted online through social media. The study was also advertised at face-to-face carers groups run by Age UK in Staffordshire and sent out to other community services, including charities and voluntary groups, across the UK who have older adult members.

Who could take part?

Those who met the following criteria were eligible to take part:

To take part, people must be:	People could not take part if:
• Aged 65 or over • Retired from paid work • Lived alone in the UK	• Unable to understand written English (as there were no resources for translation)

What did taking part involve?

This research used a cross-sectional design, meaning the questionnaire data was collected at one point in time. Participants could complete the study online or they could request a paper participation pack from the researcher.

Participants who clicked link on the online advertisement to access the study were taken to a webpage that gave information about the study to enable them to make an informed decision about taking part. If participants decided to proceed, they were asked to complete a consent form and completed the questionnaires online.

Participants completing the questionnaires by post were sent a pre-paid envelope to return their questionnaires to be secured and were kept anonymous by separating the consent form from the questionnaires. Both online and postal responses were entered in a database prior to analysis.

Participants were asked to complete questions about themselves, which included:

- Age
- Gender
- Ethnicity
- Average number of hours they have in person contact with others in a typical week
- Average number of hours they have in contact by telephone or video calls, with others in a typical week
- What kind of accommodation they lived in

Participants were then asked to complete five questionnaires:

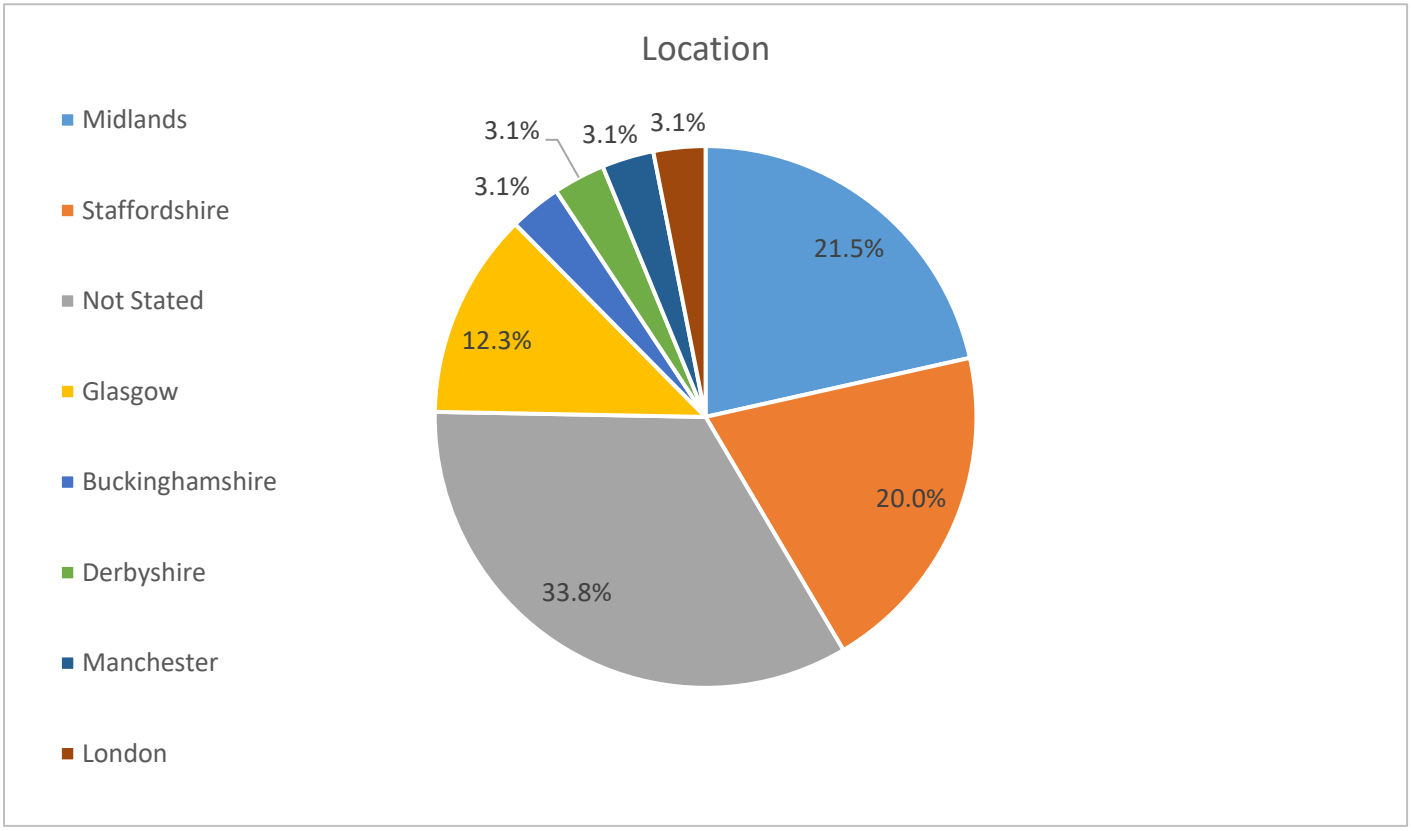
1. **The University of California at Los Angeles (UCLA) Loneliness Scale (ULS-8) (Hays et al., 1987)** is a self-report 8-item scale designed to measure whether people experience feelings of loneliness, and the severity of the feelings. Individual item scores are totalled to provide an overall loneliness score. A higher score suggests more loneliness.
2. **Interpersonal Needs Questionnaire Burdensomeness Scale (INQPBS), (Hill et al., 2015)** is a 6-item scale designed to measure self-perceived burden which is the belief that someone has that others would be better off without them. Higher scores reflect higher levels of Perceived burdensomeness.
3. **The Self-Compassion Scale, Short Form (SCS-SF), (Raes et al., 2011)** is a 12-item scale which asks people to rate statements to record how often they behave kindly and caringly towards themselves in difficult life situations. Higher scores suggest higher levels of self-compassion.
4. **Hospital Anxiety and Depression Scale (HADS), (Snaith & Zigmond, 1986)** is a 14-item scale that assesses symptom severity of anxiety and depression symptoms in the general population. The questionnaire asks people to score statements which represent how they have felt over the last week. Higher scores indicate a higher presence of anxiety and depression symptoms.
5. **The Attitudes to Ageing Questionnaire, Short Form (AAQ-SF), (Laidlaw et al., 2017)** is a 12-item scale that measures attitudes to ageing. Higher scores in indicate positivity towards ageing.

