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OLDER WOMEN LIVING ALONE IN THE UNITED
KINGDOM: A MIXED METHODS STUDY
EXPLORING HEALTH AND WELLBEING

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A thesis submitted in partial fulfilment of the
requirements of the University of West London for
the degree of Doctor of Philosophy

April 2021. Revised June 2021.

Declaration

I declare that this thesis has been composed solely by myself and that it has not been submitted, in whole or in part, in any previous academic programme for a degree. I would like to state that except where quoted or otherwise indicated by reference or acknowledgment, the research work presented here is entirely my own. Part of the thesis has already been published in academic journals or presented at seminars and conferences that I declare here.

A list of my dissemination of research activities is provided below:

1. Forward, C., Khan, H. T., & Fox, P. (2020). The health and well-being of older women living alone in the United Kingdom and beyond: a scoping review. *Journal of Women & Aging*, 1-14.
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5. Forward, Cat. Understanding the Health and Wellbeing of Older Women Living Alone in the UK. *Aging and Social Change Conference*, Vienna, September 2019.
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Abstract

This thesis presents the results from a mixed methods study examining the health and wellbeing of older women in the UK. In the context of an ageing population, understanding the determinants and nature of health and wellbeing in later life is important in improving health service provision. Women are more likely to live alone in later life in addition to experiencing different life course trajectories to men. Gender variations in the outcomes and experience of later life are well recognised. Living alone poses particular challenges in later life in terms of social and practical support and the existing evidence does not explore the implications for this for older women in the UK.

The original research carried out for this thesis consists of two main phases in addition to a scoping review of existing literature. Quantitative analysis of data from the Understanding Society dataset was followed by qualitative analysis of transcripts gathered in 1:1 interviews with seven women between the ages of 65 and 80 who live alone in the UK. These interviews were undertaken during the summer of 2020, during the Covid-19 pandemic.

One of the main findings is that women who live alone in the UK are older and in poorer health on average than their co-habiting counterparts. This highlights an important potential vulnerability in this population. Logistic and linear regression analyses indicate that

household composition is not a predictor of poorer health and wellbeing once socioeconomic factors are included in the models.

Another key finding from the regressions is the comparison of determinants of health between those who live alone and those who cohabit. The determinants of health and wellbeing differ between those two groups, suggesting different needs for support. Of particular interest is that although volunteering rates were comparable for the two groups, volunteering was a significant predictor of better health and wellbeing for those who live alone but not for those who live with others. This indicates that social factors influence the health and wellbeing of older women differently depending on their household composition: it also points to the importance of supporting older women who live alone to be able to engage in such civic activities if desired.

The results of the qualitative analysis provide complementarity to the statistical analyses by providing a richer picture of the experience and life course trajectories of older women who live alone in the UK. The examination of the qualitative data was undertaken in two separate analyses. The first analysis used an Interpretative Phenomenological Analysis to examine the lived experience of living alone in later life. This was particularly important given the timing, during the Covid-19 pandemic. Three overarching themes were *Productivity*, *Ownership*,

and *Interconnectedness*. The second round of analysis of the qualitative data used Critical Narrative Analysis. This enabled the use of a life course approach and a critical theoretical lens – in this case, critical feminist gerontology – to examine the data further. The three key themes from this analysis were *Rootedness*, *Busyness* and *New Paths*.

Finally, the findings from each of the analyses were synthesised with the existing empirical and critical literature. This study contributes to the existing knowledge regarding the health and wellbeing of older women living alone in the UK in several ways. Firstly, it confirms that older women who live alone are a more vulnerable group, reporting poorer health and wellbeing overall. However, it also confirmed the importance of socioeconomic factors in mediating the effect of household composition in terms of health and wellbeing outcomes. The role of volunteering as a promoter of health and wellbeing in this population is demonstrated and this is added to by the results of the qualitative analysis which underscored the value of volunteering for older women living alone. Valuable insights are also gained regarding the experience of living alone as an older woman during the Covid-19 pandemic in the UK which posed additional challenges to issues around social connectivity and independence. Indications for future research and implications for policy and practice are given. For example, further research is needed on the effect of volunteering on health and wellbeing in addition to exploring ways in which to maximise

health benefits in older women, especially those who live alone. Policy and public health practice should consider how volunteering and other time-use variables are related to health and wellbeing whilst also being mindful of the effect such a drive might have on those unable to participate.

List of abbreviations

ADLs = Activities of daily living

ANOVA = Analysis of variance

β = Standardised coefficient

BAME = Black, Asian and minority ethnicities

BHPS = British Household Panel Survey

BIS = Business, Skills and Innovation (Department of)

BMA = British Medical Association

CCG = Clinical Commissioning Groups

CI = Confidence interval

CP = Civil partnership

CNA = Critical narrative analysis

DHSC = Department for Health and Social Care

DWP = Department for Work and Pensions

GBP = Pounds Sterling

GCSE = General certificate of secondary education

GDPR = General Data Protection Regulation

GHQ = General Health Questionnaire

GP = General practitioner

IPA = Interpretative phenomenological analysis

M = Mean

MMR = Mixed methods research

NHS = National Health Service

NI = Northern Ireland

NRES = National Research Ethics Service

OECD = Organization for Economic Co-operation and Development

ONS = Office for National Statistics

OR = Odds ratio

PHE = Public Health England

QUAN = Quantitative

QUAL = Qualitative

SD = Standard deviation

SES = Socioeconomic status

SF-12 PCS/MCS = Short Form 12 Physical component score/ Mental component score

UK = United Kingdom

UKHLS = UK Household Longitudinal Survey

WHO = World Health Organisation

χ^2 = chi squared

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Chapter 1

Introduction to the research

This thesis reports on the findings of an investigation into the health and wellbeing of older women living alone in the UK. This chapter introduces the topic by providing a background to the field and summarises the rationale for the present investigation. The research objectives are stated, and the structure of the thesis is outlined towards the end of the chapter.

1.1 Context for the study

The increase of the older population both in numbers and as a proportion of the total population is of interest across academic disciplines and professional practices including public health, medicine, policymakers, and care providers. Changes in global demographics have led to an ageing population which in turn has resulted in an increased interest in the needs of this changing population and a concern as to how these needs will be met (British Medical Association [BMA], 2016; Khan et al., 2018; World Health Organisation [WHO], 2016). Global and local organisations acknowledge the need to adapt to support this shift in demographics as concerns are raised about the potential level of care and medical support that a growing number of older people would require (Khan et al., 2017; Klijs, 2012; WHO, 2016).

In order to be able to support this change to the population, increased understanding is required of the factors which contribute to a healthy older age. By understanding the ways in which health in later life can be improved, organisations such as health bodies or policymakers will be better placed to improve quality of life and reduce the financial costs associated with poor health (BMA, 2016; Tinker, 2002). The social and physical environments which people experience over the life course, are recognised as instrumental in shaping the way in which people experience later life (Barken, 2019; Heap et al., 2017; WHO, 2016;). Those at risk of social isolation and loneliness have been of concern, garnering interest across disciplines for the links between social isolation or loneliness and poor health outcomes (Barnes et al., 2006; Kentish, 2018). More women tend to live alone in later life, often as a result of longer life expectancies meaning they are more likely to experience widowhood (Office for National Statistics [ONS], 2020a). In addition to the prevalence of women living alone, women are also subject to a particular experience of ageing which differs to that of men, consistent with gender variations in life course trajectories (Calasanti, 2010; Twigg, 2004). Research indicates the gendered nature of ageing, and there is a growing body of literature highlighting the importance of examining later life from a gendered perspective (Foster and Walker, 2013; Gaymu et al., 2012).

There is very little literature exploring the health and wellbeing of older women at risk of loneliness or social isolation. This has been identified as an important area of research which requires further investigation (Hafford-Letchfield et al., 2014; Khan et al., 2018). Therefore, women who live alone in later life are a group which requires better understanding.

1.2 Rationale for the study

1.2.1 Demographics of ageing

As life expectancies lengthen and fertility and immigration rates drop, the population of older adults is increasing in both absolute numbers and as a proportion of the total population (Christensen et al., 2009; Higo and Khan, 2015). In the UK in 2019, more than 600,000 people were aged 90 and over and this is expected to continue to rise, although the effects the Covid-19 pandemic have yet to be fully assessed (ONS, 2020b)

One of the fastest growing age groups is the very old, usually identified as 90+ years, and particularly centenarians whose numbers have quadrupled since 1986 (ONS, 2020b). This is expected to present challenges across many areas of modern society including health and social care provision, financial management and public health, in addition to implications on an individual level (WHO, 2016). The shift towards an older population is expected to create issues such as a

proportionately reduced labour force, strains on current pension systems and pressures on family composition (Christensen et al., 2009; Powell and Khan, 2014; Government Office for Science, 2016). Previous medical and social models of health and social care interventions are now unsustainable as they relied heavily on having a larger proportion of the population in work than those in retirement; the taxes of those working providing much of the income necessary to meet pension demand (Government Office of Science, 2016). This presents policymakers, service providers and researchers with the challenge of reconsidering how we support older adults as they age. Services need to be more cost-effective, and support is required to promote a more independent and active later life where possible. The shift away from institutional care to more community-based services is one way in which this reconsideration of policy has manifested, as is the abolition of the default retirement age (Department of Business, Innovation and Skills (BIS), 2010; NHS England, 2014). These both indicate a change in the way later life is viewed and managed, moving towards a vision of later life which can include employment and a reduced dependency on institutionalisation.

One concern is around the expansion of morbidity; that is, the prolongation of life expectancy with the potential of extending periods of disability in later life as increased life expectancies are not matched by an increase in healthy life expectancy (Caley and Sidhu, 2011). Medical developments have contributed to longer life expectancies but

in some cases, this has meant a longer period of disability and dependency in later life requiring treatment, management, and social support. There is now the challenge of improving health and function in later years to improve quality of life in these added years of life expectancy, often referred to as the compression of morbidity (Fries, 2005).

1.2.2 UK Government policy

An ageing population has implications for government policy. Whether it is how public services are planned, the types of housing required or changes to the employment market, the government needs to take an active interest in how policy can shape later life. The concepts of 'Healthy Ageing', (Klijs, 2012; WHO, 2016;) and 'Ageing in Place' (Sixsmith et al., 2014) are two approaches in the literature which demonstrate a shift in how later life is considered. They both demonstrate ways in which the interest in maintaining a healthy, active, and financially manageable later life has manifested, and this is reflected in policy (Government Office for Science, 2016).

The UK care system has been moving away from institutional care towards supporting people to live in the community for many decades (Audit Commission for Local Authorities in England and Wales, 1986). Care in the community is often thought to be financially beneficial to the state and preferable to the individual although the evidence

remains unclear (Sixsmith and Sixsmith, 2008). In order to support people in the community, the factors which contribute to a healthier and more independent later life such as socioeconomic status, education or social support are therefore gaining interest. Recent government publications have continued to reinforce this agenda, whether promoting independence in later life or highlighting factors which contribute to a healthy (and consequentially independent) later life (Department of Health, 2014; Hancock, 2018; Marmot et al., 2010).

1.2.3 Why study those living alone?

Social support has been identified as an important factor in determining health outcomes in later life (Victor, 2005; Khan, 2014; Teguo et al., 2016). Household composition is a simple way of identifying the level of social support in immediate proximity and living alone has long been viewed as a risk for social isolation especially for older adults (Smith and Victor, 2018). However, the language around the issue is complex and inconsistent at times, with terms such as social support, social networks, social capital, loneliness, social isolation, social connectedness all being used (Andersson, 1998; Victor et al., 2006; Dykstra, 2009; Forsman et al., 2013).

Loneliness has attracted a lot of attention in the UK in recent years, with the formation of the Jo Cox Foundation, the Campaign to “End Loneliness” and the appointment of a ‘Loneliness Minister’ (Prime

Minister's Office, 2018). Because of this it is important to acknowledge the differences between loneliness, social isolation and living alone which are often used interchangeably in literature. While these three may overlap, conceptually they differ greatly. There are no universal definitions, but the following seem to be generally acknowledged in the literature. Living alone is a description of household composition, while loneliness is recognised as the discrepancy between desired and actual social contact in either quality or quantity (Yeh and Lo, 2004; Smith and Victor, 2018). Social isolation tends to refer to an objective measure of social contact e.g., number of contacts per week, although what number is considered to be an acceptable level of social contact is variable and subjective (Smith and Victor, 2018).

1.2.4 Loneliness

The oft-quoted research by Holt-Lundstat et al., (2015) showing loneliness to be as bad for your health as 15 cigarettes a day, received press attention presenting loneliness as a dangerous epidemic or time bomb (O'Grady, 2017; Snell, 2017). What is less clear from this study is the causality; as a meta-analysis, its quality is limited by the studies included and many studies included were unable to account for confounding variables such as health behaviours and lifestyle (including smoking). While helpful in increasing public and political support for reducing loneliness, the study may also be contributing to

the stigma of loneliness in later life as the media present imagery of lonely older people accompanied by bleak statistics (Bingham, 2014).

Loneliness has been posited as an evolutionary survival mechanism (Cacioppo et al., 2014); in the same way hunger drives people to seek food, loneliness is thought to encourage a change of behaviour to seek company. While this is plausible, it does not account for the tendency for people who are lonely to experience low mood which in turn often leads to them withdrawing further from society. This also places the responsibility of resolving the issue with the person experiencing loneliness, rather than acknowledging the functional or socioeconomical factors which may limit social connectedness.

Research into loneliness continues to demonstrate its complexity and heterogeneity as a phenomenon but this only serves to further underline the importance of distinguishing it from similar concepts (Lou and Ng, 2012; Beller and Wagner, 2018).

1.2.5 Social isolation

Often presented as the objective measure of loneliness, social isolation usually refers to an attempt to quantitatively measure the number of contacts a person may have per week or month (Smith and Victor, 2018). While helpful in identifying extreme isolation, it is difficult

to capture the quality or value of interaction, or the level of choice involved and therefore the resulting implications for health and wellbeing. It is also culturally embedded in the choice of frequencies (e.g., number of contacts a month considered 'not isolated'), which contacts to include (e.g., telephone, face-to-face) and the value placed on these.

Many studies have explored the social networks of older adults and attempted to identify factors which contribute to social isolation and to explore the relationship between this, loneliness, and other wellbeing outcomes (De Jong Gierveld, 2003; Schnittger et al., 2012; Teguo et al., 2016; Park et al., 2017). Living alone, as an objective measure, is an easily identifiable risk for social isolation but both qualitative and quantitative work have shown the problems inherent in assuming that an older person living alone is isolated (Cheng, 2006; Dahlberg et al., 2021; Eshbaugh, 2008; Koivunen et al., 2020; Kung, 2020). Banks et al. (2009) looked at the risk of social isolation for those living alone and showed that other factors have a role to play. This study compares data across countries which are members of the Organisation for Economic Cooperation and Development, and has a large sample size across cultures, however, it is likely that it loses some of the nuances relating to perhaps gender or financial factors as it attempts to compare inconsistent data from multinational sources.

While social isolation can be a risk factor for poorer health outcomes and living alone can be one aspect of isolation, the lived experience is much less straightforward (Frazer et al., 2012; Gaymu et al., 2012; Hajek and Konig, 2017). The research reported in this thesis will increase understanding of how living alone relates to health and wellbeing outcomes rather than attempting to enumerate social isolation in terms of frequency of contacts.

1.2.6 Dynamics of living alone

Single-person households are increasingly prevalent in the UK, reflecting global trends. This is the case across the lifespan, but it is notable that 38% of 75 to 84-year-olds and 59% of over-85s live alone (ONS, 2020a). This reflects a combination of factors such as longer life expectancies, changes to social norms, increasing divorce rates and people receiving care at home rather than in care institutions (Chandler et al., 2003; Snell, 2017; Lambert et al., 2018).

Living alone is important as it affects the level of practical and psychosocial support immediately available to a person in later life. This is of interest given the changes to service provision from the UK government which promotes people remaining at home and often assumes a level of support from kin (Department of Health, 2014).

Studies have shown links between living alone and poorer health outcomes but are inconclusive (Dunatchik et al., 2019; Kharicha et al., 2007; Holt-Lundstat et al., 2015; Khan et al., 2018). Most studies tend to show a nuanced picture of living alone which includes satisfaction with neighbourhood and housing as contributing to outcomes, in addition to quality of social networks and life course narratives (Davis et al., 1997; Walker and Hiller, 2007; Eshbaugh, 2008; Sereny, 2011; Zaninotto et al., 2013). Few have been conducted in the UK leaving a gap in the literature (Cheng, 2006; De Jong Gierveld, 2003; Eshbaugh, 2008; Machón et al., 2016; Michael et al., 2001; Weissman and Russell, 2018).

Within the UK there are no studies which give a clear understanding of the health and wellbeing of those living alone in later life. Studies that exist examined data from 1983-97 (Morrissey, 1998), focus on disease specific issues (Frazer et al., 2012), or provide no comparison with different household types and neglect a consideration of a life course perspective (Khan et al., 2018).

If policy makers and health and social care providers are expected to support older people in later life, they need to understand the ways in which health and wellbeing are shaped. Changes to demographics and to living arrangements over the preceding decades mean that the evidence needs expanding and updating to support future services.

1.2.7 Ageing and gender: why study older women?

Ageing is an embodied and socially embedded process and as such is a gendered experience (Arber et al., 2003; Hank and Wagner, 2013; Twigg, 2004). Financial imbalances, societal attitudes, gender roles and indirect discrimination all affect the health and wellbeing of older women. These are imposed via policy, practice and popular culture rooted in male-dominated textual discourse and cumulate over the life course, leading to disadvantages in later life (Luken and Vaughan, 2003; Estes, 2004; Barnes et al., 2006; Government Office for Science, 2016).

Women's longer life expectancy means that 70% of those aged over 90 years are female in the UK and female centenarians outnumber males 5:1 (ONS, 2020b). The likelihood of their longer life expectancy means that women can be dependent on state support for longer in later life and are more likely to live alone. Cohort effects are issues which affect a specific cohort or generation. The women currently of retirement age in the UK have seen a change in women's role in the labour market, legalisation of abortion and increase in contraception availability during their lifetime. They also vary in age between early/mid-sixties and centenarians; a range which suggests a heterogeneity not before seen when considering later life. The environment in which women age today is significantly different to that

of previous generations meriting further research into the nature and quality of this specific experience (Hafford-Letchfield et al., 2014).

Existing qualitative studies examining the experience of living alone for older women focus mainly on US populations (Letvak, 1997; Roberts and Cleveland, 2001; Walker and Hiller, 2007) or on the phenomenon of living alone in relation to a specific health concern (Robinson, 2002; Frazer et al., 2012). Therefore, there is a gap in the literature examining how older women experience living alone in the UK and how this relates to their overall health and wellbeing. There are also no studies which have been identified which considered qualitative data in addition to an analysis of a large dataset as in the research reported in this thesis.

One study which examines the health and wellbeing of older women living alone is that by Sawari et al. (1998) and shows that, unless particularly impaired at baseline, women living alone often fare better than co-habiting counterparts. This is useful in that it compares women who live alone with those who live with partners and those who live with non-partners (for example, adult children). The study also compares outcomes over time rather than cross-sectionally like many similar studies. However, this study is based in the USA, the sample is exclusively White women and, is based on data collected between 1984-86, therefore exploring a different cohort of older adults. It may

also indicate an element of reverse causality; that is, the women who live alone and do well do so precisely because they had a better level of function at baseline.

One of the most relevant studies in this field to date is Khan et al. (2018) which uses data from the UK Household Longitudinal Study (University of Essex, Institute for Social and Economic Research, NatCen Social Research, 2018). Both health and wellbeing outcomes in this study are self-reported whereas it would be useful to make use of more objective data collected in the study to indicate health. In addition, this study does not compare the data of women living alone to that of women cohabiting either with partners or others. This would be useful to assess for differences between the sub-samples as previous research indicates important differences between those cohabiting with spouses or children (Hughes and Waite, 2002). This indicates that further examination of these data would be of benefit in developing understanding of this population.

Critical feminist gerontology is an area of critical theory which considers ageing and gender within broader cultural, political, and social contexts (Calasanti, 2010; Hosseinpoor et al., 2012). This theoretical literature is underpinned by empirical research and highlights the inequalities in later life experienced by women through life course trajectories, financial insecurity, unpaid care work and

cultural norms (Krekula, 2007; Ray, 1996). This results in different health needs and outcomes in later life which remain underexplored (Foster and Walker, 2013; Liu et al., 2019).

In conclusion, there is little evidence which specifically examines the health and wellbeing of older women who live alone in the UK. Evidence indicates that there is an increasing number of women living alone in later life and that living alone may interact with other determinants of health and wellbeing. What is not clear is the differences in health and wellbeing between women who live alone and their co-habiting counterparts, or the nature of the relationship between other potential determinants of health and living alone across the life course.

1.3 Research objectives and questions.

Based on the gaps identified in the current literature, the overall aim of this study is to increase understanding of the health and wellbeing of older women living alone in the UK. The objectives of the study are as follows:

1. To increase understanding of the role of household composition in determining health and wellbeing outcomes for older women in the UK.

2. To understand differences between the health and wellbeing of older women who live alone and those who live in other household types.
3. To gain an insight into the experience of living alone as an older woman in the UK today and how this affects health and wellbeing.
4. To increase understanding of the role of life course trajectories in shaping the ways in which older women experience living alone in later life in the UK today.

These objectives are met by answering the following research questions:

1. Is household composition a predictor of health and wellbeing outcomes in older women in the UK?
2. Do predictors of health and wellbeing in older women who live alone in the UK differ from those who cohabit?
3. What are the experiences of older women living alone in the context of health and wellbeing in the UK?
4. How do life course trajectories affect women who come to experience living alone in later life?

1.4 Structure of the thesis

The thesis is organised into eight chapters. Chapter one has given an introduction of the study followed by rationale, aim and specific objectives of the study. In order to identify and meet the research objectives it was necessary to carry out a review of the existing evidence to fully assess the state of current literature and empirical evidence. In chapter two the process and results of this scoping review are presented. Following identification of the research questions (detailed in section 1.3), a research design and methodology were decided upon. A mixed methods approach was chosen in order to best meet the objectives of the study and provide a rounded picture of the chosen phenomenon. The rationale for the choice of methods and a description of how this was operationalised is in chapter three in addition to an explanation of theoretical approaches which underpin the study. The first phase of the research was quantitative in nature; chapters four and five set out the results of a statistical analysis of The UK Household Panel Survey in answer to research questions one and two respectively. The second phase of the research was analysis of data gathered from in-depth interviews with older women who live alone. These were analysed using two stages of phenomenological informed analysis. The first stage used an interpretative phenomenological analysis (IPA) while the second employed critical narrative analysis (CNA). The results of the qualitative analysis are set out in chapters six and seven, answering research questions three and four respectively. Finally, the results of both sets of analysis are drawn

together in chapter eight, which discusses the outcomes within the context of existing evidence and critical feminist gerontological theory and puts forth suggestions for implications for future research, policy and practice.

1.5 Summary of the chapter

This introductory chapter has set out the context for the thesis. The rationale for the study has been described, highlighting why this research is needed and what it will add to the body of knowledge in this field. The aims and objectives of the research have been detailed and the structure of the remaining chapters outlined.

Chapter 2

The health and wellbeing of older women living alone in the UK: A scoping review

In order to establish specific research questions and research objectives, a review of the existing literature in the field was required. This chapter sets out the process and results of this review. Included are definitions of some key terms, the theoretical context, search terms and the results of the scoping review. The four research questions (see section 1.3) answered in this thesis are identified as a result of the review as is the theoretical approach which guides this research project.

The topic of the health and wellbeing of older women who live alone is touched upon in a broad and diverse range of sources, however, it is not often addressed in depth. The literature is multi-disciplinary and incorporates gerontology, geriatric medicine, social policy, social theory, critical gerontology, critical feminist gerontology, demography, and public health. To gain an understanding of the history and the current situation of the domain it was felt to be most appropriate to carry out a scoping review rather than a systematic review due to the broad nature of the area under inquiry (Grant and Booth, 2009, Tricco et al., 2018). In order to contextualise the data from the scoping review,

this chapter outlines (section 2.2) key theoretical perspectives which underpin the literature and the rationale for the choice of critical feminist gerontology as the approach with which to guide the study. Section 2.3 details the methods used to complete the scoping review including rationale for a scoping review, databases used, search terms and inclusion and exclusion criteria. The chapter then proceeds to present the results of the scoping review, structured into key determinants of health as indicated by the literature. Gaps in the literature are discussed and the research questions for this thesis presented as a result.

2.1 Definitions

For transparency and consistency some definitions are indicated. Living alone was defined as a single person household. The literature indicated some overlap in the use of the terms 'living alone' and 'social isolation' but it is not helpful to equate the two concepts as discussed in chapter one. Health and wellbeing are both acknowledged to be nebulous terms. For the purpose of this review, health was considered in terms of any commonly used health outcome, mortality, service use or standardized outcome measures (Karicha et al., 2007; Lee and Son Hong, 2016). Wellbeing can be measured objectively such as with measures of socio-economic security or subjectively with eudemonic or hedonic aspects considered. This review included studies which referred to wellbeing explicitly or which used measures of related

concepts such as life satisfaction (Gaymu et al., 2012; Khan et al., 2018).

2.2 Context and theoretical underpinnings

2.2.1 Demographics of ageing

The changes to the size and nature of the global population are now well-recognised and documented. These changes have significant implications for how we think about managing the requirements of those in later life (Klijs 2012; WHO, 2016). Over the last century medical advancements have meant that in developed countries the human cost of infectious disease has been greatly reduced. This in turn has contributed to an increase in average life expectancy and a larger population. A reduction in fertility rates has meant that birth rates are falling while more people are living longer (Christensen et al., 2009). This results in a change in the make-up of a population; where previously the majority of the population were younger and of working age, there is now a shift towards an older population. Unprecedented in human history, it is expected that for the first time, the number of older adults (that is, over 65) will outnumber the working age population (Khan, 2014).

The impact and extent of this change will vary globally (Powell and Khan, 2014). The shift towards a global economy which sees production industries based largely in the Third World and emigration

of skilled professionals to post-industrial nations, has consequences for the variation between developing and developed countries. This means that developing countries are more likely to experience difficulties in managing an older population as they are more vulnerable to issues such as the burden of disease and financial insecurity in later life (Bongaart and Zimmer, 2002; Higo and Khan, 2015).

While medical advancements have contributed to an increase in life expectancy, the challenge for medicine now is the management of the chronic diseases often associated with later life. Prevalence of non-communicable disease such as diabetes, dementia and cardiovascular disease have all increased in line with increased life expectancies (BMA, 2016; Oxford Institute of Population Ageing, 2018). These diseases are all linked with increased disability and in turn, increased dependency on care services and social support. There is a well-recognised need to improve policy and service provision in order to better manage the increasing requirements of an ageing population, both globally and on a more local scale (Department for Health and Social Care, 2018; Raeside and Khan, 2008; WHO, 2016). Within the UK there have been several policy reforms aimed at managing issues associated with an ageing population. The Pensions Act (Department for Work and Pensions, 2014) changed pension entitlement based on lifetime National Insurance contributions. This indirectly discriminates against women

who often have reduced earnings across the life course as a consequence of child rearing, unpaid care work and lower salaries (Calasanti, 2010). UK policy has adopted a preventative, healthy ageing approach as a way of improving health and independence in later life (Department for Health and Social Care, 2018; Public Health England, 2020). It has been suggested that the effects of this type of policy differ by gender and require further development (Foster and Walker, 2013).

In order to develop more effective policy and intervention it is essential that the needs and experiences of the older population are fully understood. There has been a rise in research examining the determinants of health and wellbeing in later life in addition to assessing the efficacy of interventions aimed at increasing health and wellbeing (BMA, 2016; Cattan et al., 2005; Seah et al., 2018). Within this field it is becoming more widely acknowledged that the determinants of health and wellbeing in later life are beyond those previously recognised by bio-determinist theories which tended to dominate earlier gerontological work. Wider determinants of health have been shown to include education, socio-economic status, life-style choices, health behaviours and political-economic factors (Marmot, 2020; Victor, 2005).

Since the early part of this century, interest has risen around the contribution of social resources on health outcomes in later life. For example, in the UK, a third of those aged 80+ years reported they feel lonely on a daily basis, (Thomas, 2015) and research has made headlines dubbing Britain the loneliest country in Europe raising concerns regarding the impact this has on individuals' health (Orr, 2014; Holt-Lunstadt et al., 2015; Smith and Victor, 2018). The examination of the way in which objective measures, perceived support and satisfaction with relationships interact has been an important development in understanding some of the subtleties related to social resources in later life (Cattan et al., 2005; Noguchi et al., 2019; Victor and Scharf 2005). One aspect of social support is household status or living arrangements; living alone is an increasing phenomenon globally across the life course and appears to be more common for women than men in later life (Chandler et al., 2003; ONS, 2020a; Snell, 2017). Living alone cannot be said to lead inevitably to poorer social support or feelings of wellbeing but it has implications for the level of social and practical support immediately on hand which may become more of an issue in later life (Mah et al., 2021; Tamminen et al., 2019).

The effect of household composition on health outcomes is not yet fully understood despite some work starting to examine the phenomenon (Khan et al., 2018). Women are more likely to live alone in later life and throughout life they are subject to inequalities across life spheres

which can cumulate in later life, affecting both their living arrangements and their health (Khan et al., 2018; Weissman and Russell, 2018; Huffman and Ramos, 2019). Further research is required to fully explore the contribution of living alone to health and wellbeing in older women.

2.2.2 History of gerontology; a biomedical perspective

Much of the literature which examines the health and wellbeing of older women living alone falls, broadly speaking, into the field of gerontology. This is a relatively new area of investigation which can be defined as the area of study concerned with ageing and later life. This has become a wide area of investigation including, but not limited to, the experience of later life; evaluating interventions to delay or manage symptoms and conditions associated with later life and reviewing social and economic policy which affects the older population. In its origins, gerontology pre-dates its medical equivalent geriatrics, but tended towards the same biomedical approach in considering later life in terms of symptoms which may or may not be manageable and are a natural part of ageing (Sasser and Moody, 2018). In terms of theoretical contributions, gerontology has tended to borrow from and overlap with other disciplines, drawing on theories of human development and sociological theories and much of the literature appears to be descriptive or evaluative in nature rather than theoretical or critical (Victor, 2005). Early theoretical gerontological work framed

later life within a functionalist tradition, considering later life as a time of reduced function and reduced productivity as seen in disengagement theory (Sasser and Moody, 2018). While disengagement theory fell out of favour, replaced, and developed by activity and then continuity theories, these all neglect to consider a wider perspective on ageing which could be achieved by taking into account broader determinants of health in later life. They also discount a constructionist perspective which engages with the embodied experience of ageing; something of particular relevance when considering the experiences of women in later life. Finally, functionalist traditions neglect to engage in a critique of the structures and systems which create inequalities throughout the life course which has led to the development of more critical aspects of gerontology.

The disparities in the way in which people age, coupled with an ageing population, have meant that interest in the field has grown in the last few decades and the theory expanded as a result. As a biomedical approach is not sufficient to explain or predict health related outcomes in later life, theoretical approaches have developed to encompass wider determinants of health.

2.2.3 A biopsychosocial perspective

Engel's (1977) biopsychosocial model was developed in response to the biomedical approach and was proposed initially within a psychiatric

context but found favour across disciplines for its acknowledgement of the wider factors which contribute to health than the biomedical approach (Engel, 1977; Adler, 2009). The model encouraged clinicians to consider the broader context within which medical diagnoses are given and treated. Critiques of the model include challenging the notion that it is, indeed, a model or that it does not acknowledge the influence of subjective experience (Benning, 2015). Regardless of the criticisms, the approach has been widely used and expanded upon and within the context of gerontology has been useful in encouraging a wider consideration of the influence of social and psychological factors when investigating later life (Sulmasy, 2002; Victor, 2005; Friedman and Ryff, 2012). While not a gerontological theory or model, research into health and wellbeing in later life appears to support a biopsychosocial approach in that wider determinants of health are consistently shown to influence health outcomes (Dwyer et al., 2000; Marmot, 2020; Middleton et al., 2007).

2.2.4 A political economy of ageing

Gerontology is often shown to be divided between two main paths of theory or investigation. The first, a humanistic, individual level of enquiry and the second a broader political-economic perspective (Minkler, 1996). This second approach drives much of the research concerned with demographics and epidemiology and can be useful in assessing the ways in which larger scale factors can contribute to

health and wellbeing in later life. It also can be useful as a starting point to consider a more action-orientated research base and a more critically engaged and culturally relevant theoretical body of literature as a bio-determinist approach to ageing is countered with an acknowledgement of the role which social, economic, and political forces play in shaping the health and wellbeing of those in later life (Arber et al., 2003; Luken and Vaughan, 2003; Victor, 2005).

Considering the experience and quality of later life in the context of a political economy enables an appreciation of the complexity of the factors involved in shaping health and wellbeing as we age. Policies are not made in a value-neutral vacuum; they reflect social assumptions, political priorities and suppressions or promotions of interest. Policy then continues to reinforce and even formalise unacknowledged values and attitudes which can contribute to inequalities across society throughout the life course (Barken, 2019; Estes et al., 2003; Victor, 2005).

For example, the Care Act (Department of Health, 2014) favours independence which is often considered a Western concept and reinforces individualism as a social norm (Chandler et al., 2003). The person-centred approach to care espoused is well-sounding but has finite variations shaped by institutional limitations. Recent public health publications have promoted this concept of an independent and

healthy later life; while this can encourage positive health behaviours and potentially reduce dependence in later life, it could be criticised as shifting the blame for poor health in later life from institutional or social causes to the individual thereby associating poor health with a moral failing (Bulow and Soderqvist, 2014; Department for Health and Social Care, 2018; Hancock, 2018). By prizing independence and productivity, policies which encourage employment beyond the previous retirement age could be viewed as promoting a capitalist vision of later life whereby a person's value is in their utility (Estes et al., 2003).

Policy and the economy often shape later life, either directly, by legislation around retirement age (Department of Business, Innovation and Skills, 2010) or by indirectly limiting the financial resources of retirement. While the retirement age is no longer mandatory, policy continues to shape expectations of behaviours at certain ages and can reinforce socially constructed roles. Health and finance, discussed in more detail in Section 2.4.2, are also linked. While lower financial resources throughout life can lead to poorer health outcomes, poorer health is also related to increased costs such as transport, medication, or support with Activities of Daily Living (ADLs) (Heap et al., 2017; Sacker et al., 2017). This can create an accumulation of financial and health disadvantages leading in turn to poorer wellbeing for the individual and increased reliance on informal support, creating carer strain for family members (Estes et al., 2003; Ryser and Halseth,

2011). Women are at particular risk of financial insecurity in later life; lower wages on average and interrupted employment as a result of child-rearing, lead to lower pension contributions (Farrer et al., 2019; Office of the Deputy Prime Minister, 2006). These economically and politically imposed limitations shape later life and can lead to what has been termed Structured Dependency in later life (Victor, 2005). As the government moves towards a promotion of employment in later life there may well be changes in the financial wellbeing of older adults, but this requires balancing with accommodation for those who can no longer work (Department for Work and Pensions, 2017).

2.2.5 Critical feminist gerontological perspectives

As the critical gerontology literature has developed there has been a gradual increase in attention paid to the particular nature of ageing for women (Calasanti, 2010). As evidenced in the literature discussed in Section 2.4.6, there are gender differences in the ways in which men and women experience ageing (Dwyer et al., 2000; Gaymu et al., 2012). While historically, feminist and gerontological literature had not overlapped, recent years have seen a significant rise in the acknowledgement of the double inequalities faced by older women (Arber et al., 2003). Theory and research developed within an uncritical context perpetuates attitudes and prejudices which posit women and older adults as 'other', reinforcing a younger, masculine norm (de Beauvoir 1953; Luken and Vaughan, 2003).

Women are also more vulnerable to the particularly Western, post-industrial, attitudes to ageing which, prizing youth, devalue the place of older people (Minkler, 1996). This is reflected in media presentation of older women, the prevalence of anti-ageing products and the gender-blindness of policy (Luken and Vaughan, 2003; Freixas et al., 2012; Foster and Walker, 2013). Research investigating the health and wellbeing of older women in later life should endeavour to engage with this discourse if it wishes to foster relevant change in the field.

Evidence points to myriad ways in which ageing differs for women. Women tend to live longer on average, to earn less when employed and to experience interrupted employment for child-rearing all of which cumulate in a smaller pension which needs to last for longer (Crespi et al., 2015; Estes, 2004). More often women carry out care work, either for children, grandchildren or parents, and the low value placed on this is reflected in the relative lack of financial remuneration. Women have experienced significant changes in the last century in terms of their role in society, particularly within the UK. Their place in the labour market, access to contraception and abortion, the increasing prevalence and acceptability of divorce and changing attitudes to non-heteronormative households all mean that women currently in retirement age are living very different lives to that of their grandmothers. These changes have meant that the experience of

ageing for this population and the ways in which these factors affect health and wellbeing in later life are all relatively unknown and merit further enquiry. A critical feminist gerontological approach will be used in order to underpin the thinking in this study. The use of a theoretical framework is advocated in order to critically appraise findings and to situate results within a theoretical and critical context (Evans et al., 2011). Within a mixed methods study such as this, it is particularly useful when synthesising findings as a connecting point from the different sections of the study (Ivankova et al., 2006).

2.2.6 Successful ageing: background and critiques

As the awareness of the ageing population has become more widespread, interest has manifested in the potential impact of this change to the population but also to potential solutions or ways in which to manage the forecasted issues. In what could be seen as a development of earlier functionalist approaches to ageing, successful ageing is a concept which promotes an active later life, challenging previous stereotypes of later life as a time of reduced engagement in social or productive activities (Rowe and Kahn, 1987). The approach builds on evidence which shows the health benefits of maintaining active engagement in activities in later life and has been widely taken-up by policy makers and health organisations (Department for Health and Social Care, 2018; Oxford Institute of Population Ageing, 2018; WHO, 2016). In examining the literature concerning the health and

wellbeing of older people in the UK, it is important to acknowledge this concept as it has influenced much research and policy over the last couple of decades.

Also termed by some as active or positive ageing, the approach encourages people to maintain good physical activity levels, social contact, and cognitive engagement into later life in order to support independence. The individual consequences of this are to enjoy a better quality of life with reduced risk of disease and disability. On a wider scale this benefits society in terms of a reduced burden of disease and disability which would otherwise need supporting by health and social care services. The assimilation of the approach across a range of health organisations has been shown in its continued presence in literature, research, and policy; the European Union made 2012 the year of Active Ageing and the approach has been incorporated into the UK public health agenda (Council of the European Union, 2012; Public Health England, 2020; Wahl et al., 2016).

This emphasis on promoting health throughout the life course and encouraging healthy behaviours is naturally attractive if a reduction in later life morbidity is to be achieved, however the approach has come under criticism (Bulow and Soderqvist, 2014). One main criticism is that the approach under-acknowledges the influence of wider

economic and political influences on health outcomes in later life (Wahl et al., 2016). There has also been the suggestion that it positions older adults as 'other' in society and assumes a homogeneity to this group which is both false and unhelpful (Foster and Walker, 2013; Van Dyk, 2014). There is also the problem with the term 'successful' ageing conceived as an active, productive, and socially valued older person; the implication being that someone who has developed disease and disability in later life is no longer 'successful' and has 'failed' (Katz, 2000). The value judgement made by positing success in later life this way is particularly Western in nature, valuing independence, and also then attaches a level of blame or stigma to those who have not aged in a particular way (Rowe and Kahn, 2015). Finally, there is a view that positive, active, or successful ageing is actually a denial or delay of ageing; that 'good' ageing is in fact delaying usual signs associated with ageing and maintaining activity levels from earlier in the life span (Van Dyk, 2014).

More recently there has been a shift in what is conceived as successful ageing to include a good later life within the context of disability and disease (Wahl et al., 2016). There has also been an emphasis on acknowledging the wider, societal influences of health and not simply focussing on lifestyle choices, something which has been supported by empirical evidence (Bulow and Soderqvist, 2014). Rowe and Kahn lately published work which developed and built on their earlier model, advocating the use of a life course perspective which pays wider

acknowledgement to the determinants of health in order to mitigate some of the concerns around promoting blame or discrimination for those who developed disease or disability in later life (Rowe and Kahn, 2015).

2.2.7 A life course perspective

A life course perspective can be described as a paradigm or framework which considers the facets of a person's life, health, and wellbeing within the context of the life course (Elder, 1994). In many ways it draws together the two paths of critical gerontology described above, by allowing for consideration of both the individual components and the wider historical and social elements which shape later life (Victor, 2005).

As consistently demonstrated in the above literature, health and wellbeing are complex phenomena. A life course perspective has been used across disciplines to allow for a richer understanding of the factors affecting health and wellbeing (Elder, 1994). When considering women who live alone in later life, a life course perspective can include the trajectory which leads women to live alone, the level of choice or the timing which have been shown to influence health and wellbeing (Borell and Karlsson, 2003; Chandler et al., 2003; Eshbaugh, 2008). This may include the history of relationships or how the meaning of certain phenomena change over time (Weston and Qu, 2003; Barry et

al., 2018). A life course perspective also acknowledges the accumulation of experiences and influences which can affect the perception or impact of individual factors in later life and can be important if considering the accumulation of disadvantages for a particular group (Estes, 2004; Heap et al., 2017; Hooyman et al., 2002; Narushima and Kawabata, 2020).

By contextualising the biomedical within a particular history and culture, research into later life has been shown to be improved by engaging with a life course perspective and government organisations have acknowledged its importance in shaping health and wellbeing in later life (Streib and Binstock, 1990; Public Health England, 2016).

2.2.8 A phenomenological perspective

The literature discussed in this chapter underlines the importance of the role of an individual's attitudes and experiences in shaping health and wellbeing in later life. These experiences and attitudes are shaped by events throughout life and our responses to them. In turn, these experiences help to shape coping strategies and values which can contribute to health and wellbeing in later life (Morrissey, 1998; Freixas et al., 2012). The way in which one experiences and attributes meaning to phenomena is complex and influenced by cultural, historical, and personal contexts. This suggests that the particular experience of an older woman living alone in the UK at this point in

history will be shaped by a range of factors which would benefit from a deeper understanding.

Research which examines the phenomenology of ageing can help to gain perspectives which other methodologies cannot reach and is recognized as a useful approach within gerontological research (Powell, 2014). The experience of later life is not commonly experienced directly by those carrying out research, writing policy or designing health interventions. As an experience it warrants further investigation in order to better inform these groups and build a more robust knowledge base on which to develop future policy or research.

Phenomenology originated as a philosophy concerned with knowledge construction and systems of knowledge (Finlay, 2011). Earlier Husserlian phenomenology focused on recording or describing a particular phenomenon. Later traditions expanded this description, such as that expounded by Heidegger which developed a more hermeneutic approach, concerned with exploring the meaning making involved in experiencing a phenomenon (Inwood, 2000). As a research method, it has become popular within the field of psychology and beyond and is concerned with examining lived experience and the resulting construction of meaning (Smith et al., 2009). Experiences throughout life shape attitudes and responses later in life. Therefore, exploring the experience of a phenomenon and the associations and

meanings related to it, can help to better understand it. Existing research looking at older women who live alone has largely considered the phenomenon within the specific context of a medical condition such as dementia or heart disease (De Witt et al., 2010; Robinson, 2002). There were no studies found which considered the experience of living alone within a broader context of overall health and wellbeing.

2.3 A scoping review: method of search

A scoping review is most often used when considering a broad area of research and in identifying the nature of existing knowledge, in turn identifying gaps in the literature and areas for further research (Tricco et al., 2018). This is in contrast to a systematic review, for example, which seeks to answer a specific question such as 'Which treatment is best for X?'. The starting point for this review was the question 'What is known about the health and wellbeing of older women living alone in the UK?' The search was completed using the databases CINAHL, Medline, PubMed and Academic Search Elite. Initial search terms were: 'older women', 'elderly', 'living alone', 'lone-dwelling', 'health', and 'wellbeing'. This was then expanded to include 'household composition', 'living arrangements', and 'cohabitation' based on key terms in the early findings. The search terms were combined using Boolean function 'AND' so that terms referring to the population of interest (e.g. 'older women,' OR 'elderly,' OR 'later life,') were searched for in combination with terms referring to the context of

interest (e.g. 'household composition,' OR 'living alone,' OR 'lone-dwelling,' OR 'living arrangements,') and terms referring to the outcomes of interest (e.g. 'health,' OR 'wellbeing,').

Literature dealing exclusively with the health and wellbeing of older women who live alone within the UK was limited to five papers (Morrissey 1998; Kharicha et al., 2007; Frazer et al., 2011; Rolls et al., 2011; Khan et al., 2018). Therefore, the inclusion criteria were broadened to include literature beyond the UK which examined determinants of health and wellbeing in later life with an emphasis on household status, gender and/or social resources. As is usual in such exercises, the grey literature, reference lists of found articles and Google Scholar were also used to extend the search. A summary of results can be seen in Figure 2.1. In screening the material, articles which were not felt to meet the objectives of this review were excluded such as those which specifically assessed the efficacy of a healthcare intervention or those which examined the routes which lead to women living alone in later life. Only English language publications were included.

The final selection of articles was reviewed, and thematic analysis was used to draw out key themes and findings. Overall, studies tended to examine determinants of health which could be grouped into seven themes: Socio-economic status (SES), social capital (including

household composition), neighbourhood and housing factors, ethnicity and immigration status, gender inequalities, socio-cultural environments and self-efficacy or perceived control. The results are presented below, commencing with a brief description of the found data before discussing each of these seven themes. These themes are summarised in the conceptual model (Figure 2.2) which draws together the key concepts resulting from the scoping review.

2.4 A scoping review: summary of results

2.4.1 Characteristics of resulting papers

The resulting articles were broad in scope, date and country of origin. Only five research papers and two theoretical papers were found from the UK; once extended, the search yielded many more international works: the USA was over-represented; perhaps a consequence of the limitations of an English-language search. Papers mainly dated from 2008 onwards (the decade preceding the search, $n=37$) and 10 prior to 2000. Quantitative research dominated the findings as Figure 2.1 illustrates, with 54 quantitative papers to 13 qualitative and 3 discussion papers. The quantitative studies tended to examine determinants of health for older adults, and many considered household composition as a potential determinant (Hughes and Waite, 2002; Gaymu et al., 2012; Chiu, 2019), whereas others focused on health and wellbeing outcomes for those living alone (Chou et al., 2006; Petry, 2003; Foster and Neville, 2010). The qualitative works

tended to focus on a particular sub-group of women living alone for example those post-surgery or with diagnoses of dementia (Robinson, 2002; De Witt et al., 2010).

The determinants of health for older women within the UK literature are generally consistent with those in the global literature but the specific experience of women who live alone in later life in the UK is underexplored.

Figure 2.1. Scoping review process

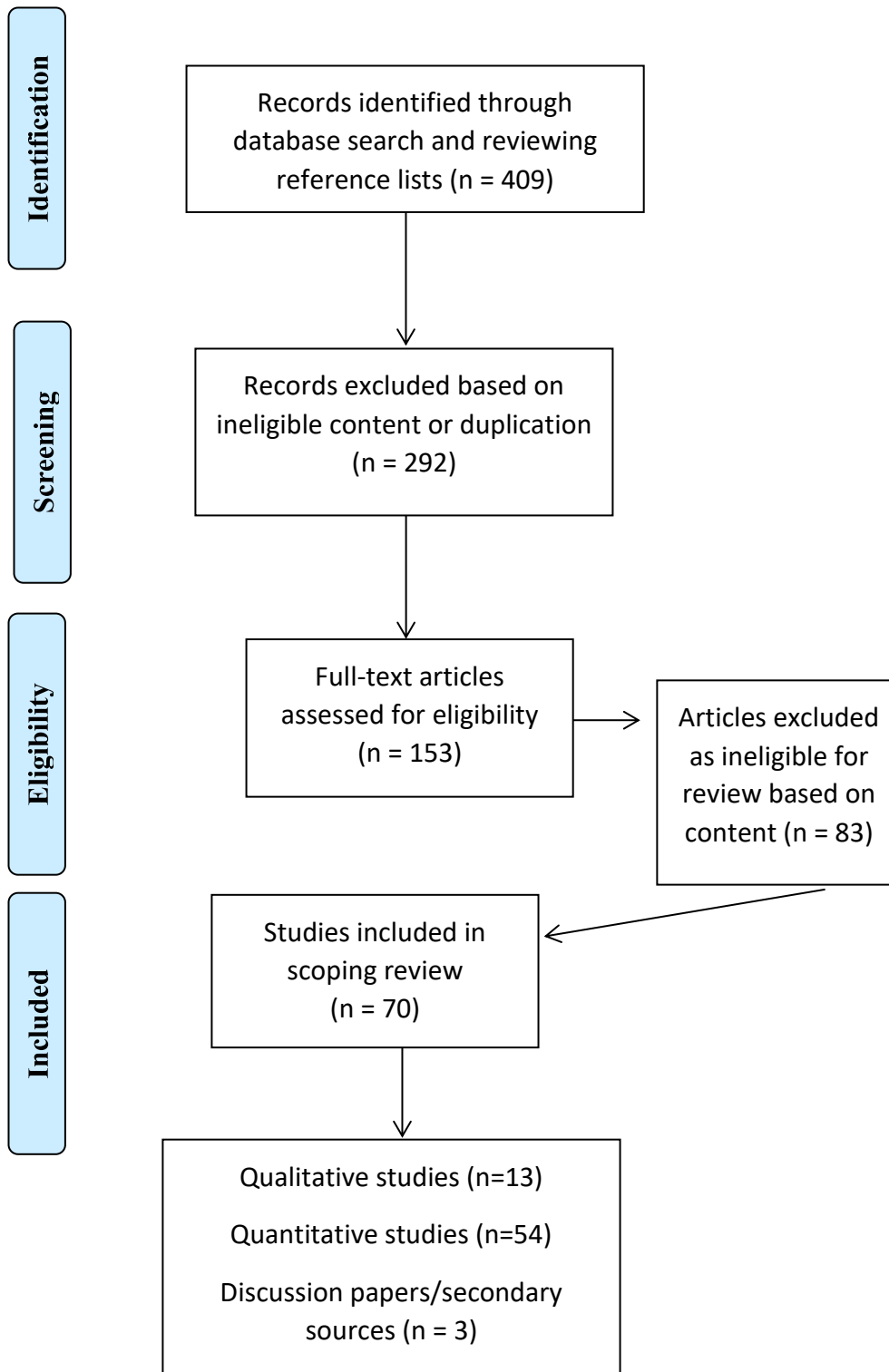
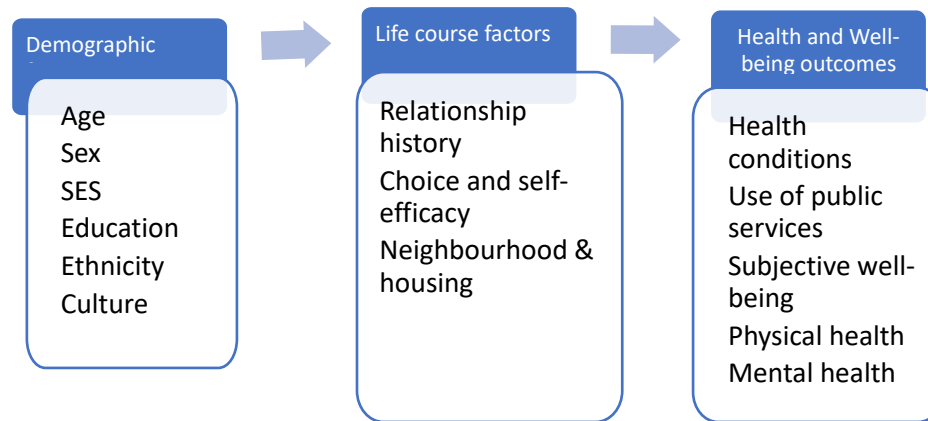


Table 2.1
papers addressing the health and wellbeing of older women living alone in the United Kingdom.

<i>Author</i>	<i>Year</i>	<i>Title</i>	<i>Method</i>	<i>Summary of outcomes</i>
Morrissey, S.	1998	Resources and characteristics of elderly women who live alone	Qualitative: longitudinal descriptive	Primary theme was 'independence'. Personal values affect ability to live alone.
Kharicha, K et al.	2007	Health risk appraisal in older people 1: are older people living alone an 'at risk' group?	Statistical analysis: tests of association and logistic regressions	After adjusting for age, sex income and education, those living alone remained at higher risk of falls, arthritis, glaucoma, and cataracts.
Frazer, M.	2009	Older women's experience of living alone with dementia	Interpretative Phenomenological Analysis	Main themes: loss; embodiment; adapting; awareness; safety; relationships; exclusion; loneliness.
Rolls, L et al.	2011	Older people living alone at the end of life in the UK: Research and policy challenges	Discussion paper	Three factors influencing whether people can remain at home at end of life: physical, material, and social environments.
Khan, H et al.	2018	Single women living alone in late life. Evidence from Understanding Society data	Descriptive statistics and logistic regression	Women more likely to live alone. Those who live alone more likely to report poorer health. Online social network associated with general happiness.

Figure 2.2. Conceptual framework for the statistical analysis



2.4.2 Socio-economic status (SES)

Socio-economic status can be measured by income or wealth and is often predictive of health outcomes across the life course and in later life (Lukaschek et al., 2017; Marmot, 2020). Several mechanisms explain this, such as access to a better diet, housing conditions, medical treatment, and social support. It also determines a person's place in society, shapes how they are treated and in turn can affect how they see themselves. There is also an element of reverse causality in terms of the relationship between health and financial security; while a lower income can lead to poorer health, the added costs of poor health, resulting costs and reduced ability to earn an income can lead to financial hardship (Sacker et al., 2017). The evidence found in this review is consistent with existing research, indicating the importance of SES in determining health outcomes. Lower income was more common in men than women in later life and was associated with increased reliance on informal support (Ryser and Halseth, 2011). Lower income was also associated with reduced life satisfaction while higher levels of SES mediated the relationship between living alone and hospital use (Hu et al., 2019; Kim and Sok, 2013). Education is consistently shown to be associated with better health and has been shown to be associated with increased life expectancy and disability-free life expectancy (Chiu, 2019).

2.4.3 Social capital and household composition

Social support has been consistently demonstrated to have a significant impact on health outcomes across the globe (Dean et al., 1992; Pinquart and Sorensen, 2001; Hays, 2002; Eshbaugh, 2009; Pimouguet et al., 2016). There has been a widespread interest in loneliness in later life and the potentially damaging effects on health and function (Bergland and Engedal, 2011; De Jong Gierveld et al., 2015; Teguo et al., 2016; Saito et al., 2017; Zali et al., 2017; Beller and Wagner, 2018; Shaw et al., 2018a), while perceiving oneself to be well-supported has been linked with increased morale (Collins, 1993).

Evidence continues to point to the importance of the perceived quality of the relationship rather than an objective measure of contact. Friendships have consistently been shown to be important in later life, as is the perceived ability to access support if required (Magaziner and Cadigan, 1989; Banks et al., 2009; Hank and Wagner, 2013). Social contact appeared valued for its maintenance of routine (Cederbom et al., 2014) and, in those living alone, lack of companionship was a concern at times (Eshbaugh, 2008). The use of the internet to access social support has been shown to be associated with better health outcomes (Khan et al., 2018) and may help to maintain contact in those less mobile. Differences between health outcomes in those living alone and those who identified as lonely, underline the importance of not conflating the two (Beller and Wagner, 2018).

In the UK, women are more likely to live alone than in other countries (Khan et al., 2018), and living alone has been shown to be associated with higher risk of poorer health outcomes (Kharicha et al., 2007). More widely, those living alone had poorer health outcomes when compared to those living with family (Sok and Yun, 2011) and have been shown to be at higher risk of mortality (Teguo et al., 2016), institutionalization (Pimouguet et al., 2016), poorer physical health outcomes (Sarkar et al., 2012; Weston and Qu, 2003), reduced independence (Saito et al., 2017), higher falls risk (Berland and Engedal, 2011) and lower mood, self-esteem and life satisfaction (Chou et al., 2006; Kim and Sok, 2013; Tamminen et al., 2019). Those living alone have also been shown to have reduced access to medical examinations and variations in pharmaceutical use (Cermakova et al., 2017) in addition to exhibiting poorer health behaviours and higher use of health services (Kim et al., 2020).

There are some inconsistencies which perhaps highlight the importance of individual trajectories (Kung, 2020; Ziersch and Baum, 2004). Some studies have shown no difference in outcomes for women living alone (Nilsson et al., 2007; Fujino and Matsuda, 2009). Once adjusted for age and falls history, women living alone and those with family showed no difference in levels of loneliness (Zali et al., 2017). Women living alone in later life have been shown to enjoy their

independence and freedom although this may not account for more physically dependent or financially insecure populations (Cheng, 2006).

Evidence indicates that it is not enough to compare those living alone with those cohabiting as there are differences indicated between those living with partners and those living with children or others (Hank and Wagner, 2013; Kim and Fredrikssen-Goldsen, 2016). It is also important to consider reverse causality when considering the link between cohabitation and health outcomes; particularly in Western, individualistic societies older adults may only move in with relatives once they cannot manage living alone (Michael et al., 2001). Finally, the importance of negative transitions for example in the case of widowhood, is an important distinction within the literature (Stone et al., 2013).

These results support a life course approach in later life research, as objective measures of social contact do not explain outcomes relating to wellbeing and quality of life. In those who live alone, contact outside the household is important in maintaining social and psychological support. In retirement social contact can become problematic as often social support is related to the labour market (Victor and Scharf, 2005). Some research has pointed to technology as a way of improving social contact and, in turn, wellbeing (Sacker et al., 2017; Khan et al., 2018).

Loneliness has been increasingly investigated in recent years (Smith and Victor, 2018) and has been shown to change in quality in later life (Qualter et al., 2015). The ways in which people respond to loneliness or other hardships in terms of their values or coping strategies are of interest, particularly in those who live alone. For example, the relationship between self-efficacy, social support and wellbeing is not considered in the current research.

What is clear from the existing literature within the UK is that women who live alone are a potentially vulnerable and growing population, the health and wellbeing of whom is not fully understood. Certain determinants of health have been established and supported in more general literature such as SES, but further research is needed on how health interacts with the nature of social capital afforded by those living alone in comparison with those in shared households. Therefore, the first research question identified from the literature is:

Is household composition a predictor of health and wellbeing outcomes in older women in the UK?

2.4.4 Neighbourhood and housing

The physical environment is acknowledged in UK policy as affecting health outcomes (Marmot, 2020). The findings of this review suggest this has only been considered in a small number of UK papers but has been found to be significantly related to health outcomes (Khan et al.,

2018; Rolls et al., 2011). Other research suggests that the home environment can be both a positive support mechanism and a concern in terms of maintenance or obstacles (Barry et al., 2018). The subjective satisfaction of an individual with their housing is also noted to be a factor (Carp and Christensen, 1986; Grenier, 2005; Walker and Hiller, 2007; Toma et al., 2015). For women living alone it is suggested that suitability of housing can be the difference between a burden and a resource.

In terms of neighbourhood, access to amenities and transport are both important factors for older women; the benefits to health and wellbeing could be suggested in terms of increased levels of independence with tasks such as shopping resulting in increased exercise levels and access to social contact (Dwyer et al., 2000; Walker and Hiller, 2007). For those living alone in later life, a neighbourhood which is inaccessible or unsafe presents a further barrier to social support and enforces a higher level of dependency (Lee et al., 2019; Lak et al., 2020). The influence of rural versus urban locations has been considered (Khan et al., 2018) and access to transport (Lucas, 2012; Morrissey, 1998; Stanley et al., 2011) but neighbourhood and housing have not been considered in relation to health and wellbeing outcomes particularly for those in later life who live alone in the UK.

In order to fully understand the determinants of health and wellbeing in older women who live alone and how this compares with those who cohabit, the second research question was identified:

Do predictors of health and wellbeing in older women who live alone in the UK differ from those who cohabit?

2.4.5 Ethnicity and immigrant status

This review found little mention of the importance of ethnicity or immigration status in the UK literature on this population. In reviewing the literature more widely, consideration of ethnic minorities or the effects of ethnicity on later life appears more prevalent in the United States and UK literature than in research from other parts of the world (Estes, 2004; Ryser and Halseth, 2011). Focusing on older women living alone, there is very little looking at the differences between ethnicities within diverse populations (Ulbrich and Bradsher, 1993; Sereny, 2011; Evandrou et al., 2016) but the evidence available does suggest differences both in the likelihood of living alone and the ways in which women experience living alone. There has also been some consideration of immigration statuses (Wilmoth and Chen, 2003) in relation to depressive symptoms in those living alone in later life, highlighting the differences in manifestations. What is particularly important is that older women who are part of an ethnic minority are at risk of a triple discrimination, that of their age, sex and ethnicity (Minkler, 1996; Estes, 2004), suggesting that further investigation is

warranted of the ways in which this affects health and wellbeing in later life. Given the diversity in ethnicity and immigration status within the UK, these factors merit further investigation especially in relation to other factors such as social support.

2.4.6 Gender and the accumulation of inequalities

This review was carried out based on evidence indicating variations between genders in later life. This premise was confirmed by the findings. No UK studies were found which compared health outcomes of men and women in this context. Beyond the UK, studies indicated differences between men and women in terms of health and wellbeing outcomes in later life (Hosseinpour et al., 2012; Hughes and Waite, 2002; Pizzetti et al., 2005; Yang et al., 2020) and in terms of the importance of social capital (Gaymu et al, 2012; Saito et al., 2017). Women living alone were shown to be at risk of lower subjective wellbeing than men living alone (Lukaschek et al., 2017) and at higher risk of depression (Lin and Wang, 2011). Men and women demonstrated variations in their health behaviours and social determinants of health (Byhoff et al., 2019). There was also evidence of differing health and support needs which may not be met by current policy (Foster and Walker, 2013; Liu et al., 2019; Ko et al., 2019). This supports the needs for further gender specific research which addresses health and wellbeing in later life.

2.4.7 Self-efficacy and perceived control

As noted in the literature regarding social support, subjective factors often mitigate the effects of objective measurements. In addition to satisfaction with social contact this extends to levels of perceived independence and choice. For example, an individual may require physical assistance with a task but if they feel involved in decision-making then they experience more independence and self-efficacy leading to better wellbeing (Cederbom et al., 2014). Studies have also shown that levels of self-efficacy can predict later reduction in function (de Leon et al., 1996). In this review, the theme of control was highlighted as important across the literature (Letvak, 1997; Cederbom et al., 2014). The importance of independence was consistently highlighted (Robinson, 2002; Cheng, 2006; De Witt et al., 2010; Frazer et al., 2011) and was suggested to be more important for women than men when comparisons were made (Sun et al., 2007). This notion of self-efficacy was also evident in studies which showed the importance of being able to contribute something to life, indicating that better wellbeing was associated with meaningful interactions (Roberts and Cleveland, 2001; Foster and Neville, 2010). For those living alone, the issue of choice and control over living arrangements was also highlighted as important in contributing to feeling of wellbeing (Connidis, 1983; Magaziner et al., 1988; Sereny, 2011).

Psychological wellbeing has been linked more strongly to self-rated health than physical health in later life (French et al., 2012) suggesting that physical decline in later life may impact less on wellbeing if an individual continues to perceive a level of control or self-efficacy over their daily life. The balance between support and perceived independence is complex, however (Narushima and Kawabata, 2020). As with the influence of societal expectations, self-efficacy is potentially difficult to measure but may hold some useful insights into how the experience of later life is shaped and in turn affects health outcomes. The experience of later life is under-represented in the literature but may have important implications for the health and wellbeing of those in later life and merits further investigation. Therefore, the third research question is:

What are the experiences of older women living alone in the context of health and wellbeing in the UK?

2.4.8 Social and cultural environments

Previous research consistently demonstrates that cultural expectations can affect factors contributing to health and wellbeing in later life and this is confirmed by the current review. The expectations and norms of a culture are internalized over a lifetime and can shape an individual's self-perception and in turn how one experiences aspects of later life (Hausknecht et al., 2020).

Variations in risks and experiences of ageing have been indicated across European and Organization for Economic Co-operation and Development (OECD) countries pointing to cultural values and norms which shape later life (De Jong Gierveld and Van Tilburg, 1999; Banks et al., 2009). Other studies confirm that external expectations from society can affect the way in which individuals make sense of decision-making processes in later life and in turn how they might experience their wellbeing or quality of life (Petry, 2003; Band-Winterstein and Manchik-Rimon, 2014). In societies which tend to value close family dependency, such as in Asian cultures, living with family may be an expectation rather than a requirement, although within the same culture, this collective mentality may also be, for some, justification for living in residential care in order to reduce the perceived family burden (Dwyer et al., 2000; Weston and Qu, 2003; Lim and Ng, 2010).

Cultural environments vary in terms of the value and treatment of those in later life and can affect the nature and quality of intergenerational support in later life (Khan, 2014). Often these attitudes are shaped over generations and become embedded in policy, research and other discourse which reinforce value judgments and can result in direct or indirect discrimination (Barken, 2019; Luken and Vaughan, 2003). An example of this is policy around retirement age which can affect those of lower SES or women who have taken time from paid employment for child-rearing (Estes et al., 2003, Grady, 2015).

There is little empirical research specifically addressing living alone in later life in the UK from a cross-cultural perspective, although theoretical work has begun to address it (Arber et al., 2003; Estes et al., 2003). It could be suggested that many of these influences are hard to assess or acknowledge given their subtle and pervasive nature. Some phenomenological studies may indicate such influences when considered critically (Frazer et al., 2012; De Witt et al., 2010) but this evidence is sparse, and the experience of later life remains underexplored. Given the changes to societal norms within the UK over the last century, and the resulting heterogeneity of experiences these have engendered, the final research question is therefore:

How do life course trajectories affect women who come to experience living alone in later life?

2.5 Summary of the chapter

In considering the health and wellbeing of older women who live alone in the UK a scoping review was indicated. The context for the search has been discussed. The methods of the search were detailed followed by a discussion of the results. The results for UK specific studies were limited and therefore the search was broadened to global studies which examined household composition in relation to health and wellbeing outcomes. The literature examined has come from a range of disciplinary fields and therefore covers a wide range of

interests and foci. Included in this scoping review are studies which consider living arrangements and health for other populations (Sok and Yun, 2011) or examine a specific aspect of living alone for women, such as living alone with a diagnosis of dementia (De Witt et al., 2010). Very little literature specifically explores the phenomenon of living alone for older women in the UK and the effect this has on their health and wellbeing. The research that exists does not address key variables such as ethnicity or self-efficacy, which could significantly improve understanding of this population. None of the studies included in the review addressed the influence of life course events or used a phenomenological approach to examine the experience and meaning making of living alone in later life.