Who took part?

There were 65 participants recruited for this study.

The majority of participants were female (74%). The age of participants ranged from 66 - 93 years old and 66% identified as White British.

Of the 65 participants, there were 44% of people who said their owned their home outright. Findings showed that 67.7% of participants had both in person and virtual contact, compared with 15.3% who reported not having either in a typical week.



How was the data analysed?

Once the data had been collected it was analysed and explored using statistical calculations to identify trends and develop valuable insights. A **multiple regression** statistical analysis was carried out. This analysis shows whether there is a relationship between two or more things, for example if one concept (i.e. attitudes to ageing and self-compassion) can predict another concept (i.e. loneliness). These things are referred to as **variables**. If the regression analysis shows that a variable such as attitudes to ageing has an impact on another variable, such as loneliness, it is described as a **significant predictor** of the other variable.

Key Findings

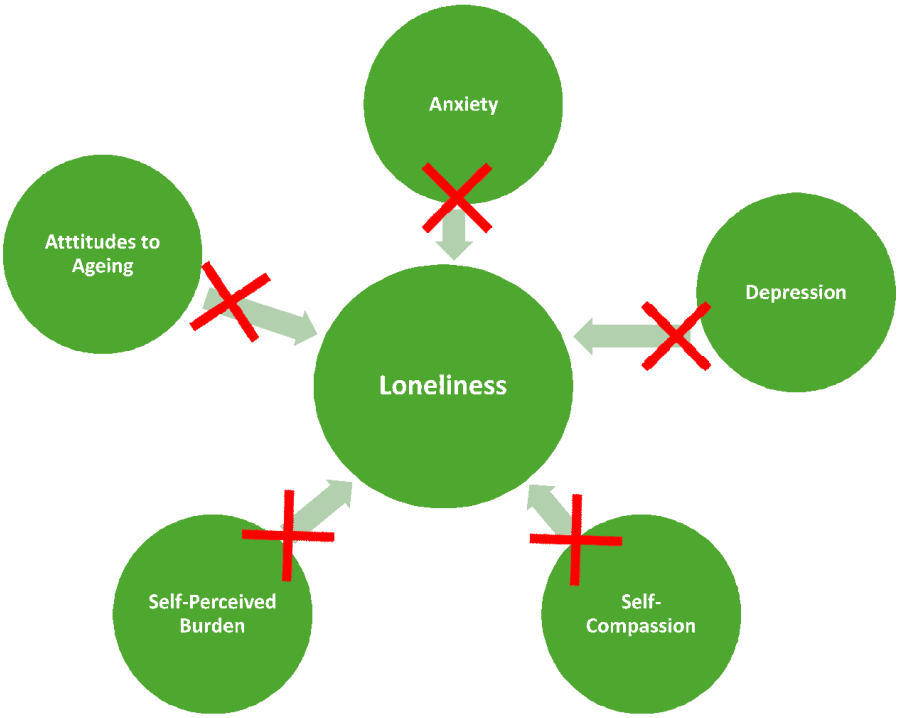
Prevalence

Firstly, the average scores for loneliness, attitudes to ageing, anxiety, depression, self-compassion and self-perceived burden for the sample were calculated and shown to sit in the low, middle or high range. These are shown below:

Variable	Overall scores
Loneliness	Middle
Attitudes to ageing	Middle
Anxiety	Low
Depression	Low
Self-compassion	Middle-High
Self-percevied burden	Low

Prediction One:

Using the multiple regression analysis, attitudes to ageing, self-perceived burden, anxiety, depression and self-compassion were **not found** to be significant predictors of loneliness. The diagram below explains this.



Participants did not report high levels of loneliness or negative attitudes to ageing, and scores showed that self-compassion was around the middle-high range. Low scores were also shown for symptoms of depression and anxiety, self-perceived burden, contributing to the outcome that these factors did not predict loneliness.

Prediction Two:

- Depression influences self-perceived burden, which in turn influences loneliness, such that, depression leads to increased self-perceived burden, which in turn leads to increased loneliness.

The mediation analysis was not carried out due to the outcome of **Prediction One** not being significant.

Conclusions and Recommendations

The findings of this study suggest that there could be other factors that predict loneliness in older adults living alone. The sample of this study was too small to know for sure if the variables predict loneliness and a larger sample may have produced different results.

The findings have some important implications for health and social care professionals working with older adults. These include:

- Older adults' postal responses were higher than online responses in this study indicate that there is a preference for these over online methods of contact, therefore offering a choice is important.
- Not all older adults living alone may experience loneliness, as there may be protective factors against this. Therefore, person centred care and treatment to meet individual needs is important.
- Explore how other characteristics with the older adult population, such as levels of resilience, or the impact of self-managing physical health conditions may influence feeling lonely.
- Consider how much social contact, the quality of social contact, as well as what type of social contact older adults have, including access to the community.

Limitations of this Research

- The findings indicated that not enough people took part to represent older adults in the population.
- Some of the questionnaires may not have accurately measured what was intended, for example, loneliness, self-compassion and depression scores were shown to have less consistency than expected across responses.
- Participants were asked to rate their experiences at one point in time, therefore it is not possible to know if loneliness is present for each person over longer periods of time.
- The influence of the amount and quality of in person and virtual social contact was not explored, which may have affected the results.

Recommendations for Researchers

It is important to remember that this is only one study and cannot represent everyone. Further research should be done to help verify these results. Future research could include:

- Replicating the study with a larger number of participants.
- Investigating experiences of emotional loneliness, where there is a perceived absence of close relationships, and social loneliness, where there is a perceived absence of a social network, could be useful. Looking at whether this changes over time would also be of interest.
- Investigating whether have formal or informal care, including paid carers of support from friends or family influences feelings of loneliness.
- Other research could look at comparing loneliness in separate groups of older adults, for example, those who attend community groups with those who don’t, and those who engage in paid or voluntary employment.

Who will this Research be shared with?

Participants were advised they could contact the researcher to request a copy of this report to be shared with them once the research was complete. This research will also be submitted to a scientific journal for publication to add to the evidence base on predictors of loneliness in older adults.

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