There is research which points to the vulnerability of this group (Kharicha et al., 2007; Weissman and Russell, 2018) and therefore confirms the importance of further investigation. The particularity of ageing for this population and the importance of understanding wider determinants of health have also been acknowledged in UK government publications demonstrating the relevance and timeliness of the topic (Government Office for Science, 2016; Public Health England, 2020). There is a clear need to carry out further research which seeks to close these gaps in the literature. The research reported in this thesis will add to the body of knowledge regarding this population by answering the four research questions identified.

Chapter 3

Methodology

This chapter sets out the methodology used in this study. It starts with a discussion of how a theoretical framework has guided the methods of the study. As highlighted in the literature review (section 2.2.5), the theoretical approach of critical feminist gerontology is a useful theory when examining the health and wellbeing of older women. The rationale for the choice of theoretical approach is set out and how it has been used as a lens through which to consider the data and analysis carried out in this thesis.

Following this, the chapter identifies the research paradigm which underpins the study, why it was chosen and how it was operationalised.

The chapter then describes the methods used to carry out the study. This was a mixed methods study, consisting of two key phases, the first statistical analyses of data from the UK Household Longitudinal Study, the second, qualitative analysis of seven 1:1 interviews carried out with older women living alone. This chapter clarifies the purpose and rationale for using mixed methods, before describing

the operationalisation of each phase, the synthesis of the two, and how they combine to answer the four research questions (listed in section 1.3).

The first phase of the mixed methods used was the quantitative phase which used data from the UK Household Longitudinal Survey (UKHLS). The background to the data source is described followed by details of recruitment, sampling, and data collection. The methods used to carry out the descriptive and then inferential statistical analysis are then set out. The results from the quantitative phase helped to shape the focus of the qualitative phase and the process for this is outlined.

The qualitative phase of the study is then described. The research questions guided the choice of approach. As research questions three and four (see section 1.3) considered the experience and life course trajectories of older women who live alone, a decision was made to use a narrative phenomenological approach for the second phase of the study, guided by work by Smith et al. (2009) and Langdridge (2007). This involved using two analyses of the same data, as presented in Table 3.1. Interpretative Phenomenological Analysis was used in order to answer the question:

What are the experiences of older women living alone in the context of health and wellbeing in the UK?

Critical Narrative Analysis was used in order to answer the research question:

How do life course trajectories affect women who come to experience living alone in later life?

These methods affect the whole process including sampling and data gathering; therefore, the rationale for choosing them is presented first. The chapter then proceeds to a description of sampling, recruitment and a rationale for data gathering. The methods used to analyse the data are then detailed followed by an explanation of how the results from both phases of the study are synthesised.

The last sub-section details ethical considerations for both phases of the study and describes the process for gaining ethical approval.

3.1 Theoretical lens: Critical Feminist Gerontology

Section 2.2.5 in the literature review describes in detail the background and approach of critical feminist gerontology. It is a relatively recent development in critical theory in that it combines previous distinct lines of enquiry of feminism and critical gerontology. As a theoretical approach it encourages a broader consideration of the experience and nature of ageing by considering the individual within a number of contexts. These contexts include the embodied, physical experience of ageing as a stage within a life course. They also include broader

contexts which can shape a life course such as community or the political economic and historical contexts. As this study focuses on the health and wellbeing of older women it was important to identify the critical and theoretical approaches which might frame the findings. This enables the findings to be considered within a broader discourse, allowing for a richer reading. It also enables the final stage of the study which is a synthesis of the findings from both phases of the study at a theoretical level, thereby improving the quality and impact of the work as a mixed methods study.

3.2 Research paradigm

3.2.1 Rationale for choice of paradigm

The starting point for this study was the set of research questions identified in chapter two which consider the health and wellbeing of older women who live alone. The health and wellbeing of a population are multifaceted and complex. A commonly used definition of health (WHO, 2016) encompasses physical, mental and social wellbeing and explicitly recognises this complexity. There is no definitive way in which to measure health or wellbeing although there have been many attempts (Bowling, 2014). What is evident from the literature is that there is no single 'truth' when examining health and wellbeing and the concepts differ widely depending on the audience (O'Cathain, 2009). In researching such complex states of being, the research paradigm

of pragmatism was felt to be the most suited to this project (Morgan, 2007).

3.2.2 Pragmatism as a research paradigm

A pragmatic approach rejects the notion of a universal truth and instead seeks to use the methods appropriate for gaining answers to research questions, particularly those which have a real-world application as in this instance (Morgan, 2014). The approach also views as artificial the positivist/constructionist dualism which has so-long dominated the research field. Instead of a dogged philosophical adherence, the pragmatic researcher seeks to answer research questions in the most fitting manner, with the priority being knowledge production (Weil, 2017).

3.2.3 Pragmatism and mixed methods research

Considering inductive/deductive methods to be incompatible or on opposing poles is unhelpful (Craciun et al., 2015; Howe, 1988); acknowledging the limitations of traditional dichotomous paradigms enables a richer and more relevant production of knowledge to better address real-world issues (Johnson and Onwuegbuzie, 2004; O'Cathain, 2009; Pluye and Hong, 2014). For this reason, pragmatism paradigms often underpin research which uses mixed methods i.e., utilising both qualitative and quantitative methods to obtain the information sought. The combination of qualitative and quantitative

methods in a single project can be referred to as mixed methods research (MMR).

A mixed methods approach, or mixed methods research (MMR) fits well within the pragmatic stance described. MMR is often used when examining phenomena which are complex or multi-faceted in order to gain a fuller understanding of the topic (Cresswell et al., 2006). MMR can be operationalised in different ways dependent on the research objectives and, as a consequence, various typologies have been proposed (Greene et al., 1989; Ivankova et al., 2006). This flexibility of method and commitment to knowledge production are consistent with the philosophical origins of pragmatism (Morgan, 2014).

3.3 Mixed methods

3.3.1 Purpose of mixed methods

A mixed methods approach was chosen for this study based on the research questions and the knowledge sought. Health and wellbeing have different meanings for different stakeholders; for example, local NHS Clinical Commissioning Groups (CCGs) decide which services and interventions to fund. For CCGs, levels of service use (e.g. inpatient hospital stays) can be a useful outcome measure of an admission avoidance project. For an individual patient, the concept of their health may not be measured in admissions or medications but in their ability to feel in control of daily activities. The importance of

acknowledging both such perspectives was a deciding factor in choosing a mixed methods approach. Given the multiple realities inherent in health research, it felt important to choose a methodology which would be able to capture different facets of the phenomenon under investigation.

Greene et al. (1989) identified five main purposes for which mixed methods research are used. These are: triangulation; complementarity; development; initiation and expansion. Based on these, this study uses the MMR in order to provide complementarity. This is defined as a study examining overlapping and different aspects of the same phenomenon, unlike triangulation which can be defined as examining the same facets of a phenomenon using different methods. While the first two research questions focus on wider trends and patterns of health and wellbeing in older women who live alone, the last two research questions focus on aspects of the individual experience. The two sets of data provide an enriched insight into the phenomenon by drawing from the strengths of each method.

The quantitative phase of the study builds on earlier work by Khan et al (2018) which began analysing data from the UK Household Longitudinal Survey (UKHLS) to begin to model potential relationships between demographic and lifestyle factors and health and wellbeing outcomes of older women living alone. Using mixed methods to

provide complementary data is particularly relevant as the Understanding Society dataset, while being broad, was not designed specifically to capture information about living alone and therefore does not capture a full representation of this phenomenon. It was acknowledged that these results would be expected to give a useful overview of patterns, trends and potential inferences but are not able to provide a rich insight into the experience and nuances of the phenomenon. Qualitative methods were employed to provide a richer depth of understanding of the topic by engaging with the phenomenon on a micro-level.

3.3.2 Structure of mixed methods

Within mixed methods research there are many ways in which qualitative and quantitative methods can be used together to best answer research questions. The timing, weighting and use of each phase of the study can each vary according to the purpose of a study (Ivankova et al., 2006; Schoonenboom and Johnson, 2017). An example could be that a trial of a therapeutic intervention which was assessed using quantitative methods showed a lower rate of efficacy than expected. A follow-up phase could be completed using a qualitative approach in order to examine the experience of the participants which may explain the quantitative outcome. Conversely qualitative studies can be used to scope out attitudes or priorities of the target population in order to ensure the phenomenon assessed

through the quantitative phase is the most appropriate. In either of these examples the pragmatic approach is evident; the methods are used as tools in order to acquire the knowledge required to best answer the research questions.

The typology of MMR depends on the emphasis and sequence of methods; this project was sequential in nature with each aspect of the study having equal status, represented thus: QUAN → QUAL (Holloway, 2017; Schoonenboom and Johnson 2017). A summary of how the two methods were used to address each research question is presented in Table 3.1. The methods had several connecting points as defined by Ivankova et al. (2006). The first connecting point was in the study design; by planning to carry out MMR from the beginning, the research questions introduce MMR structure. The second and third were, respectively, the influence of the statistical results on the interview schedule and the integration of the results at the theoretical level.

The qualitative phase of this study enriched the knowledge by providing a level of complementarity to the statistical data. While the general aim of the interviews was established in the design stage based on the research questions, the results from the statistical analysis highlighted areas such as volunteering and community access which would benefit from further expansion and, therefore, this

provided a second point of connection between the methods whereby the exact nature of the interviews depended on the outcomes of the statistical analysis. A narrative phenomenological approach was used to analyse data from five in-depth interviews. The aim was for these data to enrich the quantitative data and contribute a deeper understanding of the experience and meaning making associated with living alone for this population. Finally, the whole study outcomes were synthesised at a theoretical level in the context of existing literature in order to build a robust contribution to knowledge. This concluding synthesis acts as a final connecting point for each of the methods used.

Table 3.1 How research questions were addressed

<i>Research Questions</i>	<i>Data Source</i>	<i>Data Analysis</i>
1. Is household composition a predictor of health and wellbeing outcomes in older women in the UK?	Data from the UKHLS (obtained from the UK Data Service)	Graphical analysis Exploratory data analysis Descriptive analysis Correlation and regression
2. Do predictors of health and wellbeing in older women who live alone in the UK differ from those who cohabit?	Data from the UKHLS (obtained from the UK Data Service)	Correlation and regression Logistic and linear regression analysis
3. What are the experiences of older women living alone in the context of health and wellbeing?	Qualitative interviews	1:1 Interpretative Phenomenological Analysis
4. How do life course trajectories affect women who come to experience living alone in later life?	Qualitative interviews	1:1 Critical Narrative Analysis

UKHLS = UK Household Longitudinal Study

3.4 Phase One: quantitative analysis of data from the Understanding Society dataset

3.4.1 Objectives of Phase One

The objectives of the quantitative phase were:

- To examine and compare the characteristics of older women in the UK when grouped by household composition.
- To examine the relationship between demographic factors including household composition and health and wellbeing outcomes in older women in the UK.
- To compare the health and wellbeing outcomes of older women living alone in the UK with those in other household compositions.
- To identify the role of demographic and lifestyle factors in determining health and wellbeing outcomes in those women who live alone.

These answer the following research questions:

1. Is household composition a predictor of health and wellbeing outcomes in older women in the UK?
2. Do predictors of health and wellbeing in older women who live alone in the UK differ from those who cohabit?

3.4.2 *Rationale for use of the UK Household Longitudinal Survey (UKHLS)*

For these research questions, extensive data from a nationwide survey was the most desirable source in order to examine patterns across different health and wellbeing outcomes from a large enough sample to make statistical analysis valid and reliable. A national survey allows for analysis between household composition types and across a range of sociodemographic factors and was, therefore, the most appropriate in order to gain the most reliable and valid results. Therefore, the 'Understanding Society' dataset was chosen for secondary analysis. 'Understanding Society' or the UK Household Longitudinal Study (UKHLS) is an initiative funded predominantly by the [Economic and Social Research Council](#), with scientific leadership by the [Institute for Social and Economic Research](#), University of Essex. It is the largest longitudinal study in the UK and collects data from over 40,000 households. The study collects data about a wide range of social, economic and health factors and includes data representative of all ages, ethnicities, and socioeconomic backgrounds (Knies, 2018). Participants take part in a survey annually to create a rich database which has provided a source of data for many studies looking at life in the UK (Evandrou et al., 2016; Khan et al., 2018). More information on the background, recruitment, data collection and variables can be found using the details in Appendix 1. As with all data sources there are limitations involved in the use of the Understanding Society dataset. One concern could be the consideration that those who live

alone may be more likely to drop out or to not respond. This issue is addressed to some extent by adapting data collection methods. One particular example relevant in this context is for those who are recently widowed or divorced and therefore may find the questionnaire process intrusive at a sensitive time (Lynn, 2020). This is addressed by maintaining contact with the participants and collecting minimal or no data for a year or so until the participants are comfortable to resume usual engagement with the project. Concerns specifically regarding those who live alone are not discussed.

3.4.3 Understanding Society sampling, recruitment, and data collection.

Data collection for the UKHLS started in 2009 with Wave 1; 2018 saw the release of data from Wave 8 which was used in the current study. The data available have been harmonised with data from the British Household Panel Survey (BHPS) which commenced in 1991. There are several samples included in the total data including the original BHPS sample, the UKHLS sample which is representative of permanent households in the UK, an Ethnic Minority Boost sample and an Immigrant and Ethnic Minority Boost sample which are both intended to ensure these groups are adequately represented in the data.

The sample design is proportionately stratified (equal probability), created by clustering samples of addresses selected from the Postcode Address File. These in turn were stratified based on the proportion of respondents reporting manual/non-manual employment. These strata were then sub-divided based on population density and ethnic minority density. Individual households were then randomly sampled from these sub-divided strata. Participants were recruited to the study by interviewers contacting the households to gain consent for the study.

Data are collected on an annual basis, usually through face-to-face interviews. Some data are now also collected by online survey or by proxy members of the household if the respondent is unavailable. The questionnaires include questions on a wide range of issues across health, social, economic and political aspects of life in the UK. Full details of the contents of the questionnaires are available from the Understanding Society Study User Guide (Knies, 2018).

3.4.4 Rationale for selection of variables

The core questions asked at each Wave of the UKHLS remain the same each year, however, there are some modules of the questionnaire which are asked at intervals, for example, on alternate Waves. For this project, the data from Wave 8 were used which was the most recently available Wave at the time of analysis. This meant

that variables were chosen from those available from the Wave 8 dataset. Variables were then selected based on the results from the literature review, in several cases dummy or proxy variables were used in order to meet the research objectives. Table 3.2 summarises the variables, their values, and the levels of measurement.

The use of secondary data, that is, the Understanding Society dataset, was decided upon due to the size of the dataset and the range of variable available. It is the largest study of its kind and explores a wide range of social, economic, lifestyle and health areas with a sample designed to be representative of the whole of the UK population. It was felt that such a dataset would be far more powerful than any quantitative data which could be collected by the researcher in a survey in the context of the limitations of this study. The Understanding Society data are collected by a team of researchers from across the UK and include responses from over 40,000 households, in contrast, a survey designed for and carried out for a study of this size could not hope to collect such a quantity of data. Despite the huge advantages of using such a large and powerful dataset, there are limitations to using ready-made data rather than data collected specifically for a study. One such limitation is the choice of variables which are available for analysis. The Understanding Society survey is designed to be a wide-ranging examination of social factors across the UK with relevance to many areas of study. However, this means that it is not designed with a specific topic of investigation in mind and, in this case,

is not intended as an examination of older women, nor of lone dwelling. In choosing to use data from this survey, this study was limited by which variables were available in the dataset, rather than those which could be gleaned from a more specifically tailored survey carried out for the purpose of the study. One example of this is the need to create a proxy variable for 'living alone' as this is not available in the original data. There are also no variables which account for the reason living alone or the timeframe of doing so: both of which would be useful in terms of establishing relationships around the circumstances of living alone and the resulting health and wellbeing outcomes. Another example is the use of the variable 'wanting to move' which was used as a proxy variable for dissatisfaction with current living situation. The response to this is obtained by the question 'If you could choose, would you stay here in your present home or would you prefer to move somewhere else?' This is useful in terms of establishing an element of dissatisfaction with the current home but leaves out the rationale for wanting to move which could range from issues with the property or dissatisfaction with the neighbourhood to proximity to family or a desire for change. On balance, it was felt that the benefits of using such powerful data available through the UKHLS outweighed the benefits of using original survey data collected for this study.

The independent variables were examined for correlation. The results of this can be seen in Appendix 2. Several of the variables were correlated and this is to be expected. For example, age is likely to be

correlated with marital status as people are more likely to become widowed or separated with age. Living alone was also significantly correlated with marital status which makes sense as those who live alone are most likely to do so having been widowed or separated. In order to examine the individual effects of the variables in the regression models and to examine effects of collinearity, the individual variables were entered into the initial regression models in a stepwise fashion (see Section 4.4 for more details).

Further examination was made of the explanatory variables. Multicollinearity tests were carried out and the results of these can be seen in Appendix 3. While there is some debate around the cut off of the VIF between 4 and 10 are usually considered reasonable cut offs (Field, 2018; O'Brien, 2007). With this in mind there is collinearity between the marital statuses which is to be expected. There is also potential multicollinearity between marital status and living alone. Again, this is to be expected as the two variables are likely to be strongly related as seen in the correlation tests discussed above. Within the explanatory variables there are seen no problematic VIFs even with the lowest cut off of 4.

Table 3.2. Variables: phenomena measured, level of measurement and coding.

	<i>Variable</i>	<i>Level of measurement</i>	<i>Values/coding</i>
Demographics	Age categories (proxy of h_dvage)	Nominal	0=0-64, 1=65-74, 2=75-84, 3=85+
	Women 65+ who live alone (proxy)	Nominal	0=no, 1=yes
	Women 65+ who live with Spouse (+/-others) (proxy)	Nominal	0=no, 1=yes
	Women 65+ who lives with others (not spouse) (proxy)	Nominal	0=no, 1=yes
	Marital status grouped	Nominal	1=single, 2=married/CP, 3=sep/div, 4=widowed, 5=living as couple
	UK region	Nominal	1=England, 2=Wales, 3=Scotland, 4=Northern Ireland
	Household composition (proxy)	Nominal	1=living alone, 2=spouse, 3=w/others
	Ethnicity	Nominal	1=White, 2=others
	Total personal income weekly	Scale	NA
	Employment status (proxy h_ff_jbstat)	Nominal	0=employed, 1=unemployed, 2=retired, 3=unpaid occupation, 4= other
	Employed or not (proxy h_ff_jbstat)	Nominal	0 = employed, 1 = not employed
	Sex	Nominal	0=Male, 1=Female
	Total net personal income (GBP)	Scale	NA
	Log of income	Scale	NA
	Urban v Rural	Nominal	0=Urban, 1=Rural
	Highest qualification	Nominal	1=degree or higher, 2=A-level, 3=GCSE, 4=other, 5=none
	Education (dichotomised) h_hiqua_dv	Nominal	0 = low 1 = high
	Housing Tenure (proxy h_tenure_dv)		1=owned, 2=mortgage, 3=social rent, 4=private rent, 0=other.
	Homeowner (proxy h_tenure_dv)	Nominal	0=Not homeowner, 1=Homeowner
	Age	Scale	NA
	Belong to religion	Nominal	1=Yes, 0=No

Potential covariates	Regular car use	Nominal	1=Yes, 0=No
	Regular bus use	Nominal	1=Yes, 0=No
	Regular train use	Nominal	1=Yes, 0=No
	Immigrant to UK	Nominal	1=Yes, 0=No
	Would like to move	Nominal	1=Yes, 0=No
	Volunteered in last year	Nominal	1=Yes, 0=No
	Carer (external to household)	Nominal	1=Yes, 0=No
	Regular internet use	Nominal	1=Yes, 0=No
	Non-coresident relationship	Nominal	1=Yes, 0=No
	Sees friends and family	Nominal	1=Yes, 0=No
	Goes out socially	Nominal	1=Yes, 0=No
	Long standing illness or disability	Nominal	1=Yes, 2=No
	No. of visits to GP	Ordinal	0=0, 1=1-2, 2=3-5, 3=6-10, 4=10+
			Dichotomised for regressions: 0=low (0-5) 1=high (6+)
Health and wellbeing outcomes	General subjective health;	Ordinal (1-5), dichotomised	0 = poor, 1 = good
	SF-12 physical	Scale	0-100 (100=high function) converted from original scoring (SF12-2)
	SF-12 mental	Scale	0-100 (100=high function) converted from original scoring (SF12-2)
	Life satisfaction (proxy h_sclfsat1)	Nominal	0=Not satisfied, 1=Somewhat satisfied, 2=Mostly satisfied, 3=Completely satisfied.
			Dichotomised for regressions (0=not satisfied, 1 = satisfied)
	GHQ likert	Scale	0-36 (36=least distressed). (REVERSED FROM ORIGINAL SCORE)

CP = civil partnership, GBP = pounds sterling, SF-12 = Short Form 12 (see section 3.4.4), GHQ = General Health Questionnaire (see section 3.4.4).

3.4.4a Demographic variables

As the main aim of the study was to examine the health and wellbeing of older women living alone, a key variable was household composition. This was created as a categorical dummy variable using the available data regarding household composition. The three categories differentiated between living alone, living with a partner (either with or without additional members of the household) or living with others (not including a partner) as indicated by previous studies (Gaymu et al., 2012). 'Living with a partner' included co-habiting couples, married couples and civil partnerships. Those living alone were identified using the existing variable created by UKHLS 'h_hhsize' which numerated the number of people residing in a household: therefore, those households which had one occupant were considered to be living alone. Those living with others were those who reported a household size larger than one and were not living with a partner or spouse.

Based on the findings from the literature, demographic variables were chosen to include in the modelling in order to control for the effects of known determinants of health and wellbeing. Other demographic variables included highest level of education, a measure of socio-economic status (in the form of personal monthly income) and age all of which have a good evidence base in the existing literature as potential confounding variables (Foster et al., 2018; Marmot, 2020;

Martikainen et al., 2008; Rahman et al., 2016). Education was dichotomised to school level and above in order to simplify analysis for the regressions due to the number of variables involved. The individual monthly net income, measured in pounds sterling, was used to represent SES and the log of this was used in order to reduce the effect of outliers. Region in this case refers to which of the UK countries participants lived in, and area type (urban versus rural) were also included to look for geographical variations within the UK.

Ethnicity affects many aspects of life and while it has been shown to affect SES, access to support and health in later life, it has been omitted from similar studies (Higgs et al., 2005; Koehn et al., 2013; Khan et al., 2018). This is especially important given the intersection of inequalities faced by women from ethnic minorities in later life (Calasanti, 2010; Minkler, 1996). Given the small number of ethnic minorities in the study compared to White ethnicities (illustrated in Table 4.2, in chapter four), a proxy variable was created which dichotomises ethnicity into White and non-White as per Toma et al. (2015). This small number is reflective of the ethnicities of the over 65s in the general population which at around 3% is smaller than the overall population which is around 9% (Katbamna and Matthews, 2006; ONS, 2020). This small proportion potentially affected the statistical tests and is acknowledged to be a limitation of this study (section 8.4).

Marital status was used in order to acknowledge the multiplicity of ways in which women come to live alone in later life, and to attempt to consider lone dwelling within a life course perspective (Gaymu et al., 2006; Rahman et al., 2016; Alamino and Ayuso, 2019). The categories were simplified to equalise marriage and civil partnership for example by putting widowed and surviving civil partnership in one category in order to simplify analysis.

3.4.4b Potential mediating variables

For the second research question, examining the determinants of health in older women living alone, additional variables were chosen to test for potential relationships with health and wellbeing. Mediating variables account for the way in which independent variables influence dependent variables. In this case they were chosen to further examine predictors of health and wellbeing in older women. The additional variables were chosen based on findings from previous studies which indicated the potential role of certain social and lifestyle factors in determining health and wellbeing. Given the recent interest in the role of social capital in determining health outcomes in later life (Mah et al., 2021; Noguchi et al., 2019), it would be remiss to exclude potential sources of social contact. However, in order to avoid repeating previous studies, measures such as number of close friends were omitted. Measures of lifestyle choices which may increase social

connectivity were chosen such as internet use (Kobayashi et al, 2015; Sacker et al., 2017) and transport use (Government Office for Science, 2016; Shergold 2019). Social contact is often linked with the labour market, but there is also a role for occupation in providing a role or purpose, in addition to any potential financial remuneration (Di Gessa et al., 2017; Robinson, 2002; Schnittker, 2007; Victor and Scharf, 2005; Waddell and Burton, 2006). In recent years, there have been significant changes in government policy in order to encourage longer working lives (Department of Work and Pensions, 2017). Therefore, variables which examine the potential role of employment, informal care work outside the home and voluntary work were selected to explore the potential effects of these activities on health in later life. Volunteering became a major theme as a result of the findings, it is important to note that the variable used from the Understanding Society dataset to identify those who volunteered was a dichotomous variable based on the yes/no response to the following question: *In the last 12 months, have you given any unpaid help or worked as a volunteer for any type of local, national or international organisation or charity?* One issue with this is the variation that this might reflect within the 'yes' category. There are likely to be important differences in the influence of volunteering on health and wellbeing depending on the time, level of commitment and level of exertion involved in the volunteering activity. This suggests that further research is required on the more nuanced influences of volunteering on health and wellbeing.

Internet use was dichotomised into frequent/infrequent based on previous studies which considered over once a month to be frequent (Cotten et al., 2013). Access to transport can affect ability to access local amenities which has been suggested to have an effect on health and wellbeing (Dwyer et al., 2000; Walker and Hiller, 2007). Use of car, bus and train transport was included, dichotomised into frequent/infrequent following previous studies (Chng et al., 2016; Hutchinson et al., 2014). Volunteering, caring for someone external to the household and the presence on a non-coresident partner were all dichotomous with yes/no responses.

The quality or suitability of housing and satisfaction with neighbourhood have both been indicated in other studies to affect wellbeing and this was represented using a proxy variable 'would like to move' (Eshbaugh, 2008; Lim and Ng, 2010; Victor and Scharf, 2005). While this is not sensitive to the reasons behind wanting to move, it indicates a dissatisfaction with present living situation which could impact on health and wellbeing.

Finally, immigration status to the UK was included as a dichotomous variable. The number of 'yes' responses was relatively low at 5% which could potentially have affected statistical tests as with the earlier ethnicity variable and this remains a limitation of the study, highlighting an area for further research beyond this study.

3.4.4c Dependent variables

Variables which measure health and wellbeing were chosen to include a range of considerations which reflect the holistic nature of the concepts. They are divided into those which represent health and those which represent wellbeing.

3.4.4c(i) Wellbeing outcome variables

Wellbeing is acknowledged to be a difficult phenomenon to measure and some debate exists as to the different aspects encompassed by the term. Hedonic wellbeing refers to those facets which consider a sense of happiness, pleasure or enjoyment: a subjective, affect-based measure of wellbeing. Eudaemonic wellbeing refers to a sense of satisfaction with life: this tends to be more related to a subjective assessment of life overall, rather than to happiness per se. Different aspects of wellbeing are acknowledged in the study by the choice of variables.

The General Health Questionnaire (GHQ-12) (Goldberg, 1972) is a standardised assessment often used in clinical and research settings as a measure of mental distress, scored 0-36, a higher score indicates higher levels of distress. In a research context it has been used, with the score reversed, in order to represent subjective wellbeing or

happiness and therefore for this study represents the hedonic aspects of wellbeing (Clark et al., 2019; Ocean et al., 2018). Life satisfaction is asked as a question in the survey with a scale of seven responses ranging from 'Completely Dissatisfied' to 'Completely Satisfied'. As the scale for the individual questions of this questionnaire are not standardised when used alone, this score cannot be used as a scale outcome; therefore, it was used to create a proxy variable. Based on the distribution of respondents, four categories were created in order to simplify analysis: 'Not satisfied', 'Somewhat Satisfied', 'Mostly Satisfied' and 'Completely Satisfied'.

3.4.4c(ii) Health outcome variables

The variable 'presence of a long-term illness or disability' provided a simple dichotomous health outcome of yes/no. To illustrate more sensitive variations, SF-12 (Ware et al., 1998) scores were also used.

The SF-12 is a standardised outcome measure regularly used in clinical and research settings. An abbreviated form of the SF-36, the SF-12 is quicker to administer and has been shown to be valid and reliable. Similar studies have used the SF-12 to good effect (Burdine et al., 2000; Jakobsson, 2007; Tang et al., 2017). The score was provided in two variables, a mental health component (MCS) and a physical health component (PCS) which give scale measurements of health and functioning.

Self-rated health can be a useful indicator of overall health and has even been shown to be a good predictor of mortality (DeSalvo et al., 2006). In this study this was taken from an ordinal variable of self-rated health which was originally derived from a question asking participants to rate their health in one of five categories (Excellent to Poor). This has been dichotomised into 'Good' and 'Poor' health: 'Excellent', 'Very Good' and 'Good' becoming 'Good' and 'Fair' or 'Poor' becoming 'Poor'. This was in order to simplify analysis as per other similar studies (Badawi et al., 2013).

Finally, from a service-provider and commissioning perspective, frequency of service use is often a useful indicator of health or wellbeing and is directly related to the costs of worsening health and wellbeing (Kharicha et al., 2007). A χ^2 test between GP visits and outpatient hospital or clinic appointments showed a high level of association between the two ($p < .001$) and therefore it was felt appropriate to use number of GP visits in order to represent health service use generally.

3.4.5 Data analysis strategy

Analysis was undertaken using IBM SPSS V24. Not only is this software regularly used for studies of this nature (Arber, 2014), the

licence is held by the University meaning appropriate support and teaching were available throughout the project.

3.4.6 Data preparation

The data were requested and downloaded via the UK Data Service website. As per the organisation's data protection guidelines, the data files were kept securely on password protected devices. The data obtained from UK Data Service were from Wave 8 of the UK HLS, including data from all previous waves including the British Household Panel Survey (BHPS), the previous incarnation of the survey. The data for this study was taken from Wave 8, however some information, which would have remained consistent with previous surveys, had been included (e.g., place of birth) and harmonised with the current dataset. Also included in the data were a number of weights which can be applied to the data to allow for discrepancies resulting from issues such as non-response. The weight which is applied prior to analysis is chosen based on the wave used, whether the study is longitudinal or cross-sectional and which of the modules are included. Full information on weighting; how the weights were calculated, and their use has been provided by Understanding Society (Lynn and Kaminska, 2010). For this study, the weight 'h_indinui_xw' was used and applied to the data prior to analysis. This is the appropriate weight for a cross-sectional analysis of the Wave 8 data and allows for the

results to be more accurate in terms of generalisability to the overall population.

Prior to analysis the data were trimmed. As the study focusses on women over the age of 65, those who did not meet these criteria were trimmed from the dataset and a new working file created. Similarly, once the variables of interest had been decided upon, a new file was created in which only the variables to be used remained. Given the total data were initially inclusive of 39,289 respondents and included 2,149 variables this allowed for a more manageable dataset, enabling an easier analysis of the respondents and variables of focus.

3.4.7 Descriptive analysis

Initial descriptive analysis explored the patterns and trends of the chosen variables, comparing the outcomes of older women living alone with those of older women living with partners and with others. Initial frequencies describe the population and explore the variations between the sub-groups. χ^2 tests and ANOVAs were carried out for the quantitative and qualitative variables respectively. These tested for associations or differences between demographic variables and household composition, and then between household composition and health and wellbeing outcomes. A p-value of less than 0.05 was considered to be significant as per Field (2018).

Chapter five presents the results of statistical analysis to examine if determinants of health differ between those living alone and those cohabiting. For this reason, the analysis was carried out separately on those living alone and those not living alone in order to allow comparison. This was as the focus of the second research question was on getting a clearer picture of the health and wellbeing of those living alone rather than detailed differences between the variety of household compositions. Additional variables were included in this second chapter of analysis and therefore frequencies and Pearson's test of association were carried out for these, both between household groups and the outcome variables.

3.4.8 Regression modelling for research question 1

Explanatory analysis was carried out using linear, binomial and multinomial logistic regression modelling, depending on the level of measurement of the dependent (health or wellbeing) variable. GHQ and SF-12 allowed for linear regressions, the variables which had been dichotomised (good/bad health, service use, presence of a long-term illness) were analysed using binomial regressions and 'Life Satisfaction' required multinomial regression. These models allowed for analysis of the relationship between household composition and health or wellbeing, while examining the contribution of demographic variables including age, socioeconomic status and education. For

demographic variables of more than two categories, dummy variables were created to allow inclusion into the linear models.

The demographic variables were added in blocks to allow for examination of the effect of each one to the model. This was carried out up to a maximum of nine models for each dependent variable.

3.4.9 Regression modelling for research question 2

In order to examine potential determinants of health for the sample which lived alone, further regressions were carried out with a wider number of dependent variables. This allowed for a more detailed examination of the sample which comprise the focus of this study. The demographic variables which were shown to have a relationship with health and wellbeing outcomes in the first set of regressions were accounted for. Additional variables thought to have the potential to affect the dependent variables were added individually in order to analyse their effect. These variables are described in detail in section 3.3.4b. As described in section 3.3.7, the regressions for this chapter were carried out with the intention of focussing more on those living alone therefore the regressions were carried out with dichotomous household groups of living alone or not. As with the previous regression analyses (see section 3.3.8), both logistic and linear regressions were used depending on the level of measurement of the outcome variable.

3.5 Phase Two: qualitative interviews

3.5.1 Objectives of Phase Two

The objective of the second phase of the study was to provide complementarity to the quantitative data as described in Section 3.3. The qualitative data provides a richness and depth of data which is unobtainable by quantitative means and allow a better understanding of the overall phenomenon (Morgan, 2007). The objectives were:

- To gain an insight into the experience of living alone as an older woman in the UK today.
- To explore how the experience of living alone may affect aspects of health and wellbeing.
- To consider how health and wellbeing affects the experience of living alone.
- To examine how life course narratives, affect both the decision to live alone, and the resulting experience.
- To explore how engagement in voluntary work or other aspects of community life may affect health and wellbeing.

These answer the third and fourth research questions:

3. What are the experiences of older women living alone in the context of health and wellbeing in the UK?

4. How do life course trajectories affect how women come to experience living alone in later life?

As these two questions focus on different aspects of the lived experience of living alone, two slightly differing analyses were employed. These were Interpretative Phenomenological Analysis and Critical Narrative Analysis. The rationale and operationalisation of these two approaches are described in the following two sub-sections.

3.5.2a Rationale for the use of the two qualitative analyses – Interpretative Phenomenological Analysis (IPA)

The purpose of employing a mixed methods study was, in this instance, to provide complementarity to the quantitative data as detailed in section 3.2. In order to complement the broad scope of the panel survey data analyses, a phenomenological approach was chosen to provide a level of depth and richness to the study. For the question ‘What is it like to live alone as an older woman in the UK?’, an Interpretative Phenomenological Analysis (IPA) was chosen. IPA is an approach which draws on phenomenological philosophy but also employs aspects of hermeneutics which acknowledge the interpretative work done by both the participant and the researcher in sharing a lived experience (Eatough and Smith, 2017; Shinebourne, 2011). In this study the experience under investigation is that of living

alone as an older woman in the UK. IPA originated in the health psychology field but has since been used more widely across health disciplines as a way of better understanding various experiences (Cassidy et al., 2011; Pringle et al., 2011; Shaw, 2011). A fuller history of IPA and its application are available elsewhere (Shinebourne, 2011; Smith et al., 2009).

3.5.2b Rationale for the use of the two qualitative analyses – Critical Narrative Analysis (CNA)

As the fourth research question focusses on life course trajectories, it was not felt that an IPA would be suitable to answer this. As life course approaches focus on events over time, a narrative approach was sought which would enable a consideration of the individual but in a way that moved through a life course. Critical Narrative Analysis (CNA) develops ideas and methods from other phenomenological research approaches, notably IPA, with the inclusion of aspects of narrative analysis and critical theory (Langdridge, 2007). There is encouragement that IPA engages well with other qualitative techniques, and narrative and phenomenological approaches have been used together previously (Eatough and Smith, 2017; Patterson, 2018). The narrative analysis elements enable a consideration of the dialogic aspects of the data. This considers how the narrative might be intended to function as participants respond to perceived or actual

input from the researcher or wider society. This acknowledges the co-construction of a narrative, for example in an interview situation, and can lead to a richer understanding of the experiences described. The 'critical' aspect of CNA refers to the use of a critical hermeneutic: that is, critical theory employed to further interrogate the data for a broader understanding of the phenomenon (Langdridge, 2007). The type of critical theory used depends on the focus of the particular study: critical feminist gerontology has already been used throughout this study to frame thinking and was used here more explicitly during the data analysis. CNA has been used in health disciplines to examine a range of topics where the inclusion of a theoretical lens can help with broadening the understanding and application of the research (Ling and Kasket, 2016; Peter and Polgar, 2020; Stacey et al., 2016).

3.5.3 Recruitment to interviews

Sampling for this phase was purposive to choose women who had the potential to provide insight into the issues being researched, as is common practice for similar studies (Groven and Glenn, 2016; Smith et al., 2009). The results from the statistical analysis indicated that volunteering was a significant predictor of health and wellbeing in older women who lived alone but not those who cohabited. Therefore, the sampling criteria (see Table 3.3) aimed to include women who were involved either in volunteering activities or active in their local community. The definition for this was left for the women to define if

they considered themselves involved in volunteering or not. Those who named their activities as volunteering were referring to structured, formal activities such as volunteering in a hospital shop or fundraising for charity. These varied in terms of level of commitment and time. Other community activities were discussed such as engagement in church activities, but these were not labelled 'volunteering' by the participants. In addition to this, some women engaged in unpaid care work, usually informal arrangements which involved unpaid labour comparable to volunteering but which were considered separate to this. This is reflective of the representation of volunteering and civic engagement more generally in literature (Martinson and Minkler, 2006). The sample was fairly homogenous in terms of age and cultural background as can be seen in Table 6.1 (see chapter six). As with all qualitative research, the aim is not for the results to be representative of an entire population but to provide in depth knowledge of a sub-group of the population (Finlay 2011; Smith et al., 2009). Initially the participants were to be recruited through branches of two national organisations relevant to the older population. Both of these organisations were contacted and had provisionally agreed to involvement in the study. The outbreak of Covid-19 in the UK meant that this recruitment strategy was no longer viable as the organisations reported a shift in focus and priorities. Therefore, social media was used to seek out participants and the project was advertised on a number of platforms.

All potential participants were provided with the information sheet (Appendix 6) and had the opportunity to contact the University or the researcher for additional information prior to participation. None of the participants had additional questions following receipt of the information sheet. Due to the outbreak of Covid-19, the interviews were adapted to ensure the safety of the participants and the researcher. To this end, the participants were advised prior to agreeing to the interview that they would be able to choose between face-to-face, telephone or video-conference interviews. In total seven participants were recruited.

3.5.4 Data gathering

As per Finlay (2011), the term *data collection* is less frequently used in qualitative research due to it being closely aligned with the nature of quantitative research and a more empirical approach. *Data gathering* is felt to be more appropriate for a process which is more reflexive and richer in nature. Therefore, for the purpose of this study, the term *gathering* will be used as a conscious acknowledgement of this difference and as a reflection of the existing literature.

Data for the second part of the study were gathered through in-depth interviews, one interview with each of the seven participants. This number was appropriate as indicated by guidance on the IPA method, previous studies and the scope of the proposed study (Band-

Winterstein and Manchik-Rimon, 2014; Smith and Osborn, 2008). The interviews addressed the topic from a 'sideways' angle to gain a depth of understanding as described by Smith et al. (2009).

The exact focus of the interviews was determined largely by the participants themselves; the interview schedule providing an element of structure and consistency only in the case that the discussion required additional support (See Appendix 10). Some general themes to be included in the interviews were indicated by the results of the statistical work, for example, the dataset did not detail the level of choice surrounding household status and so it was important that this was examined in the qualitative work. Similarly, results from the statistical analysis highlighted the importance of engaging in volunteering and accessing the community but did not indicate the ways in which these helped to contribute to positive health and wellbeing.

The interviews were carried out at a location of the participants' choosing and at a time suitable for them. In most cases this was in their homes, with the exception of one participant who chose to meet using video conferencing technology due to health conditions which meant she was shielding as per government advice during the Covid-19 pandemic.

Written consent was gained at the outset, followed by verbal consent which was recorded prior to the interview. The interviews were audio-recorded on two devices to minimise the loss of data through technical error. A pilot interview was completed; the process and resulting data were reflected on by the author and the project supervisors to ensure quality before carrying out other interviews. As per usual IPA methods, each interview was completed, transcribed and initial analysis begun prior to moving onto the next interview (Smith et al., 2009).

3.5.5 Analysis of qualitative data

The audio data was transcribed by the author; while time-consuming this increases familiarity with the data and time was allotted for this in earlier plans for the study. Increased familiarity with the data reflects the ideographic nature of phenomenological research and for similar reasons, the use of analytical software is not felt to be appropriate in such studies (Wagstaff et al., 2014).

For chapter six, IPA was used. This is an approach which develops descriptive phenomenological approaches by acknowledging the level of hermeneutics involved in exploring the lived experience of others. IPA is rooted in the philosophical traditions of phenomenology, hermeneutics, and ideography (Smith et al., 2009) and has precedence in similar studies (Frazer et al., 2011).

In answer to the fourth research question (reported in chapter seven), a Critical Narrative Analysis was carried out based on Langdrige (2007). It is a development of other phenomenological research approaches in that it consciously seeks to employ the lens of critical theory in order to better interrogate the data and gain a deeper understanding on the phenomenon under investigation. For the purpose of this study, the critical lens used was that of critical feminist gerontology, discussed in sections 3.1 and 2.2.5.

This approach allowed for the inclusion of a life course perspective through narrative analysis and the employment of a critical lens with which to examine the data. Life course perspectives can clarify how later life is shaped and give context to the study of ageing (Bulow and Soderqvist, 2014; Elder, 1994). Phenomenology has been used with a life course perspective which is indicated by previous gerontological literature to support a better understanding of later life phenomena (Band-Winterstein and Manchik-Ramon, 2014; Breen and Hing, 2014; Victor 2005).

Analysis was underpinned by reflective processes and supervision from the research supervisors to ensure rigour. Further discussion of quality assurance methods for this section of the study is given in Section 3.5.6.

The final connecting point of the mixed methods during the study was carried out at the theoretical stage. The final chapter in this thesis draws together the findings from each stage of the study. This synthesis is a critical examination of the findings within the framework of critical feminist gerontology. This provides a structure within which to examine and make sense of the range of data and fits the holistic way health and wellbeing are conceptualised in this study. The data from both phases of the study were synthesised in a thought process contextualised by existing theory and knowledge with the intention of bolstering conclusions and application to policy and practice.

3.5.6 Quality assurance of qualitative data and analysis

Following each of the interviews, the audio recordings were transcribed. Copies of these were offered to the participants for them to check the transcriptions for accuracy of meaning in order to promote quality within the study. As per Smith et al., (2009) one aspect of quality assurance in phenomenological research is the creation of a paper audit trail which can be checked in an 'independent audit' (p183). To this end annotated transcripts, initial notes and development of themes were independently audited by a researcher not involved in the data collection or analysis. This was carried out for both qualitative analyses (IPA and CNA). Transparency of the process and materials supports trustworthiness and confirmability (Levitt et al., 2018). Chapters six and seven which present the findings do so with

robust support from verbatim quotes in order to ensure trustworthiness of results.

3.6 Ethical considerations

The research proposal and a Research Ethics Risk Assessment were submitted to the University of West London's College of Nursing, Midwifery and Healthcare for ethical approval prior to the commencement of the study. A copy of the letter evidencing approval (reference number UWL/REC/CNMH-00495) is in Appendix 11.

3.6.1 Phase One

The data in phase one of the study were obtained from the UK Data Service which holds the data on behalf of UKHLS. Both the UK Data Service and UKHLS have transparent and rigorous guidelines in place to ensure ethical collection and use of data (Knies, 2018). Their processes ensure that all data management is compliant with the General Data Protection Regulation (GDPR) 2018. The University of Essex Ethics Committee has approved all data collection on the Understanding Society main study and innovation panel waves, including asking consent for all data linkages except to health records. Requesting consent for health record linkage was approved at Wave 1 by the National Research Ethics Service (NRES) Oxfordshire REC A (08/H0604/124), at BHPS Wave 18 by the NRES Royal Free Hospital & Medical School (08/H0720/60) and at Wave 4 by NRES

Southampton REC A (11/SC/0274). Approval for the collection of biosocial data by trained nurses in Waves 2 and 3 of the main survey was obtained from the National Research Ethics Service (Understanding Society - UK Household Longitudinal Study: A Biosocial Component, Oxfordshire A REC, Reference: 10/H0604/2).

For the purpose of this study, access was given to data which were already anonymised and encrypted. At no time did the researcher have access to identifying information and no direct contact with participants was made. The main ethical responsibilities for the researcher were around data management. Once access to the data was given, the files were kept on secure devices and the files password protected. All data, the resultant analyses and write-up were kept secure throughout the process.

3.6.2 Phase Two

The second phase required more in-depth ethical consideration as it required direct contact with human participants. The study did not necessitate physical contact or any physical intervention and this minimised the risk of distress or injury to participants. The participants took part in an interview, the topics of which are indicated in the interview schedule in Appendix 9. The interview schedule does not ask intimate details of health conditions and does not require the participant to disclose painful or upsetting information if they do not

wish, however, it was acknowledged that in discussing life course events which lead to living alone or in discussing health and wellbeing generally, participants may discuss topics which could cause some distress.

The steps taken to minimise any distress caused by the study included:

- Information sheet for participants prior to the study.
- Ensuring written, informed consent was gained prior to the study.
- Sampling criteria which ensured suitable participants.
- The preparation of a protocol to be used in the unlikely event of any distress being caused.

3.6.3 Information sheet

This was prepared for women who were potentially interested in the study to read prior to agreeing to participate for them to check if they felt the study was suitable for them. Gatekeepers provided the sheet to participants to read prior to any contact from the researcher in addition to the University's General Data Protection Regulation (GDPR) statement (Appendix 7). If the information was required in a different format (e.g., in the event of low levels of literacy) this was planned for by providing verbal information, but this was not required.

The sheet included an overview of the types of topics covered so that participants were fully informed prior to the interview as to what they would be asked to discuss. The sheet also provided information about confidentiality, data management, and the purpose of the study. It was felt that those who would be unduly distressed by the interview content would be able and likely to deselect themselves from the process at this point. Contact details for the University, the researcher and the supervisors were given in the event of further information being required. See Appendix 6 for a copy of the information sheet.

3.6.4 Consent

Participants were required to explicitly consent to the interviews, audio recording of interviews, analysis of the interview content and distribution of results (See Appendix 8 for copy of Consent Form). If, for any reason, they were unable to give written consent, verbal consent was to be recorded although this was not required. As per the inclusion criteria, the participants were required to be of sufficient cognitive ability to give informed consent: that is, they were able to demonstrate the ability to understand and retain information regarding the study in order to weigh up the information and make an informed decision. Participants were advised of their right to withdraw at any stage of the study with the assurances that this would not result in any negative consequences.

3.6.5 Sampling

As part of the sampling process, inclusion and exclusion criteria of participants was decided upon to minimise risk of distress during the interview process, see Table 3.3 for details.

Table 3.3. Criteria for participants of phase two.

<i>Inclusion criteria</i>	<i>Exclusion criteria</i>
Identified as a woman	Experiencing any disorder of the brain which affects ability to give informed consent to participation
Over 65 years of age	Any person who, upon reading the information sheet, feels that the topics discussed are likely to cause undue emotional distress
Lives alone	Any person unable to complete the interview in English
Able to demonstrate capacity to consent to participation in the study in line with the Mental Capacity Act 2007.	Any person not identifying as woman or under the age of 65
English speaker	
Involved in volunteering on other community activity such as social groups.	

3.6.6 Data management

With regards to the data from the qualitative interviews, all data were kept in a secure location on password protected devices to maintain the privacy and confidentiality of the participants. The audio files contained minimal identifying information where possible. Participants were allocated pseudonyms during the analysis stage in order to preserve anonymity, and it is these names which are used when presenting the data in chapters six and seven. Any subsequent presentation of the work whether in writing or verbal, all reference to participants remained anonymised. This included conference presentations and journal publications.

3.6.7 Protocol for unlikely event of distress to participants

The participants were not subjected to any data gathering methods which would be likely to cause them physical harm. The study collected verbal information only. The participants were not asked any sensitive questions about their health conditions or asked to disclose diagnoses; they were well-informed as to the expected content of the interview prior to agreeing to participate. The interviewer has extensive experience of working with this population in a range of settings in addition to prior experience carrying out qualitative interviews with a sample from this population and was therefore well-equipped to manage any potential distress which may have arisen.

In the unlikely event that a participant should have become distressed during the interview they would have been given the option to terminate the interview. The researcher would have provided reassurance and the space to discuss the issue and next step. Details of local support agencies (such as local mental health services or Age UK) were to be made available if required and, if the safety of the participant or someone else was felt to be at risk, the researcher had planned to seek appropriate assistance from local health services. For the protocol with full details of the plan in the unlikely event of distress, see Appendix 10. During the interview process the protocol was not required.

It should be acknowledged that the participants contributed their time and valuable insights to this project. Given the scope and setting of this research it was not practicable to financially reimburse them for their time. To limit financial inconvenience participants were sought within travelling distance of the researcher's home and the researcher travelled to them. Participants were also offered the opportunity to receive a summary of the outcomes.

3.7 Summary of the chapter

This chapter has described in detail the methods used to answer the research questions identified in chapter two. Rationale has been provided for the paradigm which underpins the study and for the use

and operationalisation of a mixed methods design. Detailed descriptions of the two phases have been set out with explanation of the rationale for decision making at each stage. Finally, an acknowledgement of the ethical issues inherent within the study were discussed and addressed and confirmation of ethical approval given.

Chapter 4

Descriptive analysis and household composition as a predictor of health and wellbeing. Results from analysis from the Understanding Society dataset

This chapter sets out the results from analysis of the quantitative data in answer to research question one:

Is household composition a predictor of health and wellbeing outcomes in older women in the UK?

Statistical analysis was carried out on data taken from Wave 8 of the UK Household Longitudinal Survey (UKHLS). This analysis set out to answer research questions one and two. The chapter starts by detailing the descriptive statistics which describe the trends and patterns of the sample population overall before comparing the three sub-samples determined by household composition. This is followed by an examination of the results of tests of association which highlight some potential relationships between the selected variables. See Section 3.4.4 for full details of the rationale for the choice of variables and their coding.

4.1 Characteristics of sample

Details of the data preparation are in Section 3.4.6. Once trimmed and the weighting applied, characteristics of the sample group were

examined. There were 4,279 women over the age of 65 at the time of the survey. The average age was 74.84 years, ranging from 65-102. About 219 of these were single and never married. 2056 were married, 3 in a civil partnership. 1356 were widowed and 2 were survivors of a civil partnership. 483 were divorced, and one was a former civil partner. 33 were separated from their spouse. 4060 of respondents were White British, 84 were White (Other), 43 were White Irish, 26 were Indian, and 7 African. Other ethnicities numbered at 5 or less. 2496 of the women over 64 reported the presence of a long-term illness or disability and 1774 reported none. The question from which this variable derives is phrased thus: 'Do you have any long-standing physical or mental impairment, illness or disability? By 'long-standing'; I mean anything that has troubled you over a period of at least 12 months or that is likely to trouble you over a period of at least 12 months.' This is open to interpretation to some extent but gives a good indication of overall health and indicates that 41.5% are in good health or are relatively untroubled by health concerns, something which may contradict some perceptions of health in later life.

The above gives an overall description of the sample. The sections that follow describe the variations between groups once the respondents were split into three mutually exclusive groups based on household composition: living alone, living with a partner and living with others. See Section 3.4.2 for details of how these groups were created.

4.2 Tests of association between household composition and demographic variables

4.2.1 Age of participants

As Table 4.1 shows, the women who live alone tend to be older on average ($M 77.57$, $SD 8.04$) than those living with partners or others which is consistent with existing research and is often explained by the longer average life expectancy for women who therefore live alone once widowed. Women who live alone also seem to vary the most in age across the three groups, ranging between 65 and 102 years of age. This is perhaps an indication of the changing social norms and variety of life course trajectories which lead women to live alone, something discussed in more detail in section 7.6. Women who lived with their partners tended to be younger, ranging between 65 and 92 years of age, ($M 72.29$, $SD 5.65$). In order to examine the relationship between age and household composition, a one-way Analysis of Variance (ANOVA) was carried out. As Levene's test was significant, equal variances cannot be assumed, therefore Welch's F was used which indicated a significant association ($F (2, 688.73) = 293.34$, $p \leq .001$) between age and household composition.

Table 4.1. Results of ANOVAs showing demographic variables by household composition.

	Living Alone		Living with partner		Living with other (not partner)		F-test
	Mean	SD	Mean	SD	Mean	SD	
Age – years #	77.57	8.04	72.29	5.65	76.47	8.05	293.34***
Income – GBP per month	1411.79	994.70	976.85	823.31	1374.59	1541.75	108.31***
Log of income #	7.14	0.46	7.85	0.52	7.92	0.49	1177.58***

ANOVA = analysis of variance

Levene's test significant, therefore Welch's f used, as per Field (2018), SD

= Standard deviation, GBP = British pound sterling, *** = p value ≤ 0.001

4.2.2 Net monthly personal income

Table 4.1 shows the relationship between income and household composition. Woman living alone had a higher mean personal income (recorded in pounds sterling) (M 1411.79, SD 994.70) than those living with partners or others (M 976.85 SD 823.31 and M 1374.59, SD 1541.75 respectively). This could be for a variety of reasons. One reason being that spousal incomes are likely to affect women's income such as in the case of pensions when a widow living alone might receive her deceased husband's pension which would have been in his name while alive. It might also show a tendency for those with better financial resources to live alone, although the mean income of those living with others is closer to those living alone than those living with spouses.

An ANOVA showed significant differences ($F(2, 4271) = 108.15, p \leq .001$) between household composition and personal monthly income. Given the outliers present in this variable, the log of the income was computed. For the purposes of later analyses, the log was used in order to reduce the effect of the outliers.

4.2.3 Ethnicity of participants

For the reasons described in Section 3.4.2, a dummy variable was created for ethnicity, dichotomising ethnicity into White and others. The results show little variation in the ethnicity between household composition groups. Of the women who live alone, with spouse and

with others, 98.2%, 98.0% and 95.0% of participants identify as White respectively. The remaining participants identified as one of the groups detailed in Section 3.4.2, indicating women who live alone are slightly more likely to identify as White than those in other households. This proportion of White to non-White is higher than the national average, which is indicated to be 86% White (Office for National Statistics [ONS], 2012), perhaps attributable to the younger average age of non-White immigrants. Issues related to recruitment to the survey are possible but less likely given the Ethnic Boost sampling and weighting applied. Pearson's chi-squared test of association found no association between ethnicity and household composition (see Table 4.2) indicating that women who live alone do not tend to come from a particular ethnic background in this sample. However, this may be due to the small proportion of non-White participants affecting statistical tests. This is acknowledged as a limitation of this study and indicates a need for further research which further examines the role of ethnicity in determining health and wellbeing in later life in the UK.

4.2.4 Marital status

As Table 4.2 shows, the most common marital status of women who live alone in later life is that of widow, followed by separated or divorced. This is also true of those living with others. For the purposes of simplifying later analysis, those who are married, civil partners or co-habiting have been grouped together. Detailed frequencies show that of those living with a partner, 2036 are married, 2 are in civil

partnerships and 124 are co-habiting. A small percentage of those who live alone and with others who are not living with a spouse are married or in a civil partnership, perhaps reflective of those whose spouses are in residential care. A Pearson χ^2 test of association found a significant association between household composition and marital status, as expected (χ^2 (2, N = 4274) = 4189.89, $p \leq .001$).

4.2.5 Location of participants

Two variables indicate aspects of the area in which the participants live. One indicates region; that is, in which country of the United Kingdom they live, and the second indicates a rural or urban area.

As Table 4.2 shows, a higher percentage across all household types live in urban areas, consistent with general population estimates (ONS, 2019). There are, however, slight differences in that a slightly higher proportion of women who live with their spouses tend to live in rural areas. There are no other data with which to compare this. A Pearson χ^2 test indicated that the association between household composition and whether someone lived in an urban or rural area was found to be highly significant (χ^2 (2, N = 4273) = 26.14, $p \leq .001$), indicating that those who live alone are more likely to do so in urban areas than rural.

Table 4.2 shows the frequencies and percentages of household composition in each UK region. There is little variation in the household

composition between countries suggesting a fairly homogenous population across the UK in this respect. The proportion of the sample in each region reflects that of the overall population, as expected given the weighting applied to the data. No significant association was found between regions in the UK and household composition.

4.2.6 Employment

As expected with this age group, by far the most common employment status was retired. Those women living alone were slightly more likely to be retired which is consistent with their higher average age. Some of the sample still worked in paid employment; women who lived with others were nearly twice as likely to work than those living alone despite being of fairly similar average age. The level of association between household composition and employment was found to be significant ($\chi^2 (8, N = 4273) = 40.62, p \leq .001$).

4.2.7 Education

Table 4.2 shows the highest education attainments of the sample as frequencies and percentages of each household composition group. For all groups, a larger proportion of participants are in the highest and lowest groups of 'degree or other' and 'none' respectively, with no formal qualification being by far the most common group which is consistent with the fact that higher education would have been less common for these generations of women than is seen in subsequent generations. A Pearson's χ^2 test indicated education has a strong

association with household composition (χ^2 (8, N = 4262) = 75.61, $p \leq .001$) with those living with partners and those living alone more commonly achieving degree-level or higher education (26% and 23.6% respectively). Given the existing literature indicates higher education is linked with better health outcomes (Fitzroy and Nolan, 2018; Marmot, 2020), this would suggest important implications for this study and educational attainment was therefore acknowledged as a potential confounder for later regressions.

4.2.8 Religion

The religion variable dichotomises whether or not a participant reports having a religion. The results, as a percentage of the household composition group were fairly consistent across the groups: 74.9%, 74.1% and 74.3% for women living alone, with spouse and with others respectively reported yes to having a religion, with the remaining responses reporting 'no'. These numbers suggest little difference between the household compositions but suggest a higher level of religiosity in this sub-sample than the overall population (Field, 2018). No significant association was found between religion and household composition.

4.2.9 Home tenure

Women who live with their spouse were more likely to own their house than other household compositions and therefore much less likely to

rent. Owning outright was by far the most common tenure across all groups which is perhaps to be expected given the age and generation of the sub-sample. Women who lived alone appeared to be least likely to have an outstanding mortgage, perhaps to be expected given their higher average age and the financial difficulty this could pose in a single-person household. A strong association was found between household composition and property tenure ($\chi^2 (8, N = 4229) = 282.10$, $p \leq .001$).

Table 4.2. Results of tests of association between household composition and demographic variables

Demographics			Living Alone		Living with Partner		Living with Other		χ^2	p value
			N	%	N	%	N	%		
Education	Degree or higher		437	23.6	560	26.0	40	15.4	75.61	≤.001
	A-level		131	7.1	205	9.5	19	7.3		
	GCSE		281	15.2	434	20.1	31	12.0		
	Other		319	17.3	340	15.8	46	17.8		
	None		680	36.8	616	28.6	123	47.5		
Tenure	Other		12	0.7	6	0.3	0	0	282.1	≤.001
	Owned outright		1158	62.9	1756	82.5	145	56.0		
	Owned with Mortgage		73	4.0	101	4.7	22	8.5		
	Private rent		115	6.2	77	3.6	20	7.7		
	Social rent		484	26.3	188	8.8	72	27.8		
Region	England		1531	82.7	1845	85.3	216	82.8	4.05	.003
	Wales		109	5.9	105	4.9	12	4.6		
	Scotland		163	8.8	164	7.6	24	9.2		
	NI		49	2.6	48	2.2	9	3.4		
Religion	Yes		1387	74.9	1598	74.1	194	74.3	0.41	.815
	No		464	25.1	560	25.9	67	25.7		
Urban/Rural	Urban		1375	74.2	1448	67.0	192	73.6	26.14	≤.001
	Rural		477	25.8	712	33.0	69	26.4		
Employment status	Paid employment		103	5.6	186	8.6	19	7.3	40.62	≤.001
	Unemployed		12	0.6	13	0.6	5	1.9		
	Retired		1730	93.4	1930	89.3	230	88.5		
	Unpaid		4	0.2	25	1.2	3	1.2		
	Other		3	0.2	7	0.3	3	1.2		
Marital Status	Single/never married		196	10.6	0	0	23	8.8	4183.98	≤.001
	Married/ Civil Partnership/co-habiting		12	0.6	2162	100	12	4.6		
	Divorced or Separated		458	24.7	0	0	59	22.6		
	Widowed		1187	64.1	0	0	167	64.0		
Ethnicity	White		1819	98.2	2118	98.0	248	95.0	11.67	.003
	Other		33	1.8	43	2.0	13	5.0		

GCSE = General Certificate of Secondary Education. NI = Northern Ireland.

4.3 Tests of association between health and wellbeing outcomes and household composition

The results of tests of association between household composition and the various health and wellbeing variables are presented in Table 4.3. For the three continuous variables (GHQ, SF-12 Mental Component and Physical Component scores) ANOVAs were carried out and the resulting F-tests shown. For the categorical variables (presence of long-term health condition, service use, subjective health and life satisfaction) Pearson χ^2 tests of association were carried out. The tests confirm that the variations between household compositions are significantly associated with some but not all health and wellbeing outcomes. What is interesting is that although presented as a vulnerable and at-risk group, and being older on average, those living alone did not score the lowest in these health and wellbeing measures. As expected, those living with their partners scored the highest; consistent with both existing literature (Oh et al., 2015; Chiu, 2019) and their lower average age but it was those who lived with others who consistently scored the lowest. This is in contrast to some previous studies which indicated that living with family members was associated with better health outcomes (Sok and Yun, 2011, Sarkar et al., 2012), but consistent with other studies (Michael et al., 2001; Hughes and Waite, 2002; Weissman and Russell, 2018). The results are discussed in detail in sections 4.3.1 to 4.3.7.

4.3.1 Health service use (visits to GP)

As Table 4.3 indicates, frequency of health service use represented by GP visits is not significantly associated with household composition. This remained the case whether the five-category variable was used or the dichotomised 'High/Low GP Use' variable was used (see Section 3.4.2 for more details about the rationale for these two categorisations). In order to examine effects between the demographic variables and health service use, cross-tabulations using Pearson's chi square test of association were also carried out and indicated that education and tenure were significantly associated with service use (χ^2 (4, N = 4252) = 35.46, $p \leq .001$, χ^2 (4, N = 4215) = 38.88, $p \leq .001$ respectively). These were significant whether the 5-category or dichotomous outcome was used. Religion was shown to be associated with health service use (χ^2 (1, N = 4263) = 4.42, $p = .035$) but this was only with the dichotomous outcome variable. These results suggest that health service use is based on an interaction of factors but does not vary significantly between those living alone and those living with others. This is consistent with some previous studies and indicated that service use should continue to be included in later regressions in order to examine this relationship in more detail (Kharicha et al., 2007).

4.3.2 Long-term conditions (LTC) or disability

Pearson's χ^2 test of association indicated that there is a significant association between household composition and the presence of a long-term health condition or disability (χ^2 (2, N = 4264) = 97.79, $p \leq$

.001). Those living alone, despite being the older group on average, had better health overall than those living with others, this is consistent with previous research which suggests that older women move in with others when they are unable to cope alone but surprising given the vulnerabilities associated with living alone (Pizzetti et al., 2005; Kharicha et al., 2007). Those living with spouses appeared to have less incidence of long-term conditions or disabilities which is consistent with their lower average age and with the existing literature (Bergland and Engedal, 2011; Chiu, 2019).

4.3.3 General health

A Pearson's χ^2 test of association was carried out with self-reported general health which was dichotomised into good/poor (see Section 3.4.2) This showed a highly significant association with household composition (χ^2 (2, N = 4083) = 58.76, $p \leq .001$), with those living with spouses showing the highest level of good health and those living with others, the lowest. This is consistent with the results from the long-term conditions variable. This is also consistent with some existing literature from the USA which indicates that the better health outcomes are experienced in late mid-life by those living with partners, followed by those living alone and then those living with their children (Hughes and Waite, 2002). It contradicts research which has shown women living alone have the highest instances of morbidity than other household compositions (Sarkar et al., 2005); this may highlight differences in cultural and social environments as these studies were

undertaken in the United States and India respectively. It might also indicate that household composition may be associated with different health outcomes as people move through late middle age to later life.

4.3.4 SF-12 Mental Component Score (MCS)

The one-way ANOVA carried out using the mental health component of the SF-12, indicated a significant relationship with household composition (Welch's F value (2, 652.94) = 5.96, p = .003). Those living with their partners reported higher average mental health scores than the other groups, with those living with others scoring the lowest. These are consistent with the scores above for other health outcomes but are surprising given the indication from the literature that those living alone are at higher risk of poorer mental health (Oh et al., 2015). This indicates the importance of the life course trajectory of how household compositions are arrived at in later life; if those living with others have been induced to do so by reduced independence with Activities of Daily Living (ADLs) or financial difficulties then this could explain their poorer outcomes.

4.3.5 SF-12 Physical Component Score

As with the other variables, those living with their partners scored the highest on the SF-12 Physical Health Component followed by those living alone and living with others. ANOVA for this variable indicated a

high level of association between household composition and physical health and functioning (Welch's F value (2,666.33) = 72.70, $p \leq .001$). This is consistent with the other physical health outcome variables. The mean scores for the physical component indicate more variation between the groups than the dichotomous health outcomes or the mental health SF-12 score; an indication of the increased sensitivity of the measure but also highlighting the differences in physical function across the sample. Comparison with other studies is difficult in those which do not differentiate between those who live with a partner and those who live with others (Nilsson et al., 2007; Berland and Engedal, 2011). In those which make this distinction, these results are consistent with those carried out in comparable, Western, cultures such as the United States but contrast those carried out in countries with less similar cultural and social context such as India or Japan (Chiu, 2019; Michael et al., 2001; Sarkar et al., 2012; Saito et al., 2017).

4.3.6 Subjective wellbeing (reversed GHQ score)

The outcome of the ANOVA for subjective wellbeing were consistent with the health outcomes above. This is unsurprising as health is often an important aspect of wellbeing. The reversed GHQ score indicates better subjective wellbeing with a higher score. The results displayed in Table 4.3 indicate that those living with spouse or partner reported higher levels of subjective wellbeing than the other two groups. Those living with others scored the lowest wellbeing with those who live alone

in the middle. The relationship between household composition and subjective wellbeing was indicated to be significant (Welch's F value $(2, 675.18) = 6.18, p = .002$). This seems to support existing literature which showed that living alone was associated with lower subjective wellbeing when compared with those living with partners (Lukaschek et al., 2017).

4.3.7 Life satisfaction

The Pearson's Chi Square test of association for the life satisfaction variable was carried out on the original seven-category variable (see Table 4.3) in order to examine it in detail. The results in the table indicate that the percentages of those living with their partner tended to be higher in the more satisfied categories, with 47.9% reporting they were 'Mostly Satisfied' and 23.3% reporting they were 'Completely Satisfied'. This contrasts with those living with others at the lower end of the scale who reported 37.7% and 12.1% respectively. As with the other outcome variables, those living alone scored between the other two household composition groups: 45.6% and 19.7% respectively. The test of association results indicated a strong association between household composition and life satisfaction ($\chi^2 (73.93, p \leq .001)$) and consistent with the other measures the population of those living alone appear to be less satisfied than those living with partners but more satisfied than those living with others.

Table 4.3: Tests of association between household composition and health and wellbeing variables.

		Living Alone		Living with spouse		Living other spouse)		with (not	χ^2	p value
		N	%	N	%	N	%			
Visits to GP	None	253	13.7	310	14.4	34	13.1	12.94	.114	
	One-Two	634	34.4	805	37.3	76	29.2			
	Three-Five	559	30.3	601	27.6	84	32.4			
	Six-Ten	224	12.2	262	12.1	41	15.8			
	More than ten	172	9.3	179	8.3	25	9.6			
Long-term illness	Yes	1190	64.3	1110	51.5	193	74.8	97.79	≤.001	
	No	660	35.7	1046	48.5	65	25.2			
General Health	Good	1091	62.8	1501	71.5	128	51.8	58.76	≤.001	
	Bad	647	37.2	597	28.5	119	48.2			
SF-12 MCS	Mean/SD; F-test #.	50.89	10.04	51.44	9.24	49.03	11.06	5.96	.003	
SF-12 PCS	Mean/SD; F-test #.	39.37	13.49	43.96	12.37	37.40	13.20	72.70	≤.001	
GHQ Score (reversed)	Mean/SD; F-test #.	24.96	5.20	25.31	4.77	24.23	5.19	6.18	.002	
Life Satisfaction	Completely dissatisfied	29	1.7	43	2.0	14	5.7	73.93	≤.001	
	Mostly dissatisfied	69	4.0	70	3.3	16	6.5			
	Somewhat dissatisfied	104	6.0	91	4.3	24	9.7			
	Neither sat nor diss	140	8.1	162	7.7	28	11.3			
	Somewhat satisfied	261	15.0	239	11.4	42	17.0			
	Mostly satisfied	791	45.6	1005	47.9	93	37.7			
	Completely satisfied	341	19.7	490	23.3	30	12.1			

Pearson's χ^2 shown unless otherwise noted.

GHQ = General Health Questionnaire. See Section 3.4.2 for more details.

SF-12 = Short Form 12. See Section 3.4.2 for details.

Levene's test significant, therefore Welch's F used, as per Field (2018).

4.4 Regressions of household composition on health and wellbeing outcome variables.

Regression analysis was carried out in order to examine the relationships between the independent and the outcome variables. The type of regression carried out was dependent on the outcome variables. Linear regressions were used for the three ratio or scale outcome variables (SF-12 PCS, SF-12 MCS and GHQ) and logistic regressions for the remaining four nominal or categorical outcomes (GP use, presence of a long-term condition, self-rated health and life satisfaction). The independent variables were entered into the regressions in stages for this part of the analysis. As per Field, (2018, p398) a hierarchical regression was used whereby the most important variables, based on previous empirical evidence, are entered first. Any new predictors are added in the order of suspected importance first, again based on existing evidence. The tables in this chapter show only the final models in which all the variables are included: the earlier models which shows the building of the final model are shown in the appendices.

4.4.1 Presence of a long-term condition or disability

Binomial logistic regressions were carried out on the dichotomous health outcome of presence of a long-term condition or disability (yes/no). The results of the final model of this regression are displayed in Table 4.4. Full results are in Appendix 12. The results indicate that

living alone remained a significant predictor of the presence of a long-term health condition or disability when compared to the reference group. This remained the case with the addition of age, income and education to the model (β (0.692, 0.961) = 0.816, $p \leq .005$). Living alone as a household composition was no longer significant with the addition of tenancy status to the model. Living with others remained significant with the additions of age, income, education and tenancy status (β (0.335, 0.616) = 0.454, $p \leq .001$) but became non-significant with the addition of marital status. As expected, age and income remained consistently significant throughout the model which supports existing research (Marmot et al., 2010). Employment status was also significant which is likely related to the increased likelihood of people with poor health not being in work. Home tenure, represented by five categories in this regression, was not shown to be significantly related to the presence of a long-term health condition, neither was ethnicity, or region of living. The overall model remained significant throughout (β (2) = 290.131, $p \leq .001$).

Table 4.4: Logistic regression results predicting presence of a long-term condition or disability.

<i>Factors</i>	<i>Odds Ratio (Confidence Intervals)</i>
Constant	0.766
Women living alone (reference is those living with partners)	1.659 (0.661, 4.156)
Women living with others	0.825 (0.332, 2.051)
Age 75-84 (reference is 65-74)	0.703 (0.605, 0.816) ***
Age 85 +	0.547 (0.433, 0.688) ***
Income (log)	1.209 (1.049, 1.393) **
Education A Level or equivalent (reference is degree level)	0.939 (0.729, 1.210)
Education GCSE or equivalent	1.047 (0.857, 1.279)
Education 'Other'	0.820 (0.664, 1.011)
Education 'None'	0.834 (0.690, 1.008)
Tenure: Own Home (reference is 'other')	0.656 (0.253, 1.704)
Tenure: Mortgaged	0.586 (0.217, 1.602)
Tenure: Social Rent	0.408 (0.155, 1.073)
Tenure: Private Rent	0.573 (0.212, 1.547)
Single/Never Married (reference is married)	0.616 (0.240, 1.582)
Divorced or separated	0.485 (0.193, 1.219)
Widowed	0.518 (0.203, 1.288)
Wales (reference is England)	0.847 (0.634, 1.131)
Scotland	1.088 (0.862, 1.374)
NI	1.311 (0.866, 1.983)
Employment: Unemployed (reference is in paid work)	0.121 (0.040, 0.370)
Retired	0.502 (0.389, 0.650) ***
Unpaid work	0.413 (0.188, 0.904) ***
Other employment	1.649 (0.448, 6.075) **
Ethnicity	1.155 (0.727, 1.835)
Rural	1.047 (0.908, 1.207)
N	4271
X ² (block)	0.724
X ² (model) all ***	290.131
Cox and Snell R ²	.067
Nagelkerke R ²	.090

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$

GCSE = General Certificate of Education, NI = Northern Ireland

4.4.2 Health service use (visits to GP)

Using the dichotomised outcome variable, 'High/Low GP Visits', binary logistic regressions were run for household status and other demographic variables on health service use. The results are summarised in Table 4.5. Full results are in Appendix 13. Household composition was not found to be a significant predictor of health service use. Age was found to be significant in the 75-84 age group (reference group 65-74; β (1.093, 1.523) = 1.290, p = .003) but, surprisingly, not for the older group 85+. This indicated that those in the middle age group were up to 29% more likely to have visited their GP with high frequency in the last 12 months than those in the younger bracket. This remained significant with the addition of both income and education into the model but was no longer significant once employment status was added. This is surprising in that the older group are not indicated to have used their GP at a higher level than those in the younger groups given the increasing morbidity associated with age; this is despite the variable covering any GP contact including telephone and home visit appointments.

Income was only found to be significant when included in the model with household composition and age: with the addition of education, it was no longer significant (β (0.682, 0.934) = 0.798, p = .005) suggesting that education moderated the effect of income on tendency to use health services. Education was found to be a significant indicator of health service use. When compared to those who held

degree-level education, those who responded 'none' were up to 52% more likely to have high health service use (β (1.226, 1.887) = 1.521, $p \leq .001$). This remained significant in the final model (β (1.054, 1.657) = 1.322, $p = .016$).

Employment status was one of the most significant predictors of health service use, perhaps reflecting the better health of those able to work. Both those who were retired and those who responded 'unemployed' were more likely than those in paid employment to use health services. In the final model, those who were retired were twice as likely to report high health service use and for those who were unemployed this rose to four and a half times as likely as can be seen in Table 4.5 (β (1.379, 2.993) = 2.031, $p \leq .001$, β (2.000, 10.284) = 4.535, $p \leq .001$ respectively). Interestingly, this was significant even when the effects of age and education were included in the model, perhaps indicating positive health benefits of work (Jahoda, 1982; Unruh, 2004) but a reverse causality cannot be excluded: that people who are in work do so because they are in better health and therefore do not require health service use with such frequency.

Tenancy of home property was another significant variable in this regression. Those who owned their homes outright were the reference group. Those who rented, either social rent (local council or housing association) or private rent were consistently more likely to report higher use of their GP in the twelve months prior to the survey. This

remained the case in the final model where those who rented from either the council or a housing association were 47% more likely to report high health service use and those who rented privately 72% more likely (β (1.200, 1.804) = 1.471, $p \leq .001$, β (1.251, 2.367) = 1.721, $p .001$ respectively). As home ownership tends to reflect better socio-economic status throughout the life course, this may explain the variation in health service use even when controlling for monthly income at the time of the survey.

There was a slight variation in UK regions using health services: those in Wales were up to 46% more likely than those in England to report high use of their GP and this remained the case in the final model (β (1.070, 1.997) = 1.462, $p = .017$). Marital status, ethnicity and urban location were all indicated to have no effect on health service use as represented by GP visits.

Table 4.5: Logistic regression results predicting high or low service use as represented by GP visits in the last 12 months.

<i>Factors</i>	<i>Odds Ratio (Confidence Intervals)</i>
Constant	0.178*
Women living alone (reference is those living with partners)	0.277 (0.055, 1.397)
Women Living with others	0.344 (0.069, 1.721)
Age 75-84 (reference is 65-74)	1.185 (0.996, 1.410)
Age 85 +	1.130 (0.875, 1.459)
Income (log)	0.929 (0.782, 1.102)
Education A Level or equivalent (reference is degree level)	0.959 (0.691, 1.330)
Education GCSE or equivalent	1.029 (0.798, 1.328)
Education 'Other'	1.236 (0.960, 1.593)
Education 'None'	1.322 (1.054, 1.657) *
Employment: Unemployed (reference is in paid work)	4.535 (2.000, 10.284) ***
Retired	2.031 (1.379, 2.993) ***
Unpaid work	1.877 (0.718, 4.910)
Other employment	2.939 (0.767, 11.255)
Tenure: mortgaged (reference is own outright)	1.327 (0.922, 1.909)
Social rent	1.471 (1.200, 1.804) ***
Private Rent	1.721 (1.251, 2.367) ***
Other	1.337 (0.442, 4.042)
Marital Status: Single (reference is married)	3.255 (0.633, 16.740)
Divorced or separated	3.088 (0.612, 15.592)
Widowed	3.054 (0.610, 15.294)
Wales (reference is England)	1.462 (1.070, 1.997) *
Scotland	1.125 (0.856, 1.478)
NI	1.401 (0.889, 2.207)
Ethnicity (reference group is White)	1.220 (0.726, 2.050)
Urban/Rural area (reference is urban)	0.950 (0.801, 1.127)
N	4267
X ² (block)	0.953
X ² (model)	96.516***
Cox and Snell R ²	0.023
Nagelkerke R ²	0.035

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$

GCSE = General Certificate of Education, NI = Northern Ireland

4.4.3 Subjective health

The final model of regressions of the independent variables on the dichotomised variable subjective health are shown in Table 4.6. Full results are in Appendix 14. The outcome variable was dichotomised into good/poor health, the rationale for this is detailed in Section 3.4.2. Household composition was found to be significant in predicting whether respondents reported good or poor health, although this became non-significant with the inclusion of other variables into the model. Those who lived alone were found to have significantly less likelihood of reporting good health even when controlling for age (β (0.650, 0.869) = 0.752, $p \leq .001$), however, this no longer held significance once income was included in the model, which could suggest that a higher level of SES could moderate the effect of any negative influence of lone dwelling. Those who lived with others were less likely than either of the other household composition groups to report good health and this held with the inclusion of age, income, education, employment, and housing tenure (β (0.448, 0.798) = 0.598, $p \leq .001$).

This indicates that for this population, living with others is far more likely to be associated with poorer health; this is not unusual when compared to some previous research carried out in comparable populations such as the United States (Michael et al., 2001; Chiu, 2019; Weissman and Russell, 2018). As with these studies, there may be an element of reverse causation in that in Western societies older

adults may be more inclined to move in with other family members once they struggle to manage alone, possibly after being widowed. Studies in countries in which cohabitation with extended family is considered usual, indicate those who live with others demonstrated better health, contrary to this study (Sarkar et al., 2012; Saito et al., 2017).

As with other health outcome variables, age, income and education were found to be significant in the final model (β (0.497, 0.796) = 0.629, $p \leq .001$, β (1.011, 1.387) = 1.189, $p = .036$, β (0.478, 0.725) = 0.589, $p \leq .001$ respectively). This indicates that poorer health is associated with increased age, lower income and higher levels of education. Interestingly, as this is self-rated health, those in the middle age category (75-84) were more likely to report poor health than those in the 85+ category. This is perhaps attributable to the subjective nature of the question in that those in later life may consider their health good compared with peers. It may also indicate that those who reach later life are more likely to do so because of better health. Those who reported being retired or unemployed were less likely to report good health than those in paid employment (β (0.251, 0.523) = 0.362, $p \leq .001$, β (0.036, 0.237) = 0.092, $p \leq .001$ respectively). This remained significant in the final model. Interestingly, those in unpaid employment such as in a family business or perhaps as an unpaid carer were significantly more likely to report poor health than those in paid employment (β (0.075, 0.432) = 0.180, $p \leq .001$). This could

perhaps reflect that those in poorer health are less likely to engage in paid employment or are more likely to maintain unpaid care work despite poor health due to a sense of responsibility. It may also reflect the role that paid employment plays in maintaining a sense of wellness in terms of societal values and norms (Jahoda, 1982; Waddell and Burton, 2006).

As with previous outcome variables, housing tenure remained significant in the final model, with both rental categories being less likely to report good health than those who own their own property (social rent: β (0.338, 0.492) = 0.408, $p \leq .001$, private rent: β (0.337, 0.615) = 0.455, $p \leq .001$). This remained the case despite controlling for monthly income, education and age all of which are known to contribute to health outcomes. This perhaps reflects that home ownership tends to be associated with better income across the life course which may moderate the effect of other factors in influencing health in later life. In terms of UK regions, those in Wales were significantly less likely to report good health than those in England (β (0.512, 0.946) = 0.696, $p = 0.21$) and those in rural areas were more likely than those in urban to report good health (β (1.117, 1.534) = 1.309, $p .001$).

Table 4.6: Logistic regression results predicting likelihood of good/poor subjective health.

<i>Factors</i>	<i>OR (CI)</i>
Constant	2.901
Women living alone (reference is those living with partners)	1.163 (0.436, 3.105)
Women Living with others	0.675 (0.256, 1.780)
Age 75-84 (reference is 65-74)	0.721 (0.614, 0.846) ***
Age 85 +	0.629 (0.497, 0.796) ***
Income (log)	1.184 (1.011, 1.387) *
Education A Level or equivalent (reference is degree level)	0.710 (0.533, 0.945) *
Education GCSE or equivalent	0.794 (0.630, 1.000) *
Education 'Other'	0.741 (0.586, 0.938) *
Education 'None'	0.589 (0.478, 0.725) ***
Employment: Unemployed (reference is in paid work)	0.092 (0.036, 0.237) ***
Retired	0.362 (0.251, 0.523) ***
Unpaid work	0.180 (0.075, 0.432) ***
Other employment	0.607 (0.130, 2.826)
Tenure: mortgaged (reference is own outright)	0.713 (0.505, 1.005)
Social rent	0.408 (0.338, 0.492) ***
Private Rent	0.455 (0.337, 0.615) ***
Other	1.875 (0.571, 6.160)
Marital Status: Single (reference is married)	0.679 (0.248, 1.859)
Divorced or separated	0.859 (0.322, 2.294)
Widowed	0.959 (0.363, 2.535)
Wales (reference is England)	0.696 (0.512, 0.946) *
Scotland	0.886 (0.690, 1.138)
NI	0.716 (0.450, 1.139)
Ethnicity (reference group is White)	0.981 (0.576, 1.669)
Urban/Rural area (reference is urban)	1.309 (1.117, 1.534) ***
N	4052
X ² (block)	11.311 **
X ² (model)	393.802 ***
Cox and Snell R ²	.093
Nagelkerke R ²	.130

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$

GCSE = General Certificate of Education, NI = Northern Ireland

OR = Odds ratio, CI = Confidence interval

4.4.4 SF12 – Mental Component Score

Final model results of the multiple hierarchical regression of the SF-12 mental component score (SF-12 PCS) are displayed in Table 4.7. See Appendix 15 for full results. In the first model, only living with others was a significant predictor of poorer mental health when compared with those living with a partner (β (-3.478, -1.164) = -0.060, $p \leq .001$) this remained the case in the final model when other variables were accounted for (β (-8.445, -0.212) = -0.106, $p = .039$). Living alone was not an indication of poorer mental health when compared with the reference group in any of the models. This is particularly interesting given some literature which links living alone with loneliness or social isolation and serves to highlight the difference between the different concepts (Perissinotto and Covinsky, 2014). While loneliness could be linked with poorer mental health, these results indicate the importance of considering the more detailed nuances of social contact such as satisfaction or reciprocity than objective measures of social contact. This echoes the findings of some more recent studies which highlight the importance of the subjective nature of social contact (Hank and Wagner, 2013).

Age was not a significant predictor of mental health which contrasts with the physical health results. Although increasing age predicted poorer physical health, this was not reflected in mental health, indicating different influences for each facet of health. This may also reflect an adjustment in expectations of health in later life, as with other

age groups poorer physical health is often linked with poorer mental health (Mercer et al., 2012; Naylor et al., 2012). Income was found to be a significant predictor of mental health even when controlling for the effects of household composition, education and employment (β (0.68, 1.383) = 0.045, $p = .031$). Monthly income was no longer significant with the addition of homeownership into the model, perhaps indicating the importance of considering different aspects of socio-economic status on different aspects of health. As with the other health outcomes, education remained significant throughout (final model: β (0.096, 1.577) = 0.037, $p = .027$). Residing in a rural area was predictive of better mental health than urban areas which is consistent with literature exploring the role of green spaces in positive mental health (Purtle et al., 2019) but contradicts research which points to the potential isolation experienced by those in rural areas (Hagen Hennessy and Means, 2014). Residing in Scotland was a predictor of better mental health when compared with the reference group, England, in the final model (β (0.357, 2.539) = 0.041, $p = .009$) which contrasts with the SF-12 PCS and indicates both variations in influences on physical or mental health and variations between UK countries.

Marital status was not found to be significant in predicting mental health, which is surprising given both the literature which indicates those who are married exhibit better health outcomes but also that which points to the mental health impact of widowhood.

Table 4.7: Linear regressions predicting SF-12 Mental Component Score (MCS).

<i>Factors</i>	<i>Standardised coefficient (β)</i>	<i>Standard Error</i>	<i>t-value</i>
Women living alone (reference is those living with partners)	-0.114	2.124	-1.054
Women Living with others	-0.106*	2.100	-2.061
Age 75-84 (reference is 65-74)	0.014	0.356	0.808
Age 85 +	-0.012	0.537	-0.681
Income (log)	0.029	0.336	1.363
Higher Education	0.037*	0.378	2.215
Employed	0.038*	0.576	2.357
Homeowner	0.108***	0.380	6.536
Single/Never Married (reference is married)	0.058	2.190	1.196
Divorced or separated	0.063	2.127	0.879
Widowed	0.142	2.104	1.415
Wales (reference is England)	-0.011	0.698	-0.713
Scotland	0.041**	0.557	2.602
NI	-0.011	1.049	-0.674
Rural (reference is Urban)	0.055**	0.338	3.474
Ethnicity (reference is White)	-0.001	1.131	-0.060
N	3992	3992	
Adjusted R Squared	.025	.025	

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$, NI = Northern Ireland

4.4.5 SF12 – Physical Component Score

The final model results of the multiple hierarchical regression of the SF-12 physical component score (SF-12 PCS) are displayed in Table 4.8. The full results are in Appendix 16. As detailed in Section 3.4.2, a higher score of a maximum of 36 indicates better physical health and independent function. Household composition was found to be significant in predicting physical health with the inclusion of age, education, income, and home ownership included in the model. Women living alone and women living with others who are not their partners were more likely to score lower on the SF-12 PCS than those living with their partners (β (-2.579, -0.555) = -0.59, $p = .002$, β (-5.270, -1.951) = -0.066, $p \leq .001$, respectively, with those living with partners as the reference group). Household composition became non-significant with the addition of marital status to the model. As with the regressions described in sections 4.4.1-3, age, education, employment and being a homeowner were all found to be significant in predicting a higher level of physical function as represented by the SF-12 physical component score. Increased age was found to be predictive of poorer health (β (-9.918, -7.236) = -0.211, $p \leq .001$), while a higher level of education was predictive of better physical health (β (1.577, 3.464) = 0.083, $p \leq .001$). Both being in employment and being a homeowner were predictive of a higher SF-12 PCS (β (2.778, 5.654) = 0.088, $p \leq .001$ and β (4.589, 6.490) = 0.177, $p \leq .001$ respectively). These remained significant in the final model and the findings are consistent with many studies which have examined determinants of

health in later life (Marmot et al., 2010; World Health Organisation, 2015). Interestingly, in the final model, residing in Northern Ireland (NI) also remained a significant predictor, with those in NI being less likely than the other UK regions to score well on the SF-12 PCS (β (-5.578, -0.338) = -0.033, p = .027). There were no previous studies found in the literature search detailed in chapter two which indicated this variation between NI and the other UK countries but it could be attributed to variations in life course experiences between the countries or to the differences in health care provision which, despite all being considered part of the National Health Service, have fundamental differences in commissioning and delivery (Timmins, 2013). There are studies indicating differences between the UK countries, but NI tends to score lower on mental than physical health, in contrast to the results here (Steel et al., 2018).

Table 4.8: Linear regression results predicting SF-12 Physical Component Score.

<i>Factors</i>	<i>Standardised coefficient (β)</i>	<i>Standard Error</i>	<i>t-value</i>
Women living alone (reference is those living with partners)	0.072	2.706	0.702
Women living with others	-0.005	2.675	-0.100
Age 75-84 (reference is 65- 74)	-0.0134	0.454	-8.382
Age 85 +	-0.211	0.684	-12.539
Income (log)	-0.013	0.428	-0.676
Higher education (reference is school-level or below)	0.083***	0.481	5.237
Employed	0.088***	0.733	5.748
Homeowner	0.177***	0.485	11.429
Single/Never Married (reference is married)	-0.066	2.791	-1.436
Divorced or separated	-0.087	2.710	-1.288
Widowed	-0.115	2.680	-1.219
Wales (reference is England)	-0.022	0.889	-1.492
Scotland	-0.012	0.709	-0.801
NI	-0.033*	1.336	-2.213
Ethnicity	-0.010	1.441	-0.671
Rural	0.026	0.430	1.749
N		3992	
Adjusted R Squared		.135	

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$

NI = Northern Ireland

4.4.6 Subjective wellbeing (reversed GHQ score)

The hierarchical multiple linear regression to test for an influence of household composition on GHQ score is summarised in Table 4.9. Full results are in Appendix 17. In order to confirm that the assumptions of linearity and homogeneity are tenable a scatterplot of standardised residuals against standardised predicted values was carried out. A histogram of standardised residuals confirmed normal distribution as required by the regression. The analysis showed a small but significant association of GHQ with household composition. This was reduced when covariates were added into the analysis. The effect of living alone, initially significant (β (-.706, -.070) = - 0.39, p = .017) became non-significant once age and income were added into the model. Living with others (β (-1.780, -0.467) = - 0.054, p = .001) remained significant with the addition of age (β (-1.738, -0.415) = - 0.052, p = .001), income (β = -1.10, p = .001), marital status, (β = -2.19, p = .045) region (β = -2.26, p = .038) and employment (β = -2.31, p = .034). The effect of living with others was attenuated with the addition to the model of home ownership and level of education and was no longer significant. The final model accounted for 2% of the variance in subjective wellbeing as represented by the reversed GHQ score.

Table 4.9: Linear regression results predicting reversed GHQ Score (subjective wellbeing).

<i>Factors</i>	<i>Standardised coefficient (β)</i>	<i>(Standard Error)</i>	<i>t-value</i>
Women living alone (reference is those living with partners)	-0.100	1.054	-0.951
Women Living with others	-0.080	1.046	-1.583
Age 75-84 (reference is 65-74)	-0.015	0.182	-0.879
Age 85 +	-0.022	0.276	-1.236
Income (log)	-0.012	0.171	-0.572
Single/Never Married (reference is married)	0.055	1.091	1.167
Divorced or separated	0.016	1.058	0.230
Widowed	0.106	1.045	1.090
Wales (reference is England)	-0.010	0.359	-0.617
Scotland	0.039*	0.283	2.495
NI	0.000	0.536	0.006
Employed	0.051**	0.294	3.167
Homeowner	0.107***	0.195	6.532
Higher Education	0.014	0.193	0.850
Ethnicity	0.019	0.576	1.236
Rural	0.011	0.173	0.724
N		4021	
Adjusted R Squared		.020	

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$

NI = Northern Ireland

4.4.7 Life satisfaction

The final model results from the multinomial regressions carried out on the life satisfaction variable are presented in Table 4.10. See Appendix 18 for the full results. The results present 'Completely Satisfied' as the reference category. Due to unexpected singularities in the Hessian matrix on the initial SPSS output, some categories were merged in order to improve the reliability of the model. Dichotomised housing tenure, education and employment were used. Unsurprisingly the most significant findings were between those who responded 'Not Satisfied' and those in the reference category which are the two categories at either end of the scale. Those who were divorced or separated were shown to be significantly more likely to be not satisfied (β (1.133, 2.301) = 1.615, $p = .008$) than those of any other marital status. Home ownership was shown to be highly significant between the highest and lowest categories of life satisfaction (β (1.214, 1.954) = 1.540, $p \leq .001$) indicating those who own their own homes are more likely to report higher levels of life satisfaction. Those not in employment were less likely to report being 'Completely Satisfied' (β (0.420, 0.953) = 0.632, $p = .028$); perhaps due to financial restrictions imposed by being out of work or because retirement or unemployment are often consistent with an advanced age and co-morbidities. It could also be hypothesised that those in work have purpose, identity and social contact linked with employment which have been linked with wellbeing (Jahoda, 1982). Finally, those in urban areas were significantly more likely to be 'Not Satisfied' than 'Completely Satisfied'

(β (1.018, 1.592) = 1.273, p = .034). The comparisons between the categories 'Somewhat Satisfied,' 'Mostly Satisfied' and the reference group still indicate some significant findings. Between 'Somewhat' and 'Completely Satisfied,' being married was significant in that those who are married or in a civil partnership were more likely to report being 'Completely Satisfied' (β (0.532, 0.951) = 0.711, p = .021). Employment was consistently a significant factor in all levels of the regression, with those not in employment less likely to report 'Completely Satisfied' than any other category (β (0.351, 0.838) = 0.543, p = .006 for 'Somewhat Satisfied' and β (0.428, 0.851) = 0.604, p = .004 for 'Mostly Satisfied'). Finally, ethnicity was only indicated as significant in the difference between Mostly and Completely Satisfied, suggesting those who identify as White were more likely to report being 'Mostly Satisfied' than 'Completely Satisfied' (β (1.146, 3.570) = 2.023, p = .015).

Table 4.10: Logistic regression results predicting life satisfaction.

<i>Life Satisfaction</i> (reference is completely satisfied)		<i>P value</i>	<i>Odds Ratio</i> (Confidence Interval)
Not Satisfied	Intercept	0.716	
	Log Income	0.480	0.929 (0.758, 1.139)
	Age Category 65-74 (ref 85+)	0.440	0.872 (0.617, 1.234)
	Age Category 75-84	0.389	0.859 (0.609, 1.213)
	Education: School Level or below (ref degree level)	0.691	1.052 (0.820, 1.348)
	Married/Civil Partner (ref is widowed)	0.451	0.903 (0.692, 1.178)
	Single/Never Married	0.158	1.407 (0.876, 2.259)
	Divorced/Separated	0.008	1.615 (1.133, 2.301) **
	Do not own home (ref homeowner)	> 0.001	1.540 (1.214, 1.954) ***
	Not in employment (ref employed)	0.028	0.632 (0.420, 0.953) *
	England (ref NI)	0.327	0.685 (0.321, 1.461)
	Wales	0.375	0.677 (0.285, 1.604)
	Scotland	0.202	0.586 (0.258, 1.333)
	White (ref non-white)	0.052	2.023 (0.992, 4.124)
	Urban (ref rural)	0.034	1.273 (1.018, 1.592) *
Somewhat Satisfied	Intercept	0.358	
	Log Income	0.854	0.979 (0.784, 1.223)
	Age Category 65-74 (ref 85+)	0.196	0.782 (0.539, 1.135)
	Age Category 75-84	0.148	0.761 (0.526, 1.101)
	Education: School Level or below (ref degree level)	0.117	1.252 (0.945, 1.658)
	Married/Civil Partner (ref is widowed)	0.021	0.711 (0.532, 0.951) *
	Single/Never Married	0.563	0.847 (0.482, 1.488)
	Divorced/Separated	0.101	1.381 (0.939, 2.031)
	Do not own home (ref homeowner)	0.196	1.192 (0.913, 1.556)
	Not in employment (ref employed)	0.006	0.543 (0.351, 0.838) **
	England (ref NI)	0.064	0.486 (0.226, 1.044)
	Wales	0.198	0.561 (0.232, 1.353)
	Scotland	0.055	0.439 (0.189, 1.019)
	White (ref non-white)	0.890	1.049 (0.531, 2.074)
	Urban (ref rural)	0.220	1.166 (0.912, 1.490)
Mostly Satisfied	Intercept	0.363	
	Log Income	0.409	1.072 (0.908, 1.266)
	Age Category 65-74 (ref 85+)	0.775	0.958 (0.713, 1.288)
	Age Category 75-84	0.706	0.945 (0.705, 1.268)
	Education: School Level or below (ref degree level)	0.100	0.846 (0.693, 1.032)
	Married/Civil Partner (ref is widowed)	0.179	0.860 (0.691, 1.071)
	Single/Never Married	0.577	1.126 (0.743, 1.707)
	Divorced/Separated	0.145	1.264 (0.922, 1.732)
	Do not own home (ref homeowner)	0.603	0.945 (0.765, 1.168)
	Not in employment (ref employed)	0.004	0.604 (0.428, 0.851) **
	England (ref NI)	0.191	0.650 (0.341, 1.240)
	Wales	0.131	0.568 (0.273, 1.183)
	Scotland	0.131	0.585 (0.292, 1.173)
	White (ref non-white)	0.015	2.023 (1.146, 3.570) *
	Urban (ref rural)	0.575	0.950 (0.794, 1.136)

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$, NI = Northern Ireland

4.5 Discussion of findings

4.5.1 Confirmation of known determinants of health and wellbeing

The results presented above were consistent with existing evidence in confirming the importance of demographic and socio-economic factors in determining health and wellbeing outcomes (Marmot, 2020; Sacker et al., 2017). Namely: age, income, home ownership and education were all found to be predictors of health and wellbeing in later life to varying degrees. These findings therefore indicate the reliability of the analysis and the more novel findings.

4.5.2 Variations between household composition groups

The tests of association confirmed significant differences between the health and wellbeing outcomes of the different household composition groups. With the exception of service use as represented by GP visits, the health and wellbeing outcomes were better for those living with their partners followed by those living alone and with those living with others having the poorest health and wellbeing as represented by the selected variables. The findings that those living with partners have the better health and wellbeing outcomes was unsurprising: not only did they have a lower average age but also the literature has consistently indicated similar results (Bergland and Engedal, 2011; Gaymu et al., 2012; Lukashek et al., 2017). Given the literature which points to the vulnerability of those who live alone (Kharicha et al., 2007) it is surprising to find that those who live with others scored lower, as it was expected that those living alone would be more likely

to experience poorer health and wellbeing. One explanation for this could be that those living alone are more likely to do so because they are in better health and can therefore manage to live alone and in living alone. Living alone also results in individuals taking on the main role in activities such as housework or home finances which may, in turn, contribute to maintaining good health. The converse of this is that those who are living with others may have poorer health and wellbeing which has led to them living with other family members, or that in living with others they may relinquish a level of activity which has led to a level of deconditioning. These outcomes may also reflect the values of individualism and independence which are often present in Western culture; that people tend to remain independent where possible and when this independence is compromised their wellbeing is similarly at risk. This last point is further supported when considering the findings in the context of existing studies. A small number of studies compared the three household types and are therefore comparable to some extent with this study. Of those, it is studies carried out in Western countries which correspond to the findings here: that those who are partnered experience the better health outcomes while those who live with others who are not their partners scored lower (Michael et al., 2001; Hughes and Waite, 2002). Those studies which compared three groups and showed those living alone to be at the highest risk of poorer health outcomes, were those studies carried out in India and Japan: countries which tend to value a more collective and less individualistic lifestyle (Sok and Yun, 2011; Sarkar et al., 2012). This

would point to the importance of social and cultural norms and values, something which has been shown to affect the experience of later life even between European countries (De Jong Gierveld and Van Tilburg, 1999).

This indicates further research is required to examine in detail the health and wellbeing of those living with extended families in the UK, in order to reduce these variations in health outcomes. Those who live alone fared better overall: further examination of the determinants of health for this group is carried out in the next chapter.

4.5.3 Role of household composition in predicting health outcomes

While these differences between the household compositions were found to be significant, the regressions indicated that household composition was not a predictor of health and wellbeing outcomes in itself. With one exception, none of the final models found household composition to be a significant predictor of health and wellbeing, pointing to the mediating effects of other variables in determining health outcomes. One exception was the SF-12 MCS for which living with others was a significant predictor variable in the final model, accounting for 10.6% of the variation in mental health score. As discussed in the previous section, this may be for several reasons. One reason could be that those with poorer mental health are more likely to live with others, either out of preference or a perception of requiring additional support. It may also be that socio-economic or

physical health factors which can contribute to poorer mental health may also contribute to decisions around cohabiting. If decisions around habitation are made based on levels of dependency rather than preference, this could affect mental health outcomes. A final consideration may be that external services such as health or social care may perceive those to be living with others to be well-supported both physically and emotionally and therefore this may affect the services provided. Conversely, if those living alone are perceived to be vulnerable, they may receive, or be more willing to accept, a different level of support.

Lone dwelling was not, in this sample, a predictor of health or wellbeing outcomes once other variables were accounted for. Well-known determinants of health and wellbeing in later life such as age, income and education mediated the effect of household composition. This suggests that the vulnerabilities associated with living alone can be countered by other factors.

4.5.4 Other significant findings

Aside from household composition, other factors were found to be significant in predicting health outcomes which had not been indicated as a result of the initial literature search. Variations between the UK regions were significant in several final models and support previous findings which indicated inequities between the four countries (Timmins, 2013). Comparison between the four regions has been of

further interest since the devolution of services in 1999 and indicates the need for further research in this area to better understand the variations (Bevan et al., 2014).

In addition to region in terms of UK country, geographical location was also shown to be a significant predictor for better mental health and subjective health outcomes for those living in rural areas. This contrasts to previous research (Rolls et al., 2011; Khan et al., 2018) which indicated the reverse. Given the heterogeneity of ageing in rural areas this suggests further research is indicated (Burholt et al., 2017).

Employment was consistently found to be a predictor of better health outcomes which is perhaps unsurprising given that individuals are more likely to be employed if they are in better health (Di Gessa et al., 2017). However, given the importance of employment in maintaining identity, social contact, financial independence and routine it may indicate that being in employment can also contribute to supporting better health and wellbeing (Jahoda, 1982; Unruh, 2004). As the UK government, and others, move towards encouraging individuals to work for longer it is important that we better understand the implications of employment in later life and the role it plays in contributing to health and wellbeing. Further research is required to understand employment in later life: how it can affect health and wellbeing but also how to increase access to employment if the psychosocial benefits are to be enjoyed by more people. Furthermore,

if the value of employment is beyond financial remuneration, research is also required regarding other meaningful occupations in later life such as unpaid care work or voluntary work.

4.6 Summary of the chapter

This chapter describes the analysis of selected variables from the UKHLS. Analysis focussed on women over the age of 65 in order to answer the research question:

Is household composition a predictor of health and wellbeing outcomes in older women in the UK?

Comparisons were made between three household composition groups: those living with partners, those living alone and those living with others who are not their partners. Tests of association indicated that there are significant differences in the health outcomes between the household composition groups. Those living with partners consistently demonstrated better health and wellbeing followed by those living alone and then those living with others. Regressions showed that, generally, the effects of household composition were mediated by other, well-known, determinants of health such as SES and age. One exception of this was that living with others (not partners) was a significant predictor for poorer mental health as represented by the SF-12 MCS even when controlling for the other determinants of

health. Areas for further research were highlighted based on these findings.

In addition to SES and age, geographical factors and employment status were significant in predicting health and wellbeing and have been suggested as areas for further research. The nature of the relationship between health, wellbeing and employment is of particular interest given the complexity of the phenomenon and the current political agenda with regards to work in later life. Mention is made of the ways in which employment could be considered beyond traditional paid work such as in the case of voluntary work or unpaid care work which require further investigation for this population.

Chapter 5

Differences in predictors of health and wellbeing between those who live alone and those who cohabit. Further analysis of the Understanding Society data

Following the analysis reported in chapter four, further analysis of the UKHLS data was undertaken. The purpose of this second analysis was to investigate the role of lifestyle or time-use factors which may contribute to the health and wellbeing of older women living alone. This chapter sets out the results of this analysis in answer to the research question:

Do predictors of health and wellbeing in later life for older women living alone differ from those who cohabit?

For this question new variables were selected, which, based on existing literature, were hypothesised to have a potential relationship with health and wellbeing in older women who live alone but have not before been considered in an analysis in this group. The variables consider aspects of time-use such as volunteering or factors relating to neighbourhood such as transport use or the desire to move house. For more detail on the selection and coding of these time-use variables see section 3.3.4. The analysis was carried out on the sample of women living alone as the group of interest. Older women who cohabited were analysed separately as a control group for

comparison. This chapter presents descriptive analysis of the additional variables. The chapter then presents and discusses tests of association between the new variables and the seven health and wellbeing outcome variables. Linear and binary logistic regressions were conducted on the seven outcome variables with the additional variables in the models. The results of the regression modelling are presented and discussed.

5.1 Characteristics of the sample in relation to the additional variables

Data were prepared and the weighting applied as described in Section 3.4.6. For the purpose of this analysis, the data were simplified in terms of the household composition variable. The data were analysed as 'women living alone' compared with 'women living with others. As the primary focus of this second analysis was to explore the role of the additional variables in predicting the health of women who live alone, it was felt that it was sufficient to compare those living alone with those who cohabit. A full description of the rationale for these additional variables and the labelling and coding can be found in Section 3.4.4.

Table 5.1 displays the descriptive statistics in a crosstabulation of the household status groups by the new variables. Car use was by far the most common mode of transport for both groups with 87.9% of the total subsample indicating frequent car use. Public transport was far

lower for all groups with train use being the least frequent. Roughly 5% of all groups responded as immigrant to the UK which is consistent with other data sources showing a lower rate of non-UK born citizens in those aged over 65 than in the 26-64 group (Vargas-Silva and Rienzo., 2019).

Those living alone were less likely to want to move than the total subsample or than those who cohabit (13.4%, 16.1% and 18% respectively, $p \leq .001$). They were also less likely to volunteer, provide care for someone or use the internet: all of which may be consistent with their higher average age. A slightly higher percentage of those living alone had non-resident partners which is consistent with the cohabiting group largely consisting of those living with partners. Only a small percentage of all groups reported not seeing their friends or family at least once a month (2.8-2.9%), but a higher percentage of those living alone reported not going out socially than those cohabiting (16.2% and 12.2% respectively, $p \leq .001$). This latter result may reflect the higher average age of those living alone which may be associated with reduced mobility or transport access.

Table 5.1: Descriptive statistics for additional variables by household status.

Variable	Categories	Those living alone		Those living with others		Total sample		χ^2
		N	%	N	%	N	%	
Car use	Frequent	1482	80.2	2274	93.8	3753	87.9	183.087***
	Infrequent	366	19.8	150	6.2	515	12.1	
Bus use	Frequent	780	42.2	808	33.3	1587	37.2	35.026***
	Infrequent	1070	57.8	1616	66.7	2683	62.8	
Train use	Frequent	198	10.7	278	11.5	476	11.2	0.647
	Infrequent	1653	89.3	2144	88.5	3793	88.8	
Immigrant to UK	Y	90	4.9	124	5.1	214	5.0	0.122
	N	1749	95.1	2293	94.9	4037	95.0	
Like to move	Y	248	13.4	438	18.0	686	16.1	17.074***
	N	1590	85.9	1974	81.3	3559	83.3	
Volunteered in last year	Y	374	20.2	532	21.9	906	21.2	1.932
	N	1478	79.8	1892	78.1	3365	78.8	
Carer (outside of household)	Y	217	11.7	292	12.1	508	11.9	0.107
	N	1634	88.3	2131	87.9	3761	88.1	
Regular internet use	Y	885	47.8	1596	65.8	2476	58.0	140.519***
	N	967	52.2	828	34.2	1795	42.0	
Non-co-resident partner	Y	93	5.4	8	3.3	101	5.1	1.984
	N	1634	94.6	237	96.7	1866	94.9	
Sees family/friends	Y	1798	97.1	2289	97.2	4087	96.2	0.090
	N	54	2.9	65	2.8	119	2.8	
Goes out socially	Y	1549	83.8	2066	87.8	3615	86.0	13.705***
	N	300	16.2	288	12.2	588	14.0	

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$

Y = yes, N = no

5.2 Tests of association between household groups and selected variables

5.2.1 Transport Use

Car use was lower for those living alone (80.2%): perhaps reflective of their higher average age which could lead to higher rates of driving cessation or perhaps a reflection of the economic impact of running a car which may be more difficult in a single person household. The variation in car use between those who live alone and those who cohabit was found to be significant in a χ^2 test of association (183.087, $p \leq .001$). There was a higher percentage of those living alone who indicated frequent bus use than those in the other group or the total subsample (42.2%, 33.3% and 37.2% respectively) which again may indicate economic necessity. It may also reflect the results shown in Section 4.2.5 which show that women who live alone are more likely to live in urban areas: one reason for or consequence of this may be better access to public transport links hence the more frequent use. The χ^2 test of association was also significant for bus use (35.026, $p \leq .001$). A χ^2 test of association indicated that train use did not vary significantly between the household composition groups.

5.2.2. Immigration status

There were few observed differences in the frequency of immigration status by household and a χ^2 test of association showed no statistically

significant difference, suggesting that those who move to the UK are as likely to live alone as cohabit.

5.2.3 Would like to move

A χ^2 test of association between those who reported they would prefer to move from their current home and those who would not, indicated a statistically significant difference between the household types (χ^2 17.074, $p \leq .001$). Those who cohabited were more likely to report wanting to move which may be that this group is younger on average and perhaps more amenable to moving. There are no additional questions which provide a reason for this. Possible reasons could be whether it is related to the suitability of the property, satisfaction with neighbourhood or geographical connectivity with family and friends. While this is a useful indicator that those who live alone appear less likely to want to move it highlights an area of potential future research and also highlights an area which can be addressed in the qualitative part of this project to some extent.

5.2.4 Volunteering

There was little variation in observed frequencies between the household types in terms of likelihood of volunteering. A χ^2 test of association indicated no statistically significant association between these two variables, indicating that those who live alone are not significantly likely to volunteer more or less than those who cohabit.

5.2.5 Carer for other

A χ^2 test of association demonstrated no statistically significant relationship between household composition and whether someone provides care outside the household. This suggests that those who live alone are no more or less likely to provide care outside the household than those who cohabit.

5.2.6 Internet use

A lower percentage of those who live alone reported regular internet use and this was found to be statistically significant using a χ^2 test of association (χ^2 140.519, $p \leq .001$). This suggests that those who live alone are less likely to use the internet perhaps reflective of their older average age or of reduced support in setting up/accessing the internet. This is potentially important as internet use has been shown to be a useful route through which people in later life can maintain social connections, especially with family or friends which may not be local and can contribute to wellbeing by reducing social isolation. (Forsman and Nordmyr, 2015; Lifshitz et al., 2018). This may indicate a need for additional support for those living alone to access the internet in order to support social connectedness.

5.2.7 Non-coresident partner

A χ^2 test of association found no statistically significant relationship between having a non-coresident partner and household composition. This may be reflective of the small numbers in this crosstabulation (although all met the >5 assumption required) as many who lived with partners did not respond to this question and were therefore not included in the analysis of this variable.

5.2.8 Sees family/friends

No significant association was found between likelihood to see friends or family and household composition when tested using a χ^2 test of association. This is particularly interesting given that those who live alone are perceived to be at risk of higher levels of social isolation and perhaps indicates that those who live alone are resourceful in maintaining contact with friends and family. This highlights an area which would be useful to address in the qualitative part of this study.

5.2.9 Goes out socially

A χ^2 test of association suggests that those who live alone are less likely to go out socially than those who cohabit (χ^2 13.705, $p \leq .001$). Again, this may reflect the higher average age of those living alone or may reflect financial constraints of living alone. Those who live alone have been shown to be at increased risk of loneliness and feeling less-

well supported socially (Yeh and Lo, 2004) but this is not consistent across all studies. Some studies have indicated that friendships are a protective factor in maintaining function in those who live alone in later life and as such are important to sustain (Michael et al., 2001). While this is clearly an area of interest for future research it poses an issue in terms of participant recruitment as those who do not go out socially may be a hard to access group.

Table 5.2. Frequencies and χ^2 tests of association between new variables and health and wellbeing outcomes for women who live alone. N given with percentage in parentheses.

		Long-term condition or disability		Self-rated health		Health service use			Life satisfaction	
		Yes	No	Poor	Good	Low	High		Not satisfied	Satisfied
Freq use of car	No	359 (14.4)	156 (8.8)	221 (16.3)	252 (9.3)	388 (11.6)	120 (13.3)		131 (16.6)	340 (10.3)
	Yes	2132 (85.6)	1618 (91.2)	1139 (83.8)	2470 (90.7)	2971 (88.4)	781 (86.7)		656 (83.4)	2955 (89.7)
Freq use of train	χ^2	30.804	p .000	43.278	p .000	2.113	p .148		24.913	p .000
	No	2293 (92.0)	1497 (84.4)	1266 (93.0)	2358 (86.6)	2957 (88.0)	829 (91.8)		731 (92.5)	2891 (87.8)
Freq use of bus	Yes	200 (8.0)	277 (15.6)	96 (7.0)	354 (13.4)	402 (12.0)	74 (8.2)		59 (7.5)	402 (12.2)
	χ^2	60.166	p .000	36.324	p .000	10.211	p .001		14.289	p .000
Immigrant to UK	No	1642 (65.8)	1040 (58.7)	924 (67.8)	1641 (60.3)	2084 (62.0)	596 (66.0)		550 (69.7)	2015 (61.1)
	Yes	852 (34.2)	732 (41.3)	439 (32.2)	1082 (39.7)	1275 (38.0)	307 (34.0)		239 (30.3)	1281 (38.9)
Would like to move	χ^2	22.670	p .000	22.024	p .000	4.781	p .029		20.030	p .000
	No	2351 (94.6)	1684 (95.5)	1276 (94.2)	2593 (95.6)	3189 (95.3)	839 (93.7)		752 (95.4)	3117 (95.1)
Volunteered in last year	Yes	133 (5.4)	80 (4.5)	78 (5.8)	120 (4.4)	158 (4.7)	56 (6.3)		36 (4.6)	161 (4.9)
	χ^2	1.453	p .228	3.489	p .062	3.480	p .062		0.162	p .687
Carer outside household	No	2029 (81.9)	1531 (86.7)	1086 (80.3)	2310 (85.2)	2834 (84.8)	719 (80.4)		583 (74.4)	2814 (85.8)
	Yes	448 (18.1)	235 (13.3)	266 (19.7)	402 (14.8)	509 (15.2)	175 (19.6)		201 (25.6)	465 (14.2)
Uses internet regularly	χ^2	17.437	p .000	15.461	p .000	9.856	p .002		60.596	p .000
	No	2054 (82.3)	1310 (73.8)	1181 (86.6)	2012 (73.9)	2605 (77.6)	751 (83.6)		661 (83.7)	2530 (76.8)
Carer outside household	Yes	441 (17.7)	464 (26.2)	182 (13.4)	711 (26.1)	754 (22.4)	152 (16.8)		129 (16.3)	764 (23.2)
	χ^2	44.634	p .000	86.568	p .000	13.402	p .000		17.575	p .000
Has a non-coreident partner	No	2239 (89.7)	1520 (85.7)	1245 (91.3)	2345 (86.1)	2922 (87.0)	831 (92.0)		708 (89.6)	2882 (87.5)
	Yes	256 (10.3)	253 (14.3)	118 (8.7)	377 (13.9)	437 (13.0)	72 (8.0)		82 (10.4)	413 (12.5)
Sees friends and family	χ^2	15.860	p .000	22.997	p .000	17.165	p .000		2.786	p .095
	No	1221 (48.9)	573 (32.3)	724 (53.2)	920 (33.8)	1329 (39.6)	458 (50.7)		335 (42.4)	1310 (39.8)
Goes out socially	Yes	1274 (51.1)	1200 (67.7)	638 (46.8)	1803 (66.2)	2031 (60.4)	445 (49.3)		455 (57.6)	1984 (60.2)
	χ^2	117.498	p .000	141.659	p .000	36.449	p .000		1.840	p .175
Has a non-coreident partner	No	1228 (95.6)	640 (93.6)	736 (96.7)	1134 (93.7)	1457 (94.5)	408 (96.2)		399 (94.8)	1472 (94.9)
	Yes	57 (4.4)	44 (6.4)	25 (3.3)	76 (6.3)	84 (5.5)	16 (3.8)		22 (5.2)	79 (5.1)
Sees friends and family	χ^2	3.658	p .056	8.624	p .003	1.937	p .164		0.012	p .913
	No	86 (3.5)	33 (1.9)	60 (4.5)	51 (1.9)	84 (2.5)	33 (3.7)		48 (6.3)	64 (2.0)
Goes out socially	Yes	2366 (96.5)	1712 (98.1)	1276 (95.5)	2639 (98.1)	3220 (97.5)	855 (96.3)		716 (93.7)	3190 (98.0)
	χ^2	9.666	p .002	22.280	p .000	3.555	p .059		42.532	p .000
Goes out socially	No	441 (18.0)	144 (8.3)	298 (22.3)	250 (9.3)	428 (13.0)	155 (17.5)		184 (24.2)	365 (11.2)
	Yes	2009 (82.0)	1599 (91.7)	1036 (77.7)	2432 (90.7)	2875 (87.0)	731 (82.5)		577 (75.8)	2889 (88.8)
Goes out socially	χ^2	80.453	p .000	128.115	p .000	12.000	p .001		87.784	p .000

5.3 Relationships between health and wellbeing variables and new variables

Tests of association were carried out to examine the relationships between the selected variables and the health and wellbeing outcome variables. The results from these are presented in Table 5.2. For the four categorical outcome variables Pearson's χ^2 tests of association were carried out, for the remaining three scale outcome variables analyses of variance (ANOVA) were carried out.

5.3.1 Transport use

Transport use was, overall, found to be associated with most of the health and wellbeing outcomes. The exceptions to this were car use and seeing friends and family which were not found to be associated with health service use. For the other tests of association, those in poorer health and wellbeing were less likely to use car, bus or train transport. This general pattern is consistent with the decline in accessing the community which is commonly seen as health and wellbeing decline.

5.3.2 Immigration status

The only health and wellbeing outcome which was found to be statistically associated with immigration status was the SF-12 physical health component (t value = 4.435, p = .035). There is limited literature

examining the health status of immigrants to the UK, but these results indicate that the relationship is a complex one, underlining the importance of acknowledging the heterogeneity of reasons for immigration (Giuntella et al., 2018). These results may also reflect the small number of immigrants in the sample (reflective of the overall UK population) which may affect the precision of the statistical analysis. This suggests further research is needed of immigrants to the UK to better understand their health and wellbeing.

5.3.3 Would like to move

With the exception of the SF-12 physical component score, all the health and wellbeing variables were found to be statistically associated with wanting to move. Those reporting better health and wellbeing outcomes were more likely to want to move. This suggests that those considering moving may be younger which is consistent with the results shown in section 5.2.3 where those more likely to want to move were more likely to cohabit. In some respects, this is to be expected as those in better health may be in a better position both physically and financially to consider moving. It could be considered surprising that those in poorer health are content with their current dwelling, given that high numbers of UK properties have been shown to be unsuitable for older people (Centre for Ageing Better, 2021). It has been suggested that poorer housing can lead to issues with health and wellbeing, but it is also acknowledged that those in poorer health

require adaptations or changes to their homes in order to support changing levels of function (Hawkins and Stewart 2002; Clair and Hughes 2019)

5.3.4 Volunteered in last year

Those who reported having volunteered within the last 12 months reported higher levels of health and wellbeing for all seven of the health and wellbeing outcome variables. This was statistically significant at $p \leq .001$ for all the outcome variables. As engaging in volunteering requires a relatively good level of health and wellbeing (Choi, 2003; Onyx and Warburton, 2003), this is not surprising and indicates the need for further analysis to be able to make any conclusions with regards to causation.

5.3.5 Cares for someone outside household

The results in Table 5.2 suggest those who report caring for someone outside their household also indicated better health and wellbeing. One exception to this was the outcome variable life satisfaction which did not show a statistically significant association between providing care and life satisfaction. All other health and wellbeing outcome variables were significant at the $p \leq .001$ level. As with volunteering this is perhaps unsurprising as providing care support for someone outside the household requires a fairly good level of physical and cognitive functioning. Some previous studies have highlighted potential risks of

providing unpaid care including emotional and financial burdens (Pinquart and Sorensen, 2003; Vasileiou et al., 2017; Greenwood et al., 2019). This indicates that for older women providing care the relationship between caring and their own health and wellbeing may be a complex one which requires further examination.

5.3.6 Regular internet use

Internet use was not found have a statistically significant association with life satisfaction or with subjective wellbeing as represented by a reversed GHQ score. It was, however, found to have an association with all other health and wellbeing outcomes, suggesting overall that those who regularly used the internet reported higher health and wellbeing. As internet use is generally a newer skill in this age group, this could well be that those who are more likely to use technology are in better health in order to learn new skills. It may also be that those who are more likely to use the internet may tend to be younger. This will be explored more later in section 5.4 when the regressions enable age to be controlled for in looking at the relationship between internet use and health.

5.3.7 Has non-coresident partner

Those who reported a non-coresident partner reported higher levels of physical health as represented by SF-12 PCS ($t = 9.947$, $p \leq .002$) and better self-reported health ($\chi^2 8.624$, $p \leq .003$). The other outcome

variables were not found to have a statistically significant association with the presence of a non-coresident partner. The absolute numbers of women reporting the presence of a non-coresident partner were relatively small within the overall sample and therefore were not suitable to be included in the binary logistic regressions described in section 5.4. While they are a small percentage of the sample, changes to household dynamics and marital norms in recent decades suggest that this may be an area of increasing interest worthy of further investigation (Klinenberg, 2014; Törnqvist, 2019).

5.3.8 Sees friends and family

Health service use as represented by visits to GP was not found to have a statistically significant association with seeing friends and family regularly. All of the other health and wellbeing outcomes were found to have a statistically significant association. The presence of a long-term condition or disability was significant (χ^2 9,666, $p = .002$) with self-rated health, life satisfaction, GHQ, SF-12 MCS and PCS were all significant at the $p \leq .001$ level (χ^2 22.280, 42.532 and $t = 18.904$, 29.686, 21.048 respectively). Only a very small percentage of the overall sample did not see anyone regularly and while the association was found to be significant it does not indicate causation: for example, while seeing friends and family may benefit health it is also likely that poorer health will affect an individual's ability to maintain social

contacts. This is something which has been examined in previous literature and remains a complex issue (Smith and Victor, 2018).

5.3.9 Goes out socially

All seven outcome variables had a statistically significant association with the reporting of going out socially. Again, this is likely to be a complex relationship as going out can help to maintain positive health and wellbeing, but conversely better health and wellbeing is likely to lead to increased levels of social contact outside of the house. Previous research has indicated that, as with seeing friends and family, it is not only the number of contacts which is important but the satisfaction with these which is important (Pinquart and Sorensen, 2001) and this is likely to continue to be an area of further research. What is useful in terms of this study is to examine the relationship across the sample but also between household composition groups. The regression analysis discussed below allows for a comparison of the relationship between these new variables and the outcome variables between those who live alone and those who cohabit. This enables a better understanding of how significant the new variables are in predicting health and wellbeing and how this might vary by household composition.

Table 5.3: Frequencies and t-tests of new variables by scale health outcome measures. Mean (SD).

		GHQ	SF-12 PCS	SF-12 MCS
<i>Freq use of car</i>	No	24.49 (5.730)	37.9497 (13.81942)	48.3731 (11.42184)
	Yes	25.19 (4.8517)	42.0942 (12.95980)	51.4114 (9.40439)
	<i>T value</i>	W 6.219	W 37.135 ***	W 29.913 ***
<i>Freq use of train</i>	No	25.02 (5.042)	40.8857 (13.26022)	50.9059 (9.87461)
	Yes	25.72 (4.509)	47.2117 (10.56472)	52.5107 (8.35434)
	<i>T value</i>	W 9.562**	W 135437***	9.932**
<i>Freq use of bus</i>	No	24.81 (5.269)	40.1573 (13.74987)	50.7652 (10.13809)
	Yes	25.59 (4.434)	44.0375 (11.62788)	51.5335 (8.96555)
	<i>T value</i>	W 24.938***	W 91.222***	6.257*
<i>Immigrant to UK</i>	No	25.09 (5.008)	41.7092 (13.16223)	51.0755 (9.69024)
	Yes	25.37 (4.665)	39.6765 (12.40676)	50.4238 (10.56282)
	<i>T value</i>	0.575	4.435***	0.829
<i>Would like to move</i>	No	25.36 (4.735)	41.7479 (13.08123)	51.5426 (9.41266)
	Yes	23.89 (5.885)	40.8598 (13.37186)	48.6250 (10.87367)
	<i>T value</i>	W 36.027***	2.500	W 41.018***
<i>Volunteered in last year</i>	No	24.88 (5.116)	40.4898 (13.37480)	50.5922 (10.05989)
	Yes	25.87 (4.427)	45.5563 (11.38469)	52.6995 (8.21853)
	<i>T value</i>	W 27.263***	W 104.999***	W 32.541***
<i>Carer outside household</i>	No	25.02 (5.058)	41.0930 (13.26106)	50.8784 (9.87525)
	Yes	25.68 (4.424)	45.2203 (11.53595)	52.3445 (8.44923)
	<i>T value</i>	W 9.336**	W 52.859***	W 12.369***
<i>Uses internet regularly</i>	No	24.94 (5.070)	38.0390 (13.25374)	50.2136 (10.40098)
	Yes	25.20 (4.932)	43.9987 (12.49979)	51.6108 (9.19923)
	<i>T value</i>	2.638	W 204.751***	W 19.135***
<i>Has a non-coresident partner</i>	No	24.88 (5.190)	38.8174 (13.42092)	50.6184 (10.16740)
	Yes	24.67 (5.488)	43.1518 (13.70162)	51.3595 (10.86037)
	<i>T value</i>	0.166	9.947**	0.504
<i>Sees friends and family</i>	No	22.60 (6.273)	35.9442 (13.03959)	44.6440 (12.61593)
	Yes	25.20 (4.909)	41.7869 (13.09500)	51.2897 (9.55506)
	<i>T value</i>	W 18.904***	21.048***	W 29.686***
<i>Goes out socially</i>	No	22.98 (6.293)	35.3067 (13.64314)	47.1295 (11.71847)
	Yes	25.47 (4.626)	42.6228 (12.76332)	51.7438 (9.19372)
	<i>T value</i>	W 78.193***	W 135.170***	W 75.577***

W = Levene's test significant therefore Welch's F used.

GHQ = General Health Questionnaire. See Section 3.4.2 for more details.

SF-12 = Short Form 12. See Section 3.4.2 for details.

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$

5.4 Regressions of additional variables on health and wellbeing variables.

This section presents the results of the regression models which add the new variables (transport use, wanting to move, volunteering, care work, internet use and socialising with friends and family) to models which include the demographic and socioeconomic variables from chapter four. This allows for examination of the effect of the novel variables on the seven health and wellbeing outcomes.

5.4.1 Presence of a long-term condition or disability

Table 5.4 presents the final model results of the binary logistic regression predicting the presence of a long-term health condition. The significance of the predictor variables can be seen to vary between those who live alone, those who cohabit and the total subsample. Those who live alone seem overall less likely to report a long-term condition than those who cohabit (OR 0.822 (0.693, 0.975), $p \leq .05$). Increasing age was a significant factor in predicting a higher likelihood of reporting a long-term condition or disability for those who live with others, but this was not found to be significant in those living alone. This was true for both the 75-84 age bracket and the 85+ age bracket (OR 0.652 (0.533, 0.798), $p \leq .001$, OR 0.572 (0.367, 0.890), $p \leq .05$ respectively). This could be that those who live alone do so because they are in better health or that living alone promotes increased independence with activities of daily living. Wanting to move

was also predictive of poorer health in those cohabiting (OR 0.664 (0.532, 0.829), $p \leq .001$) but not found to be significant in those living alone. Train use and owning a home were both found to be a significant predictor of a better health outcome for those who cohabit (OR 1.596 (1.203, 2.147), $p \leq .01$ and OR 1.443 (1.117, 1.865), $p \leq .01$ respectively) but not found to be significant for those who live alone. As a measure of SES, homeownership is surprising as it could be anticipated that those who live alone would require more substantial financial resources to support their health and wellbeing. This could perhaps indicate that those who live alone have come to use other resources such as community support, or perhaps that, while homeownership reflects better SES throughout the life course, it does not accurately reflect monthly expenditure in later life.

Volunteering was found to be significant in predicting a better health outcome for those who live alone but not who cohabit (OR 1.516 (1.176, 1.953), $p \leq .01$). This could indicate that women who live alone are more likely to volunteer only when they are in better health, or that volunteering is a more important factor in maintaining better health for those who live alone. This indicates that further research is required to better understand the relationship between health and wellbeing and volunteering in later life. This is especially true in the current political context in the UK which is keen to promote continued engagement in the labour market throughout the life course (DWP, 2014).

Employment status, bus use, internet use and going out socially were all found to be significant in predicting a lower likelihood of reporting a long-term condition or disability. This was true of the overall sample with little difference between those living alone or cohabiting suggesting that these variables equally important in predicting long-term conditions or disability in older women regardless of household composition.

Table 5.4: Logistic regression results predicting presence of a long-term condition/disability.

<i>Factors</i>	<i>Living alone OR (CI)</i>	<i>Living with others OR (CI)</i>	<i>Total sample OR (CI)</i>
<i>Women living alone - (reference is those living with partners)</i>	-	-	0.822* (0.693, 0.975)
<i>Age 75-84 (ref: 65-74)</i>	0.897 (0.709, 1.136)	0.652*** (0.533, 0.798)	0.733*** (0.630, 0.854)
<i>Age 85 +</i>	0.849 (0.628, 1.147)	0.572* (0.367, 0.890)	0.701** (0.553, 0.889)
<i>Income (log)</i>	0.893 (0.702, 1.137)	1.178 (0.978, 1.419)	1.079 (0.934, 1.248)
<i>Education (ref: 1.129 (0.878, 1.452) school-level)</i>		0.912 (0.735, 1.131)	1.003 (0.852, 1.180)
<i>Non-homeowner (ref 1.228 (0.977, 1.544) is homeowner)</i>		1.443** (1.117, 1.865)	1.361*** (1.149, 1.611)
<i>Wales (reference is 0.908 (0.588, 1.401) England)</i>		0.937 (0.627, 1.400)	0.921 (0.687, 1.235)
<i>Scotland</i>	1.235 (0.868, 1.759)	0.963 (0.699, 1.328)	1.054 (0.832, 1.335)
<i>NI</i>	1.556 (0.837, 2.893)	1.039 (0.583, 1.854)	1.256 (0.822, 1.919)
<i>Not in employment (ref: employed)</i>	2.181*** (1.415, 3.363)	1.588** (1.174, 2.147)	1.750*** (1.368, 2.239)
<i>Ethnicity</i>	2.018 (0.846, 4.814)	1.013 (0.499, 2.058)	1.324 (0.764, 2.295)
<i>Rural</i>	1.100 (0.864, 1.400)	1.179 (0.977, 1.424)	1.159* (1.001, 1.343)
<i>Frequent travel by bus</i>	1.602*** (1.290, 1.990)	1.330** (1.101, 1.606)	1.435*** (1.245, 1.653)
<i>Frequent travel by car</i>	1.106 (0.835, 1.465)	1.197 (0.801, 1.789)	1.108 (0.883, 1.390)
<i>Frequent travel by 1.277 (0.921, 1.770) train</i>		1.596** (1.203, 2.117)	1.423** (1.152, 1.758)
<i>Non-UK born</i>	0.617 (0.350, 1.089)	0.818 (0.511, 1.309)	0.735 (0.514, 1.052)
<i>Would like to move</i>	0.765 (0.574, 1.020)	0.664*** (0.532, 0.829)	0.700*** (0.587, 0.833)
<i>Volunteered in last 1.516** (1.176, 1.953) year</i>		1.065 (0.860, 1.320)	1.228* (1.043, 1.445)
<i>Regular internet use</i>	1.355* (1.073, 1.953)	1.428** (1.161, 1.756)	1.398*** (1.199, 1.630)
<i>Goes out socially</i>	1.599** (1.148, 2.225)	1.656** (1.230, 2.228)	1.658*** (1.332, 2.062)
<i>Sees friends/family</i>	0.902 (0.455, 1.790)	1.211 (0.681, 2.152)	1.065 (0.686, 1.654)
<i>N</i>	1696	2526	4222
<i>X² (model)</i>	129.988***	192.341***	348.882***
<i>Cox and Snell R²</i>	.069	.079	.080
<i>Nagelkerke R²</i>	.094	.106	.108

OR = Odds Ratio, CI = Confidence Interval

*** p ≤ 0.001, ** p ≤ 0.01, * p ≤ 0.05

5.4.2 Health service use

Table 5.5 presents the results of the binary logistic regressions which predict the likelihood of high or low health service use as represented by GP visits. As with presence of a long-term health condition or disability, homeownership was found to be a significant predictor for lower GP use for those who cohabit but not those who live alone (OR 0.575 (0.440, 0.751), $p \leq .001$) indicating that those who do not own their own home and cohabit are more likely to visit the GP. This is possibly a reflection of the better SES associated with homeownership and in turn better health and wellbeing generally associated with higher SES (Office for National Statistics, [ONS], 2015). This does not explain why it was not found to be significant for those living alone but, as discussed in section 5.4.1, could reflect that women who live alone utilise alternative resources for support when financial support is limited, as indicated in previous research (Nilsson et al., 2007; Ryser and Halseth, 2011). Being in employment, frequent bus use and frequent internet use were all also predictive of lower GP use for those who cohabit but not those who live alone (OR 0.552 (0.331, 0.823), $p \leq .01$, OR 0.703 (0.556, 0.888), $p \leq .01$, OR 0.779 (0.613, 0.991) $p \leq .05$ respectively). This confirms significant variations in how factors affect women who cohabit and those who live alone although further analysis and research is required to better understand the mechanisms at play.

Residing in Wales appeared to be a significant predictor of higher GP use for those who live alone but not those who cohabit (OR 2.194 (1.423, 3.385), $p \leq .001$) which could be reflective of variations in health and social care provision between the four UK regions discussed in section 4.4.2 (Timmins, 2013; Bevan et al., 2014) in addition to being suggestive of variations between reliance on health services between household composition types. For those who live alone, going out socially was found to be a statistically significant predictor of lower health service use (OR 0.705 (0.511, 0.972), $p \leq .05$) but not for those who cohabited. This could indicate that for those who live alone, going out socially plays a more significant role in maintaining health than for those who cohabit. It could also indicate that those who live alone are less able to maintain an active social life outside the home once their health deteriorates which has been demonstrated previously (Sacker et al., 2017).

Table 5.5: Logistic regression results predicting GP use (high/low).

<i>Factors</i>	<i>Living alone OR (CI)</i>	<i>Living with others OR (CI)</i>	<i>Total sample OR (CI)</i>
<i>Women living alone - (reference is those living with partners)</i>	-	-	0.893 (0.730, 1.091)
<i>Age 75-84 (reference is 65-74)</i>	1.001 (0.762, 1.315)	1.202 (0.952, 1.518)	1.124 (0.943, 1.235)
<i>Age 85 +</i>	0.889 (0.633, 1.247)	1.145 (0.726, 1.805)	0.950 (0.730, 1.235)
<i>Income (log)</i>	1.290 (0.981, 1.696)	0.801 (0.635, 1.008)	0.963 (0.810, 1.146)
<i>Education (ref: school-level)</i>	0.931 (0.687, 1.260)	0.901 (0.683, 1.188)	0.913 (0.736, 1.119)
<i>Homeownership (ref is homeowner)</i>	0.814 (0.633, 1.045)	0.575*** (0.440, 0.751)	0.689*** (0.575, 0.827)
<i>Wales (reference is England)</i>	2.194*** (1.423, 3.385)	0.914 (0.564, 1.482)	1.427* (1.040, 1.958)
<i>Scotland</i>	1.197 (0.805, 1.781)	1.011 (0.688, 1.484)	1.122 (0.853, 1.475)
<i>Northern Ireland</i>	1.160 (0.570, 2.362)	1.761 (0.949, 3.269)	1.436 (0.905, 2.281)
<i>Employment status (ref: employed)</i>	0.563 (0.307, 1.030)	0.522** (0.331, 0.823)	0.538** (0.375, 0.772)
<i>Ethnicity</i>	0.776 (0.298, 2.016)	1.673 (0.743, 3.765)	1.137 (0.620, 2.086)
<i>Rural</i>	0.874 (0.659, 1.158)	0.948 (0.754, 1.191)	0.914 (0.767, 1.090)
<i>Frequent travel by bus</i>	0.968 (0.754, 1.243)	0.703** (0.556, 0.888)	0.825* (0.697, 0.977)
<i>Frequent travel by car</i>	1.088 (0.798, 1.484)	1.255 (0.801, 1.967)	1.133 (0.882, 1.455)
<i>Frequent travel by train</i>	1.067 (0.715, 1.591)	0.728 (0.493, 1.075)	0.876 (0.665, 1.154)
<i>Non-UK born</i>	1.735 (0.998, 3.017)	0.984 (0.548, 1.767)	1.305 (0.878, 1.939)
<i>Would like to move</i>	1.198 (0.870, 1.648)	1.336* (1.040, 1.716)	1.297** (1.067, 1.576)
<i>Volunteered in last year</i>	0.784 (0.568, 1.082)	0.918 (0.698, 1.206)	0.862 (0.701, 1.060)
<i>Regular internet use</i>	0.785 (0.600, 1.027)	0.779* (0.613, 0.991)	0.775** (0.649, 0.926)
<i>Goes out socially</i>	0.705* (0.511, 0.972)	1.132 (0.821, 1.562)	0.902 (0.721, 1.130)
<i>Sees friends/family</i>	1.308 (0.632, 2.708)	0.634 (0.364, 1.105)	0.858 (0.554, 1.329)
<i>N</i>	1690	2528	4218
<i>X² (model)</i>	45.149**	94.311***	101.329***
<i>Cox and Snell R²</i>	.024	.040	.024
<i>Nagelkerke R²</i>	.038	.062	.038

*** p ≤ 0.001, ** p ≤ 0.01, * p ≤ 0.05, OR = Odds Ratio, CI = Confidence Interval

5.4.3 Subjective health

Table 5.6 displays the results of the binary logistic regression of the predictor variables on the outcome variable of subjective health, dichotomised into good/poor. There were some variables which were found to be statistically significant in both groups in predicting better subjective health. These were: homeownership, employment status, rural dwelling and frequent use of bus. These are all fairly unsurprising. The frequent use of bus and being in employment are likely to be associated with good health and homeownership as a measure of SES is, again, commonly found to be associated with better health (Laaksonen et al., 2007). The positive influence of green space on health and wellbeing is well documented and appears to be supported here, but the relationship between rurality and later life is a complex one, the research of which is growing (Burholt et al., 2018).

The variations between the two household groups are evidenced in several variables for this health outcome. For those cohabiting, increased age and wanting to move were both found to be significant predictors of poorer subjective health (OR 0.781 (0.627, 0.972), $p \leq .05$ and OR 0.728 (0.573, 0.924), $p \leq .01$ respectively). As subjective health can be influenced by many factors such as cohort effects and comparison with peers as well as biological health, it is a factor which is not consistently found to be associated with increasing age (Wurm et al., 2008; Pinquart and Sorensen, 2000). Discrepancies in housing

need and housing quality or location is understandably a factor in contributing to wellbeing but interestingly appears to be significant here for those who cohabit. Increased income and regular internet use were both found to be significant predictors of better health for those cohabiting (OR 1.306 (1.050, 1.624), $p \leq .05$ and OR 1.563 (1.252, 1.951), $p \leq .001$ respectively). The income is unsurprising and as with GP use and homeownership (see section 5.4.2), as a measure of SES it is interesting that this was not found to be significant for those living alone. Internet use and health in later life is a relatively under-researched area but some studies have found it to be a predictor of better health and wellbeing outcomes, while others suggest the effect of internet use is complex and variable (Kobayashi et al, 2015, Beneito-Montagut et al., 2018). For those living alone the only predictive variable found to be significant for predicting better subjective health was having volunteered in the last year (OR 2.178 (1.609, 2.948), $p \leq .001$). As with the presence of a long-term health condition (see section 5.4.1) this is suggestive of the act of volunteering playing a more significant role in the health of those older women who live alone. While those who volunteer are more likely to do so because they are in good health, it is interesting that this was found to be significant in those who live alone and not in those who cohabit. This perhaps indicates that those who live alone and engage in community activities such as volunteering benefit to a greater extent than those who cohabit. This is discussed further in section 5.5.3.

Table 5.6: Logistic regression results predicting subjective health (good/poor).

<i>Factors</i>	<i>Living alone OR (CI)</i>	<i>Living with others OR (CI)</i>	<i>Total sample OR (CI)</i>
<i>Women living alone - (reference is those living with partners)</i>	-	-	0.992 (0.824, 1.195)
<i>Age 75-84 (reference is 65-74)</i>	0.888 (0.692, 1.138)	0.781* (0.627, 0.972)	0.804** (0.682, 0.946)
<i>Age 85 +</i>	0.979 (0.719, 1.333)	0.858 (0.551, 1.338)	0.910 (0.713, 1.162)
<i>Income (log)</i>	0.810 (0.631, 1.039)	1.306* (1.050, 1.624)	1.081 (0.920, 1.270)
<i>Education (ref: school-level)</i>	1.233 (0.933, 1.628)	1.294 (0.996, 1.680)	1.261* (1.044, 1.523)
<i>Homeownership (ref is homeowner)</i>	1.989*** (1.585, 2.496)	2.183*** (1.688, 2.824)	2.120*** (1.791, 2.509)
<i>Wales (reference is England)</i>	0.661 (0.420, 1.040)	0.799 (0.516, 1.235)	0.730* (0.534, 0.997)
<i>Scotland</i>	0.902 (0.622, 1.208)	0.803 (0.564, 1.144)	0.836 (0.648, 1.079)
<i>Northern Ireland</i>	0.792 (0.402, 1.564)	0.553 (0.284, 1.076)	0.662 (0.412, 1.064)
<i>Employed (ref: not employed)</i>	2.039** (1.187, 3.504)	2.269*** (1.481, 3.475)	2.177*** (1.562, 3.036)
<i>Ethnicity</i>	1.457 (0.547, 3.879)	0.934 (0.414, 2.108)	1.145 (0.615, 2.129)
<i>Rural</i>	1.359* (1.053, 1.755)	1.502*** (1.206, 1.869)	1.454*** (1.233, 1.715)
<i>Frequent travel by bus</i>	1.657*** (1.316, 2.086)	1.523*** (1.224, 1.895)	1.580*** (1.350, 1.850)
<i>Frequent travel by car</i>	1.033 (0.778, 1.373)	1.304 (0.860, 1.977)	1.063 (0.844, 1.339)
<i>Frequent travel by train</i>	1.342 (0.914, 1.970)	1.185 (0.832, 1.689)	1.238 (0.956, 1.604)
<i>Non-UK born</i>	0.627 (0.364, 1.081)	0.726 (0.426, 1.237)	0.672* (0.461, 0.980)
<i>Would like to move</i>	0.767 (0.571, 1.031)	0.728** (0.573, 0.924)	0.743** (0.618, 0.893)
<i>Volunteered in last year</i>	2.178*** (1.609, 2.948)	1.178 (0.910, 1.523)	1.545*** (1.272, 1.878)
<i>Regular internet use</i>	1.250 (0.982, 1.591)	1.563*** (1.252, 1.951)	1.413*** (1.202, 1.662)
<i>Goes out socially</i>	1.866*** (1.381, 2.523)	1.694*** (1.265, 2.270)	1.803*** (1.466, 2.219)
<i>Sees friends/family</i>	0.869 (0.461, 1.640)	1.764 (0.993, 3.131)	1.266 (0.827, 1.937)
<i>N</i>	1588	2423	4011
<i>X² (model)</i>	210.587***	269.221***	471.088***
<i>Cox and Snell R²</i>	.115	.112	.112
<i>Nagelkerke R²</i>	.157	.159	.155

*** p ≤ 0.001, ** p ≤ 0.01, * p ≤ 0.05 OR = Odds Ratio, CI = Confidence Interval

5.4.4 SF-12-Mental Component Score

The results of the linear regression of the predictor variables on the SF-12 mental component score are displayed in Table 5.7. For this outcome variable three predictor variables were significant in predicting better health across both household types. These were being a homeowner, going out socially and seeing friends/family (OR 1.893 (1.136, 2.651), $p \leq .001$, OR 2.951 (2.013, 3.890), $p \leq .001$ and OR 3.686 (1.813, 5.560), $p \leq .001$ respectively for total subsample regressions). Interestingly, while the factors were found to be commonly significant predictors across both groups there were notable differences in the level of significance and the OR. As with the previous outcome variables, social factors such as seeing friends/family (or volunteering in the case of subjective health, section 5.4.3) have a lower p value and a higher OR for those living alone whereas the SES indicator of homeownership produced a lower p value and OR for those cohabiting. This is suggestive that for women living alone, social factors are perhaps more significant in promoting better health and wellbeing than for those who cohabit for whom SES is a more significant factor. In this case, wanting to move was predictive of poorer mental health for both household types (OR -2.266 (-3.053, -1.479), $p \leq .001$) which is consistent with existing literature which indicates that dissatisfaction with housing or neighbourhood can affect health and wellbeing (Toma et al., 2015; Barry et al., 2018).

For those living alone three variables were found to be significant predictors of better mental health as represented by the SF-12 MCS. These were: increased age (for both the 75-84 and 85+ age groups compared with 65-74), residing in Scotland and volunteering in the last year (OR 1.605 (0.500, 2.708), $p \leq .01$, OR 1.799 (0.408, 3.189), $p \leq .05$, OR 1.845 (0.183, 3.507), $p \leq .05$ and OR 1.585 (0.370, 2.801), $p \leq .05$ respectively). These were not found to be significant in predicting SF-12 MCS for those who cohabit. As with GP use (section 5.4.2), the regional variation may reflect disparities between health and social services in the four UK countries (Timmins, 2013) or may be reflection of differing cultural norms around reporting mental health concerns. Incidences of mental health issues are recognised to lower in later life, although this could be due to misattribution of symptoms, or cohort effects affecting reporting. Volunteering is, again, a predictor of better health as with presence of a long-term condition and self-rated health (sections 5.4.1 and 5.4.3 respectively). This adds to the evidence that volunteering may be beneficial for health (Galenkamp et al., 2016; Lum and Lightfoot, 2005; Plagnol and Huppert, 2010) and for women who live alone this appears to be more important, perhaps providing a route to social contact, which can be affected by retirement or other events such as a pandemic (Grotz et al., 2020; Scharf and Victor, 2005).

Conversely, those who cohabit had four variables found to be significant predictors of better mental health which were not significant

for those living alone. There were: rural dwelling, frequent bus use, frequent car use and regular internet use (OR 1.061 (0.220, 1.902), $p \leq .05$, OR 1.060 (0.215, 1.906), $p \leq .05$, OR 3.292 (1.517, 5.067), $p \leq .001$ and OR 1.106 (0.175, 2.037), $p \leq .05$ respectively). These are all fairly well-evidenced in the existing literature (Dwyer et al., 2000; Khan et al., 2018; Sacker et al., 2017) although it is interesting that for those who live alone, these were not found to be significant. These are areas which are explored in the qualitative portion of this study, and which could be considered in further research.

Table 5.7: Linear regression results predicting SF-12 Mental Component Score.

<i>Factors</i>	<i>Living alone β (CI)</i>	<i>Living with others β (CI)</i>	<i>Total sample β (CI)</i>
<i>Women living alone (ref: those living with partners)</i>	-	-	0.198 (0.622, -0.588)
<i>Age 75-84 (reference is 65-74)</i>	1.604** (0.500, 2.708)	0.034 (-0.871, 0.938)	0.583 (-0.117, 1.283)
<i>Age 85 +</i>	1.799* (0.408, 3.189)	-1.519 (-3.440, 0.402)	0.728 (-0.343, 1.798)
<i>Income (log)</i>	-0.499 (-1.618, 0.621)	0.103 (-0.724, 0.931)	0.060 (-0.604, 0.725)
<i>Education (ref: school-level)</i>	0.711 (-0.483, 1.904)	0.035 (-0.928, 0.998)	0.309 (-0.443, 1.060)
<i>Homeownership (ref is homeowner)</i>	1.148* (0.098, 2.197)	2.759*** (1.640, 3.877)	1.893*** (1.136, 2.651)
<i>Wales (reference is England)</i>	-1.193 (-3.251, 0.865)	0.815 (-0.995, 2.625)	-0.215 (-1.576, 1.146)
<i>Scotland</i>	1.845* (0.183, 3.507)	0.661 (-0.772, 2.094)	1.178* (0.093, 2.263)
<i>Northern Ireland</i>	-0.587 (-3.653, 2.478)	-1.082 (-3.889, 1.726)	-0.760 (-2.833, 1.314)
<i>Employment status (ref: employed)</i>	1.333 (-0.706, 3.371)	1.245 (-0.081, 2.572)	1.166* (0.043, 2.290)
<i>Ethnicity</i>	3.972 (-0.447, 8.390)	-1.965 (-5.172, 1.242)	0.109 (-2.500, 2.719)
<i>Rural</i>	1.109 (-0.006, 2.225)	1.061* (0.220, 1.902)	1.171*** (0.497, 1.845)
<i>Frequent travel by bus</i>	0.865 (-0.150, 1.880)	1.060* (0.215, 1.906)	0.958** (0.307, 1.609)
<i>Frequent travel by car</i>	0.504 (-0.784, 1.791)	3.292*** (1.517, 5.067)	1.202* (0.185, 2.220)
<i>Frequent travel by train</i>	0.075 (-1.503, 1.653)	0.590 (-0.664, 1.845)	0.307 (-0.678, 1.291)
<i>Non-UK born</i>	-1.769 (-4.267, 0.730)	0.784 (-1.304, 2.872)	-0.271 (-1.877, 1.334)
<i>Would like to move</i>	-2.229*** (-3.534, -0.924)	-2.277*** (-3.254, -1.300)	-2.266*** (-3.053, -1.479)
<i>Volunteered in last year</i>	1.585* (0.370, 2.801)	0.623 (-0.338, 1.583)	0.989** (0.233, 1.746)
<i>Regular internet use</i>	-0.392 (-1.480, 0.696)	1.106* (0.175, 2.037)	0.423 (-0.285, 1.131)
<i>Goes out socially</i>	2.964*** (1.557, 4.370)	2.633*** (1.362, 3.904)	2.951*** (2.013, 3.890)
<i>Sees friends/family</i>	4.799*** (1.839, 7.789)	2.734* (0.319, 5.149)	3.686*** (1.813, 5.560)
<i>N</i>	1701	2223	3923
<i>Adjusted R²</i>	.055	.072	.057

*** p ≤ 0.001, ** p ≤ 0.01, * p ≤ 0.05 CI = Confidence Interval

5.4.5 SF-12-Physical Component Score

Table 5.8 shows the results of the regressions of the predictor variables on the SF12-PCS. Interestingly, the results for the PCS were much more similar between the two household types than for the MCS. A total of seven predictor variables were found to be predictive of physical health within both those living alone and those cohabiting. Increased age was found to be predictive of poorer physical health, as to be expected (β -6.671 (-8.025, -5.317), $p \leq .001$ for total sample for the 85+ group with ages 65-74 as reference) and common SES factors such as homeownership and higher education were found to be predictive of better physical health as commonly illustrated in the literature (total sample β 4.730 (3.771, 5.688), $p \leq .001$ and β 1.610 (0.658, 2.561), $p \leq .001$ respectively) (Marmot et al., 2010). Employment, bus, and train use and going out socially were all found to be predictive of better health and potentially indicative of these activities being affected by poorer physical health. Although there is a suggestion that safe accessible infrastructure such as public transport can help to maintain function and independence (Grenier 2005; Galenkamp et al., 2016) by promoting engagement in activities and enabling social contact.

Surprisingly, increased income was found to be associated with poorer physical health for those who live alone. This is an anomaly within the literature and is inexplicable, despite the data and the model being

checked this remains the case. ANOVAs were carried out to clarify the findings and can be viewed in Appendix 5. Given the weight of evidence supporting the link between SES and health (Marmot et al., 2010) other explanations should be sought. This may point to the use of monthly income being less suitable as a measure of SES for those who live alone than perhaps homeownership, financial wellbeing, or the ability to manage on one's income (MacIntyre et al., 2003; Weston and Qu, 2003; Laaksonen et al., 2007; Byles et al., 2019). It may be partly explained by the alternative support networks engaged by those who live alone (Sun et al., 2007; Foster and Neville, 2010; Lou and Ng, 2012) and the importance of life course factors in addition to solvency in later life (Heap et al., 2017; Nagamine et al., 2019). However, existing evidence has highlighted that older women are at higher risk of financial instability as are those who live alone in later life (Middleton et al., 2007; Hazuchova et al., 2019) meaning that this group remains vulnerable to the effects of poverty in later life.

Interestingly, volunteering was once again a predictor of better health as with three of the four previous outcomes for women who live alone but not those who cohabit (β 3.963 (2.441, 5.485), $p \leq .001$). In terms of those who cohabit, three variables predicted physical health which were not found to be significant for those living alone. These were rural habitation and internet use, which predicted better health (β 1.685 (0.607, 2.763), $p \leq .01$), β 1.895 (0.701, 3.088), $p \leq .01$) and wanting to move which predicted poorer health (β -1.254 (-2.506, -0.001), $p \leq$

.05). These are consistent with existing literature and serve to highlight potentially important differences in how the health and wellbeing of older women can be affected depending on household types (Cotten et al., 2013; Khan et al., 2018).

Table 5.8: Linear regression results predicting SF-12 Physical Component Score.

<i>Factors</i>	<i>Living alone</i> β (CI)	<i>Living with others</i> β (CI)	<i>Total sample</i> β (CI)
<i>Women living alone (ref: those living with partners)</i>	-	-	-1.968 *** (-2.962, -0.974)
<i>Age 75-84 (reference is 65-74)</i>	-2.458 *** (-3.840, -1.076)	-3.445 *** (-4.604, -2.286)	-3.167 *** (-4.053, -2.282)
<i>Age 85 +</i>	-6.152 *** (-7.893, -4.411)	-6.974 *** (-9.436, -4.512)	-6.671 *** (-8.025, -5.317)
<i>Income (log)</i>	-2.113 ** (-3.515, -0.711)	0.202 (-0.859, 1.263)	-0.679 (-1.520, 0.161)
<i>Education (ref: school-level)</i>	1.907* (0.412, 3.401)	1.359* (0.125, 2.594)	1.610 *** (0.658, 2.561)
<i>Homeownership (ref is homeowner)</i>	4.688 *** (3.375, 6.002)	4.466 *** (3.032, 5.899)	4.730 *** (3.771, 5.688)
<i>Wales (reference is England)</i>	-1.232 (-3.809, 1.344)	-0.036 (-2.356, 2.284)	-0.613 (-2.335, 1.109)
<i>Scotland</i>	-1.684 (-3.764, 0.397)	0.282 (-1.555, 2.118)	-0.661 (-2.034, 0.711)
<i>Northern Ireland</i>	-2.097 (-5.936, 1.741)	-2.961 (-6.559, 0.638)	-2.486 (-5.109, 0.137)
<i>Employment status (ref: employed)</i>	5.795 *** (3.242, 8.347)	3.210 *** (1.509, 4.911)	4.086 *** (2.664, 5.508)
<i>Ethnicity</i>	-0.639 (-6.172, 4.893)	0.313 (-3.797, 4.424)	-0.022 (-3.323, 3.280)
<i>Rural</i>	1.168 (-0.228, 2.565)	1.685 ** (0.607, 2.763)	1.533 *** (0.680, 2.386)
<i>Frequent travel by bus</i>	4.397 *** (3.126, 5.668)	3.565 *** (2.481, 4.648)	3.946 *** (3.122, 4.769)
<i>Frequent travel by car</i>	-1.001 (-2.613, 0.611)	1.803 (-0.472, 4.078)	-0.263 (-1.550, 1.024)
<i>Frequent travel by train</i>	2.424* (0.449, 4.399)	2.016* (0.408, 3.624)	2.164 *** (0.919, 3.409)
<i>Non-UK born</i>	-2.142 (-5.270, 0.986)	-2.630 (-5.306, 0.046)	-2.494* (-4.525, -0.462)
<i>Would like to move</i>	-1.076 (-2.710, 0.559)	-1.254* (-2.506, -0.001)	-1.132* (-2.127, -0.136)
<i>Volunteered in last year</i>	3.963 *** (2.441, 5.485)	0.942 (-0.233, 2.173)	2.187* (-2.127, -0.136)
<i>Regular internet use</i>	0.705 (-0.657, 2.067)	1.895 ** (0.701, 3.088)	1.379 ** (0.484, 2.274)
<i>Goes out socially</i>	3.626 *** (1.856, 5.387)	3.059 *** (1.430, 4.687)	3.476 *** (2.289, 4.664)
<i>Sees friends/family</i>	-0.325 (-4.030, 3.381)	2.373 (-0.723, 5.468)	1.208 (-1.162, 3.578)
<i>N</i>	1701	2223	3923
<i>Adjusted R²</i>	.187	.139	.178

*** $p \leq 0.001$, ** $p \leq 0.01$, * $p \leq 0.05$

β = Standardised coefficient, CI = Confidence Interval

5.4.6 Subjective wellbeing (reversed GHQ score)

Table 5.9 presents the results of the linear regression modelling on subjective wellbeing as represented by the reversed GHQ score. For both household groups three variables were found to be significant predictors of better subjective wellbeing: homeownership, employment status and going out socially (β 1.118 (0.732, 1.503), $p \leq .001$, β 0.881 (0.309, 1.454), $p \leq .01$, β 1.968 (1.490, 2.446), $p \leq .001$). These are factors which are well-evidenced in the existing literature as representatives of SES and societal roles (Victor and Scharf, 2005; Marmot et al., 2010).

For those who cohabit, the age group 75-84 when using 65-74 as a reference and wanting to move were both predictors of poorer subjective wellbeing (β -0.476 (-0.931, -0.020), $p \leq .05$; β -1.149 (-1.910, -0.927), $p \leq .001$). The age bracket is interesting and echoes previous research which highlights a complicated relationship between age and measures of subjective health or wellbeing: unlike physical health these tend not to be consistently worse with increasing age (Steptoe et al., 2015). Wanting to move as a measure of dissatisfaction with existing home or neighbourhood affecting wellbeing is consistent with existing literature (Barry et al., 2018; Marmot et al., 2020). It is interesting that as per subjective health, GP use and SF-12 PCS, wanting to move was only a predictor for those cohabiting. This is suggestive of differences between those who cohabit and those who

live alone in their relationship with housing or neighbourhood that would merit further research. Regular bus use was a predictor of better subjective wellbeing for those cohabiting but not for those living alone (β 0.726 (0.299, 1.152), $p \leq .001$), again indicative of a difference in the way in which wellbeing is shaped between the two household groups and consistent with existing research highlighting the importance of access to good amenities for older women (Grenier, 2005).

For those living alone, volunteering and seeing friends or family were both predictive of better subjective wellbeing (β 1.017 (0.391, 1.642), $p \leq .001$, β 1.700 (0.196, 3.203), $p \leq .05$) which are consistent with existing research pointing to the importance of social contact in maintaining wellbeing in later life (Pinquart and Sorensen, 2001; Hays, 2002). This supports the notion that for those who live alone, their external social networks play a more significant role in promoting wellbeing than for those who cohabit. Interestingly, regular internet use was found to be predictive of poorer subjective wellbeing (β -0.659 (-1.221, -0.096), $p \leq .001$). This might be that those who are experiencing poorer health and wellbeing overall rely on the internet in order to boost their social connection or may be that increased internet use can lead to poorer wellbeing depending on the purpose of this use. Research regarding the use of internet and its effect on the health and wellbeing of older adults is in its infancy but existing literature suggests internet use can moderate social exclusion and promote wellbeing, but

this is dependent on the context and use of the internet (Cotten et al., 2013; Sacker et al., 2017).

Table 5.9. Linear regression results predicting reversed GHQ Score (subjective wellbeing).

<i>Factors</i>	<i>Living alone</i> <i>β (CI)</i>	<i>Living with others</i> <i>β (CI)</i>	<i>Total sample</i> <i>β (CI)</i>
<i>Women living alone (ref: those living with partners)</i>	-	-	-0.257 (-0.656, 0.141)
<i>Age 75-84 (reference is 65-74)</i>	0.500 (-0.070, 1.070)	-0.476* (-0.931, -0.020)	-0.113 (-0.468, 0.243)
<i>Age 85 +</i>	0.537 (-0.182, 1.256)	-0.725 (-1.698, 0.247)	0.023 (-0.523, 0.569)
<i>Income (log)</i>	-0.407 (-0.977, 0.164)	-0.156 (-0.575, 0.263)	-0.187 (-0.524, 0.151)
<i>Education (ref: school-level)</i>	0.203 (-0.413, 0.818)	-0.271 (-0.759, 0.216)	-0.072 (-0.455, 0.311)
<i>Homeownership (ref is homeowner)</i>	0.940*** (0.397, 1.482)	1.249*** (0.685, 1.813)	1.118*** (0.732, 1.503)
<i>Wales (reference is England)</i>	-0.645 (-1.709, 0.419)	0.510 (-0.407, 1.426)	-0.079 (-0.773, 0.616)
<i>Scotland</i>	0.654 (-0.197, 1.505)	0.573 (-0.147, 1.292)	0.607* (0.058, 1.156)
<i>Northern Ireland</i>	0.006 (-1.572, 1.583)	-0.187 (-1.607, 1.233)	-0.061 (-1.116, 0.994)
<i>Employment status (ref: employed)</i>	1.291* (0.238, 2.345)	0.714* (0.043, 1.385)	0.881** (0.309, 1.454)
<i>Ethnicity</i>	1.009 (-1.271, 3.289)	-0.018 (-1.626, 1.590)	0.300 (-1.023, 1.623)
<i>Rural</i>	-0.041 (-0.618, 0.536)	0.303 (-0.121, 0.728)	0.200 (-0.143, 0.543)
<i>Frequent travel by bus</i>	0.506 (-0.018, 1.030)	0.726*** (0.299, 1.152)	0.628*** (0.297, 0.960)
<i>Frequent travel by car</i>	-0.487 (-1.153, 0.180)	0.420 (-0.483, 1.322)	-0.261 (-0.781, 0.260)
<i>Frequent travel by train</i>	0.144 (-0.663, 0.951)	0.077 (-0.561, 0.714)	0.090 (-0.411, 0.591)
<i>Non-UK born</i>	0.269 (-1.057, 1.594)	0.479 (-0.575, 1.534)	0.416 (-0.411, 1.243)
<i>Would like to move</i>	-0.587 (-1.266, 0.092)	-1.419*** (-1.910, -0.927)	-1.108*** (-1.508, -0.707)
<i>Volunteered in last year</i>	1.017*** (0.391, 1.642)	0.380 (-0.104, 0.865)	0.619** (0.234, 1.004)
<i>Regular internet use</i>	-0.659* (-1.221, -0.096)	-0.046 (-0.515, 0.422)	-0.317 (-0.677, 0.043)
<i>Goes out socially</i>	1.615*** (0.886, 2.345)	2.158*** (1.518, 2.799)	1.968*** (1.490, 2.446)
<i>Sees friends/family</i>	1.700* (0.196, 3.203)	0.641 (-0.577, 1.859)	1.093* (0.146, 2.040)
<i>N</i>	1704	2250	3953
<i>Adjusted R²</i>	.044	.066	.053

*** p ≤ 0.001, ** p ≤ 0.01, * p ≤ 0.05

β = Standardised coefficient, CI = Confidence Interval

5.4.7 Life satisfaction

The results of the binary logistic regression modelling on life satisfaction are presented in Table 5.10. For both household groups, wanting to move was predictive of lower levels of life satisfaction as with the SF-12 MCS (OR 0.543 (0.446, 0.662), $p \leq .001$). Regular bus use and going out socially were both predictive of higher levels of life satisfaction (OR 1.567 (1.301, 1.888), $p \leq .001$; OR 1.820 (1.453, 2.279), $p \leq .001$) both consistent with existing research demonstrating the importance of good transport links and social contact for better wellbeing in later life (Dwyer et al., 2000; Pinguart and Sorensen, 2001). For those who cohabit the two predictor variables found to be significant in predicting better life satisfaction were rural dwelling and homeownership (OR 1.481 (1.150, 1.909), $p \leq .01$ and OR 1.705 (1.283, 2.267), $p \leq .001$ respectively). These are both to be expected when considered in the context of previous research (Marmot et al., 2010; Burholt et al., 2018; Khan et al., 2018) but interesting that they were not predictors for those who live alone. This may be that those who live alone were less likely than those who cohabit to live in rural areas or own their property (see Table 4.2) therefore their expectations and alternative support mechanisms would be altered.

Those living alone had six variables which were predictive of their life satisfaction which differed to those who are cohabiting, suggesting significant variations in the factors which shape higher life satisfaction

depending on household composition. Regular internet use and higher levels of education were both found to be predictive of lower life satisfaction contrary to existing literature (OR 0.680 (0.508, 0.911), $p \leq .01$ and OR 0.721 (0.527, 0.987), $p \leq .05$ respectively) (Marmot et al., 2010; Cotten et al., 2013). This may be indicative of the divergent ways which differing life course transitions or social context can affect the ways in which these factors contribute to wellbeing in different populations (Grenier, 2005). Those factors which were predictive of higher levels of life satisfaction were: car use, train use, volunteering and seeing friends and family (OR 1.492 (1.072, 2.076), $p \leq .05$; OR 1.927 (1.175, 3.161), $p \leq .01$; OR 1.476 (1.045, 2.084), $p \leq .05$; OR 2.372 (1.261, 4.461), $p \leq .01$) respectively. These are all much more consistent with previous research and, as with GHQ for example, indicate that these social factors which indicate connectivity with community and friends play a more significant role in maintaining health and wellbeing for those living alone (Pinquart and Sorensen, 2001, Walker and Hiller, 2007).

Table 5.10: Logistic regression results predicting life satisfaction (high/low).

<i>Factors</i>	<i>Living alone OR (CI)</i>	<i>Living with others OR (CI)</i>	<i>Total sample OR (CI)</i>
<i>Women living alone - (reference is those living with partners)</i>	-	-	1.177 (0.948, 1.462)
<i>Age 75-84 (reference is 65-74)</i>	1.279 (0.952, 1.718)	0.871 (0.674, 1.125)	0.997 (0.822, 1.209)
<i>Age 85 +</i>	1.351 (0.929, 1.964)	0.762 (0.464, 1.250)	1.076 (0.803, 1.442)
<i>Income (log)</i>	1.158 (0.863, 1.554)	1.229 (0.957, 1.758)	1.281** (1.061, 1.547)
<i>Education (ref: school-level)</i>	0.721* (0.527, 0.987)	1.229 (0.909, 1.662)	0.936 (0.755, 1.160)
<i>Homeownership (ref is homeowner)</i>	1.174 (0.892, 1.545)	1.705*** (1.283, 2.267)	1.406*** (1.155, 1.712)
<i>Wales (reference is England)</i>	0.982 (0.576, 1.675)	1.155 (0.678, 1.969)	1.040 (0.715, 1.511)
<i>Scotland</i>	1.531 (0.936, 2.504)	0.802 (0.538, 1.197)	1.040 (0.765, 1.414)
<i>Northern Ireland</i>	1.176 (0.489, 2.827)	0.840 (0.380, 1.854)	0.999 (0.557, 1.793)
<i>Employment status (ref: employed)</i>	1.147 (0.657, 2.002)	0.768 (0.522, 1.129)	0.860 (0.628, 1.179)
<i>Ethnicity</i>	1.760 (0.501, 6.185)	1.028 (0.374, 2.825)	1.201 (0.550, 2.621)
<i>Rural</i>	1.215 (0.897, 1.646)	1.481** (1.150, 1.909)	1.381*** (1.139, 1.674)
<i>Frequent travel by bus</i>	1.557** (1.178, 2.058)	1.607*** (1.246, 2.072)	1.567*** (1.301, 1.888)
<i>Frequent travel by car</i>	1.492* (1.072, 2.076)	1.193 (0.759, 1.874)	1.301* (1.003, 1.688)
<i>Frequent travel by train</i>	1.927** (1.175, 3.161)	1.057 (0.711, 1.573)	1.368* (1.007, 1.858)
<i>Non-UK born</i>	0.899 (0.470, 1.720)	1.399 (0.706, 2.772)	1.178 (0.738, 1.880)
<i>Would like to move</i>	0.528*** (0.384, 0.725)	0.558*** (0.431, 0.721)	0.543*** (0.446, 0.662)
<i>Volunteered in last year</i>	1.476* (1.045, 2.084)	1.154 (0.855, 1.559)	1.258* (1.005, 1.574)
<i>Regular internet use</i>	0.680** (0.508, 0.911)	1.068 (0.823, 1.387)	0.879 (0.723, 1.068)
<i>Goes out socially</i>	1.652** (1.178, 2.317)	1.891*** (1.388, 2.577)	1.820*** (1.453, 2.279)
<i>Sees friends/family</i>	2.372** (1.261, 4.461)	1.372 (0.762, 2.472)	1.781** (1.170, 2.713)
<i>N</i>	1587	2424	4011
<i>X² (model)</i>	108.421***	128.353***	195.544***
<i>Cox and Snell R²</i>	.061	.055	.048
<i>Nagelkerke R²</i>	.098	.089	.077

*** p ≤ 0.001, ** p ≤ 0.01, * p ≤ 0.05, OR = Odds Ratio, CI = Confidence Interval

5.4.8 A note on endogeneity

Given that physical and mental health and wellbeing are closely linked (Ohrnberger et al., 2017), there is a chance that the outcome variables used in these regressions could be correlated with each other and therefore affect the results. In order to check for this, a series of regressions were run to check for endogeneity between the physical and mental wellbeing variables. The regressions were rerun for each of the seven variables and physical and/or mental health variables were included in the predictor variables. For outcome variables which measured physical health (SF-12 PCS, presence of a long-term health condition or disability), the SF-12 MCS was used as a predictor variable. For those which measured mental health or wellbeing (GHQ), the SF-12 MCS was included as a predictor variable. For those outcome variables which measured a more general health or wellbeing outcome (GP service use, life satisfaction, self-rated health), both SF-12 MCS and PCS were used. The results of this were not notably different for six of the seven outcome variables. The only notable difference was a change in the direction of effect of age on self-rated health. Once objective physical and mental health were included in the regressions, self-rated health actually improved with age, something seen in previous studies, possibly an effect of peer comparison in later life or as a result of those living to later life doing so because they are in better health (Giron, 2016; Zajacova et al., 2017). The results of the endogeneity test regressions for self-rated health can be seen in Appendix 4 for comparison with those in Table 5.6.

5.5 Discussion and conclusion

5.5.1 Summary of findings

The addition of new variables which considered lifestyle factors such as time-use or transport use provided further information about the health and wellbeing of older women who live alone. By examining these additional variables with the more well-established SES variables explored in chapter four, a better understanding of the phenomenon was gained. Tests of association indicated that the additional variables varied significantly between the two household composition typologies, suggesting that women who live alone differ in lifestyle and time-use to those who cohabit which in turn may affect their health and wellbeing (see Table 5.1). As may be expected, the additional variables were found to show significant associations with many of the health and wellbeing variables (Tables 5.2 and 5.3), confirming that factors such as time-use or community resources are associated with health as indicated by existing research (Van Wee and Ettema 2016).

The regressions allowed for a further examination of the effect of the predictor variables on health and wellbeing outcomes while controlling for the better-known effects of age and SES factors. By carrying out the regressions on the two household types separately, differences are noted between the ways in which predictor variables interact with the outcome variables for those who live alone and those who cohabit.

5.5.2 Variations between women who live alone and those who cohabit

For those women who live alone, regional variations were found to be significant predictors in some cases (GP use and SF-12 MCS) which was not the case for those who cohabit. While variations between the four UK regions are already recognised in the literature, it may be that those who live alone could be more likely to benefit from better services or to be more vulnerable to variations in service provision (Timmins, 2013; Bevan et al., 2014).

Homeownership and income tended to be more commonly a predictor of better health for those who cohabit than those who live alone. In some respects, this is surprising as it could be hypothesised that for those living alone, better SES would mitigate any disadvantages of lone dwelling. This does support the idea that women who live alone in later life may foster alternative resources in order to support their health and wellbeing (Walker and Hiller, 2007). This latter point is further supported in that volunteering was consistently found to play in predicting better health for those who live alone and not for those who cohabit. Interestingly internet use tended to be predictive of better health outcomes for those who cohabit (SF-12 MCS, SF-12 PCS and GP use) but poorer outcomes in those who live alone (life satisfaction and GHQ). These all point towards key variations in the ways in which

the health and wellbeing of older women can vary by household composition. Further research is required to understand the mechanisms involved and the variations in lived experience, but these findings are supportive of approaches to later life which acknowledge the variations in the ways which variables can accumulate to affect health and wellbeing. One example of this is a life course approach discussed in more detail in chapter seven.

5.5.3 The role of volunteering and employment

The most notable finding for those women who live alone was the predictor variable volunteering. For six of the seven regression outcome variables (with the exception being GP use) volunteering was a predictor of better health and wellbeing for women who live alone but not for those who cohabit. Table 5.1 suggests that there were not significant differences in the rates of volunteering between the household groups. This could indicate that those who live alone tend to only volunteer when they are in better health, or it could suggest that the benefits gained from volunteering are more significant for those who live alone. Existing literature points to the benefits of volunteering in later life (Okun et al., 2003; Burr et al., 2011; Nazroo and Matthews 2012; Griep et al., 2017) and, as women who live alone may be more susceptible to social isolation, it could be suggested that by engaging in volunteering they are accessing social contact which is often associated with the labour market (Victor and Scharf, 2005). It

may also be that by contributing to community life and the labour force, volunteering may boost self-worth in post-modern society which can devalue later life post-retirement (Estes et al., 2003).

Finally, it is important to note that there are differences in the health and wellbeing as well as the financial status of those who volunteer. Those who volunteer have been shown to be wealthier and are more likely to be in better health to begin with. This places those who can engage in voluntary work or other civic activities in a privileged position and creates tensions for those who are perhaps unable to participate (Katz, 2020). The value placed on voluntary work in later life as a means of fostering a sense of worth also creates a tension in that it reproduces the values of productivity from the workplace into retirement (Holstein, 2018), something which may be more difficult for women who are often engaged in unpaid care work (Calasanti, 2002). There are also variations in the uptake of volunteer work which have not been fully explained by external factors such as wealth or health and which may complicate the effect of volunteering on health and wellbeing (Martinson and Minkler, 2006; Nazroo and Matthews, 2012; Plagnol and Hubbert, 2010).

5.5.4 Internet use and older women

Another notable finding was the difference in the way in which internet use predicted the health and wellbeing of older women. For those who

live alone, frequent internet use predicted poorer life satisfaction and mental wellbeing as measured by a reversed GHQ score. However, for those who cohabited, frequent internet use was found to be predictive of better health outcomes in terms of GP use, and both SF-12 scores. Firstly, it should be acknowledged that the relationship between health and internet use is likely to be reciprocal and complex. For example, those with poorer health may use the internet more to compensate for reduced community mobility, or they may use it less as poorer health may limit access to resources. Good health may enable better access to support with technology and use or it may, for some, negate the need for regular internet use if social or information needs are met elsewhere. The existing evidence has yet to clearly demonstrate the ways in which internet use is related to health and wellbeing in later life (Cotten et al., 2013; Sacker et al., 2017; Walkner et al., 2017). What is particularly interesting for this study is that these results indicate a distinct difference for older women who live alone and are suggestive of important variations in the ways in which one lifestyle element can affect the health and wellbeing of those living alone in a different way to those cohabiting.

5.5.5 Location, neighbourhood, and community

One final area for discussion is that of location, neighbourhood, and community. These are represented in the regression analyses by the

variables: region; urban/rural and wanting to move (see section 3.3.4b for details and descriptions of these variables). There is a well-established literature on ageing-in-place and the importance of place in shaping how we age (Toma et al., 2015; Gibney et al., 2020; Shim, 2019). As more recent models of healthy ageing are placed in a community context (as opposed to institutional care), the interest as to the nature and quality of this context is increasing (Wahl and Weissman, 2002; Gileard and Higgs, 2005).

The findings presented in this chapter indicate variations in the ways in which older women may experience place in later life: either geographical region, home, or neighbourhood. The variable 'wanting to move' is not specific as to the reason and so may reflect dissatisfaction with home, community or location but interestingly was never found to be a predictor of health for those living alone. So too with rurality, which was mainly found to be a predictor of better health for those who cohabit (life satisfaction, SF-12 PCS, SF-12 MCS). UK regions were only found to be predictive of health outcomes for those living alone and not for those cohabiting (GP use, SF-12 MCS). These results suggest that, in living alone, older women may develop different uses for, or relationships with, their local community and the associated amenities which in turn affect the way that they age in place. The importance of the local community and support resources are highlighted in these results. However, the complex interplay of factors affecting the health and wellbeing of older women requires

further research to understand how women who live alone can be best supported into later life.

5.6 Summary of the chapter

The results presented in this chapter indicate that there are variations in the health and wellbeing of older women living alone when compared to those who cohabit. Tests of association and logistic and linear regressions were carried out which indicated important differences in the health and wellbeing of older women depending on whether or not they live alone. By analysing the data separately by those living alone and those who cohabit, variations between the two were found. The findings from the statistical analysis were presented in detail and allowed an examination of the ways in which different demographic, lifestyle and time-use variables affect health and wellbeing. These findings were then discussed in relation to existing literature in order to frame the results in an empirical and theoretical context. Suggestions for further research were made based on the findings. Particular areas of interest are those of work, especially volunteering, and also local amenities, community access or support networks and how they contribute to health and wellbeing in later life.

The process of ageing and the quality of later life is affected by many factors with complex interactions. This chapter adds to the existing knowledge regarding the health and wellbeing of women in later life by

presenting novel findings which indicate ways in which predictors of health and wellbeing vary between older women depending on their living alone or cohabiting. The health and wellbeing of those older women who live alone in the UK is complex and multi-faceted. In order to complement the broad statistical analysis of national survey data presented in chapters four and five, the next chapter presents the analysis of qualitative data using Interpretative Phenomenological Analysis.

Chapter 6

Experience of older women living alone in the UK - health and wellbeing issues: An Interpretative Phenomenological Analysis

In order to provide complementarity to the quantitative analysis set out in the previous two chapters (chapters four and five), qualitative data and analyses were chosen as the most suitable means of answering the latter two of the four research questions addressed in this study. As set out clearly in Section 3.4.2, research questions three and four were deemed to be suited to qualitative methods and this chapter presents the data and analysis in answer to research question three:

What are the experiences of older women living alone in the context of health and wellbeing in the UK?

Research question four is answered in the subsequent chapter (chapter seven). This current chapter presents the results from an Interpretative Phenomenological Analysis (IPA) of seven interviews carried out between May and October 2020. Fuller details of the data gathering methods can be read in Section 3.5.4.

The interviews were carried out during the Covid-19 pandemic. In the UK, national lockdowns restricting contact between households were put in place from March 2020, to limit the spread of the disease. The

interviews were carried out between July and October 2020, a period between lockdowns when household mixing was allowed with social distancing. Infection control procedures as advised by the government were followed. Interviewees were given the choice of face-to-face or telephone interviews or the use of video-conference technology. Six of the interviews were carried out face-to-face and one using video-conferencing technology. More detail of the logistics and precedent for this is discussed in section 3.5.4. The Covid-19 pandemic affected several aspects of the study. The method was adapted to deal with practicalities, such as offering video conference or telephone interviews and adhering to social distancing guidelines, but the pandemic also affected the content and focus of the interviews. As households were generally banned from mixing under the government guidelines, the women interviewed were experiencing a very different lifestyle to that which they usually led. The experiences shared are therefore reflective of this period in UK history and the reader should bear this in mind when considering the findings, the implications of this are considered in more detail in section 8.4.

Demographic details of each participant are given in Table 6.1, clearly summarising the seven women and allow a comparison of their demographic and socio-economic information. The findings of the statistical analysis presented in chapter five indicate the role of volunteering as being particularly important for women who live alone. Volunteering as an aspect of civic engagement is particularly pertinent

to UK and global policies around active ageing and is an important theme within a critical feminist gerontological framework (World Health Organization, 2018; Jenkinson et al., 2013; Martinson and Minkler, 2006). Therefore, participants were sought who were active in their local community. As is usual with such research (Eatough and Smith, 2017; Marshall and Rossman, 2015), the sampling ensured a relatively homogenous group which is reflected in Table 6.1. Rationale and precedent for sampling can be seen in Section 3.5.3.

A summary of how the final themes were elicited from the data can be seen in Table 6.2. This table illustrates the process of analysis from the individual transcripts to the superordinate themes. Supporting material from the transcripts are used throughout to ensure transparency and as an assurance of quality (Levitt et al., 2018). Following this, Table 6.3 summarises the superordinate themes of *Productivity*, *Ownership* and *Interconnectedness* and then details of sub themes which are described more fully in Section 6.2. A more detailed description of the IPA process can be seen in Section 3.5.5, and an explanation of the quality assurance methods used are given in Section 3.5.6.

The chapter concludes in section 6.3 by contextualising the findings of the analysis within the existing literature. This allows for a demonstration of the relevance of the results and highlights the

contribution to the field, enabling a level of theoretical generalisability as put forward by Smith et al., (2009).

6.1 Characteristics of the participants

Table 6.1 presents the demographic and socio-economic details of each of the seven participants alongside their pseudonyms, given to preserve anonymity (see Section 3.5.6). As can be seen, the sample is relatively homogenous in terms of ethnicity and age: all being White British and within what is often termed the 'young-old' age group (British Medical Association, 2016). Given that the aim was to interview women who were active in volunteering or in their local community this age group is perhaps not surprising. It may also be reflective of the recruitment strategy used (see Section 3.4.3). The exclusively White British ethnicity could be a reflection of the recruitment method or of the smaller absolute numbers of women from black and minority ethnic backgrounds who live alone within the UK (illustrated in Section 4.1).

There was some variation in the level of education which ranged between school level and Masters' level. In terms of employment, the participants were all retired from their primary, full-time paid employment which had without exception been of a white-collar type. Volunteer work had been affected by the Covid-19 pandemic which was ongoing at the time of interview but five of the participants remained involved in voluntary activities to some degree and one more

intended to seek out voluntary opportunities once it was suitable to do so. The only one of the participants who did not own her own home, Cathy, resided in a property owned by the religious order to which she belonged. This appeared a secure arrangement which seemed comparable to own-ownership in terms of stability but perhaps alleviated some of the level of responsibility expressed by the other participants in their management of the home.

The reasons for living alone varied and perhaps reflect the range of circumstances demonstrated by the quantitative data in Section 4.1. Only one of the participants, Cathy, had actively chosen to live alone, the rest were primarily widowed or a surviving partner and therefore living alone was out of necessity. The remaining participants found themselves living alone as a result of varying life circumstances. Denise was single, and Diane had recently separated from her partner. The time living alone varied between 10 months and 20 years. The following sections explore in more detail the individual experiences and the convergences and divergences between them, structured within the three superordinate themes.

Table 6.1: Demographic details of qualitative study participants.

<i>Name (pseudon</i>	<i>Age</i>	<i>Marital status</i>	<i>Housing tenure</i>	<i>Level of</i>	<i>Ethnicity</i>	<i>Volunteeri ng status</i>	<i>Time living alone</i>
Denise	65	Single	Owner occupied	PG Dip	White British	Volunteering	28 years
Cathy	80	Single	Rented Privately or with a job or business	MSc	White British	Volunteering	20 years
Wendy	73	Widowed	Owner occupied	School level	White British	Volunteering	4 months
Angela	74	Widowed	Owner occupied	School level	White British	Not currently volunteering	10 years
Diane	74	Separate d	Owner occupied	BA	White British	Volunteering	<1 year
Kim	74	Surviving Partner	Owner occupied	MSc	White British	Volunteering	7 years
Janet	66	Widowed	Owner occupied	School level	White British	Has not volunteered	<1 year

6.2 The development of the themes

Table 6.2 presents a summary of the analysis of the data from each individual interview. The analysis of each interview is supported using illustrative quotes from the data in order to show how the themes were developed. These quotes are presented verbatim with the exception that identifying data have been altered in order to preserve identity. The three superordinate themes from the analysis were *Productivity*, *Ownership*, and *Interconnectedness* and each of these had several subthemes which are presented in Table 6.3. In this section these themes are discussed in more detail in the context of the existing literature, the theoretical framework of feminist gerontology and the quantitative data presented in chapters four and five. This allows for a theoretical generalisability suited to IPA (Smith et al., 2009).

Table 6.2 Process of thematic development

<i>Emerging themes</i>		<i>Subthemes</i>	<i>Support from data</i>
1 Denise	Productivity	Purpose / role / volunteering / contributing / quality	...made me think what, what purpose have I got? I don't work, I don't...but volunteering is so important I would really say to anybody looking to retire, find something you enjoy doing and see if you can't volunteer in that
	Continuity and adaptation	Covid-19 as interruption / technology / trying new things /volunteering at care home	I've promised the care home my mother was in that I will go in and help them with video calls
	Connections	Family / friends / neighbours / community	So we did sort of prop one another up a lot of sending of flowers y'know which was nice actually, even though we're far away
	Ownership	Gratitude / active / health checks / choice and control	But I definitely planned for retirement and I think U3A is a little bit of a setback but I'm not too worried cos I, I have got the gym I've got the potential of doing more cycling and so obviously it all depends on me staying fit and well...but erm...I'm not er I'm not going to take up knitting I'm not that sort of a person
2 Cathy	Work	Religious / community / psychoanalyst	I'm a sister in a religious order ... we work in the community ... And for about my second career I trained as a psychotherapist
	Gratitude	Opportunities / space / location	I go for a walk for about an hour and a half ... I mean I couldn't be better placed, I really couldn't be better placed to be honest
	Interconnectedness	Community / friends / family / support	but I continue to live here but anyway really because I'd sort of made my community contacts here.
	Self-awareness and ownership	Active attitude to health / health checks / psychoanalysis	I had cancer when I was 41, 42 ... fortunately there was psychological help around so I got, I probably got and it got me into knowing about myself cos I think mental health is, of course I think mental health is important but I think self-knowledge is terribly important.

3 Wendy	Productivity	Progress / volunteering / garden / structure	And so, I'm sort of because I was busy and I had the gardener and I've been painting all my fences yknow I've been trying to well I was basically I had no lawn ... So I was doing all this I thought I'm going to finish it for you Nigel even though you're not going to come home... So that's been a project kept me going.
	Self-efficacy	Health / travel / admin	I've done a lot of things on my own, I've been, been on holiday with friends and coach trips with my sister and made new friends
	Support and connectedness	GP / loss of husband's support / friendships / family	you never actually been on your own as a person and I thought, I know what I like and what I don't like but then I think the panic attacks are partly, not so much cos I'm on my own, it's the responsibility of...making a decision, and not having someone to run it by
	Limbo	uncertainty re: future / decision making / Covid-19 as interruption / grief	So...yeah I suppose I don't know maybe I'll tell you in a years' time what adjustments I've made and what I've decided is not um of any use or beneficial to me...yeah
4 Angela	Connectedness	Sons and grandchildren / carer / local area / friendships / voluntary work	My granddaughter was on the phone or texting about an hour everyday um I've got other friends who are obviously in the same situation so we were all keeping in touch, contact, sometimes by face ... not Facebook when you look at each other on the screen ... Facetime that's it. Um so we were all sort of grumbling together if you like
	Choice versus Decisions	'Taking the plunge' / Momentum / 'dithery'	...but you just have to take a deep breath and take the plunge otherwise you just do nothing I think...
	Need to adapt versus continuity	'Kept going' / adjusting after bereavement / adapting during Covid-19 /	... and it was devastating for, well, for all of us really. But as I say I've got through it a bit and you just have to make a different path for yourself I suppose
5 Diane	Loss and adjustments	Repeated losses / break-up / diagnosis / support / Covid-19 as another loss	And I lost all the volunteering job cos they all shut obviously and all this meeting friends, my whole life in fact I lost. All that. As if I hadn't already lost enough I just lost everything else on top...yeah

Loss and adjustments	Repeated losses / break-up / diagnosis / support / Covid-19 as another loss Handyman / security / running a house	And I lost all the volunteering job cos they all shut obviously and all this meeting friends, my whole life in fact I lost. All that. As if I hadn't already lost enough I just lost everything else on top...yeah
Practicalities		I've just spent about three days trying to change a lightbulb, [both laugh] finally managed it but with a lot of angst. Well I can't reach it and I had to stand on something and my balance isn't at its best and they didn't make the lightbulb anymore and a very difficult cover to get off...took me days finally but I did it in the end.
Asserting control	Choice and quality of activities / engagement in health promoting activities / resistance at health limiting lifestyle	And that's the only one, I've looked at their art group and its...nooooo not for me, I could teach one of their art groups but I'd rather not have the responsibility at the moment.
Structure and motivation	Need for external structure / Covid-19 as interruption / classes / volunteering	I'm not motivated I am a designer by nature which means fulfilling a brief and so if somebody doesn't ask me to do something I sort of why, why would I? ... so I don't do much unless I go to a class so I'm a member of various groups and that's what I would normally do but as they're not going at the moment I'm not doing anything...
Change and continuity	Progress / Covid-19 as change / change within Covid-19	I went to a hotel I know, cos every year I go down for the tennis which is at the end of June before Wimbledon and so I know the people on the hotel and they know me. You didn't get the tennis crowd of course, weren't down there, yes it was nice, I had my usual room which was familiar
Support	After bereavement/ local group / friendships / practical tasks / 'grim' during lockdown	um but my local group here took me in hand and every day one of them would look after me in a way and take me somewhere or give me a meal you know they were great
Freedom versus difficulties with decision making	Decision re: moving / holidays / choice	... of course I'm wondering what will happen cos then I will be 77-78 if I'm going to be too old to actually be part of that community, and would I rather stay here

7 Janet	Absence	Husband / retirement / role / structure	it was a real struggle and then coming home to an empty house, which I do now anyway, which is why I'm out all the time. I'm, I have to take myself out round the shops.
	Life on-hold	Decisions / downsizing / low motivation / decluttering	I've got to do something, but I don't know what I am going to do... But there again it's up to me, in the end. No-one can tell me what to do
	Finding new ways to look to the future	Support from stepdaughter / plans to move / options 'I could do that'	... and Jane kept saying get yourself a gardener. So, she arranged it, she's brilliant his daughter my stepdaughter, brilliant so I've got this Richard fellow who comes when I text him and he came the other week and he cut the lawn

Table 6.3: Summary of final themes.

Theme	Subthemes
Productivity	role/structure/purpose/routine/absence
Ownership	choice/health/decision making/practicalities
Interconnectedness	continuity/ruptures/adaptation/reciprocal

6.2.1 Productivity

As can be seen in Table 6.3, the theme of productivity encompasses several ideas relating to work or occupation and includes both the presence and absence of such activities. In this context the theme of productivity relates to an activity which may be considered productive as opposed to leisure or self-care. Volunteering, paid work, housework or unpaid care work may all fall under this category. For all seven of the women this was present to some extent providing a convergence of experience. Divergences were notable in how this sense of productivity manifested and the ways in which it appeared to relate to health and wellbeing. This is consistent with existing literature which highlights the value of continued engagement in later life in an occupation of sorts whether volunteering or lifelong learning (Etienne and Jackson, 2011; Jenkinson et al., 2013; Galenkamp et al., 2016). The types of productivity the women discussed included some household tasks such as cleaning or gardening in addition to volunteering, or community work. Some of the unpaid work, such as

Angela's care work for a friend's son, may not be considered volunteering as it is an informal arrangement but nevertheless provides a similar function in terms of providing a role and structure, separate from financial remuneration. The benefits of participating in such activities are well documented, even when outcomes are controlled for initial health status (Okun et al., 2013).

Several women acknowledged the advantages of volunteering themselves, stating that '*you get the benefit*,' (Wendy). Angela went so far as to describe the choice to volunteer at her local hospital as '*selfish*,' as she understood herself to be benefitting from the activity, perhaps wanting to downplay any ideas of 'do-gooding'. This might also reflect a value judgement in terms of the types of work a person does, and the value attached to it, something which can be addressed within the context of a feminist gerontology. This approach critiques the idea of a person's value being established via their role as a productive member of society especially in terms of being a member of the labour market within a capitalist culture (Estes, 2004). This is particularly relevant for women who are often engaged in care work or household work which is devalued under this system (Bozalek and Hooyman, 2012; England, 2005).

The role of activity in general was also interesting in terms of providing a structure to days and weeks when paid employment no longer did

this. This included classes, meeting friends, attending galleries, or engaging in community work. Cathy and Denise both spoke of having routines which gave shape to their lives but also contributed to their sense of self and identity, confirming that which is already demonstrated in the literature in terms of the value of an 'occupation' (Unruh, 2004; Schnittker, 2007). The development of new routines, especially following the loss of a partner, was something which was important for several of the women and is consistent with previous research (Davies et al., 2016). This was highlighted by the experience of Janet who was yet to establish this for herself and consequently found herself in a sort of limbo following the loss of her partner and the decision to retire.

This sense of life being 'on-hold' was present for all women in some form due to the Covid-19 pandemic. This disease in the first major disruption of its kind in the UK for many years, certainly within the participants' lifetimes. The lockdowns enforced by the UK government, as with many governments worldwide, in order to limit the spread of the disease meant that most people were expected to remain at home except for essential shopping or exercise. This meant that the volunteering and other community activities were on hold for these women and so too their structure and purpose. Emerging evidence from the Covid-19 pandemic period suggests that the cessation of volunteering has had a negative impact on wellbeing for both the volunteers and the recipients of services (Grotz et al., 2020). Angela

and Diane had significant health problems and were advised to remain isolated to reduce their risk but found the adverse impact on their mental wellbeing such that they negotiated a way of going out for walks during quiet times of the day. While the Covid-19 pandemic is a particularly extreme example of a disruption to routine and productivity it does highlight the value of engaging in activities, especially activities out of the home, in order to contribute to health and wellbeing.

6.2.2 Ownership

The theme of ownership encompasses several aspects of ideas around taking control or making decisions and reflects both positive and negative facets of this. The idea of choice refers to the desire and ability to make choices around time-use, the people one spends time with or even where to live. This is commensurate with much of the literature in that a sense of choice over one's situation or aspects of one's life were related to increased wellbeing (Cederbom et al., 2014; Eshbaugh, 2008; Hammerstrom and Torres, 2012; Letvak, 1997). This was something which was discussed in all the interviews and was central to several of the experiences shared. Cathy's decision to seek out the opportunity to live alone is central to her experience and enjoyment of this phenomenon. Denise and Diane both express a strong desire to exert choice over their time-use and this increases the value of the activities they undertake. The other side to this is that there are situations in which choices are limited or not available. This could

include the reasons for living alone which was not an active choice for any except Cathy or a limitation on options such as those imposed by the national lockdowns relating to the Covid-19 pandemic. Although these are extreme examples, they illustrate how a loss of control or choice over a situation had a negative effect on wellbeing.

Another aspect of this idea around choice and ownership is the sense of indecision it presents when a person has options to choose from or decisions to make but finds it difficult to pick the 'right' one. This was often coupled with a situation in which these choices were not perhaps the preferred ones, such as the options around downsizing for Janet and Kim which were essentially related to their bereavements. Aside from the connection with a bereavement itself, it also seemed to be that much of the difficulty around making a decision, was related to their loss of a partner-as-confidante with whom decision-making was often shared. This seems to indicate a stressor for those living alone which may not be experienced in the same way by those cohabiting.

Additionally, this idea of ownership related to difficulties and stresses experienced as a result of managing and running a home alone. The relationship between environment and wellbeing is well documented (MacIntyre et al., 2003; Tomaszewski, 2013) and these women were all in secure and appropriate housing. All owned their own homes except Cathy whose property was owned by her employer, and she

appeared to experience the least concerns around managing a home, perhaps due to the support the employer would provide with this, without the insecurity of renting. For the other six women, issues around housing maintenance or DIY tasks seemed to present a stressor either in executing the tasks or managing to find someone trustworthy to come into their home. This is something which has been seen in some studies, but which is underexplored in the literature (Barry et al., 2018). Difficulty taking ownership with some of the practicalities of running a home was common to many of the experiences shared in these interviews and illustrates a challenge to a sense of self-efficacy. Throughout the interviews, these situations were stressors to women who had been successful in other aspects of their life such as employment or childrearing and as such appeared to negatively affect their wellbeing, something which can be seen in previous studies (Cederbom et al., 2014; De Leon et al., 1996) but which could be explored further in terms of ways in which to promote wellbeing through enabling a sense of self-efficacy.

Finally, several of the women presented experiences in which the sense of ownership was related to an active engagement in health promotion or maintenance. By taking control of aspects of their lifestyle which affect their health and wellbeing, they sought to further protect their health and independence in later life, reflecting much of the literature around health or active ageing (WHO, 2016). Cathy spoke in

detail of watching what she ate and taking regular exercise in order to ensure bowel health:

...every morning I take what I call my seeds, these are linseeds, I take linseeds I mean a lot I put them into my porridge um and by and large with, with good activity so long as I do enough walking and that's probably why I do like walking cos it keeps, keeps the system my system emptying because I'm very uncomfortable if it doesn't...um I, I, I, I'm OK I tend to have a weakness for headaches, I'm hoping I haven't got a brain tumour or anything um um but I think it's about a migraine I do take, I do have some medication... 420-424.

Angela and Diane, who experienced rheumatoid arthritis and systemic scleroderma respectively, both acknowledged an awareness of needing to manage their conditions through methods such as medication adherence or modifying activities:

I try to eat more - little and often rather than big meals. For obvious reasons, my digestions not quite so good so I just oh I'm just constantly trying to keep my weight up, cos I'm really underweight, and I'm supposed to see various specialists about 3 times a year, but it hasn't really made it made more difference to my mind than my body cos its quite scary basically. And because I'm susceptible to that sort of thing... 166-170 [Diane]

...I used to go to the theatre an awful lot, but I can't...sit for the length of time...um I get this neck ache...and I miss that a lot. I mean I know you can't go at the moment, but I haven't been for about three years and that is one thing...I really do miss going to the theatre...399-401 [Angela].

Others who reported good health, such as Kim or Denise, actively sought to maintain this through exercise and diet, with Denise hoping to avoid the need for any 'tablets.' This is contrasted with the experience of Janet who seems to be less concerned about this aspect of her lifestyle but acknowledged it as an area of her life in which she should make changes. As White middle-class women, the participants are perhaps in a subgroup of the population who are in situations which enable them to make such choices. This tension between one's ownership over health and the influence of political, social, and cultural context is one which may be less evident in such a sample, but which needs addressing (Estes et al., 2003). Exploration of other groups of older women would be particularly useful in this regard to explore the cultural and contextual variations likely to exist as lifelong inequalities challenge this active ageing approach (Van Dyk, 2014; Craciun et al., 2015).

6.2.3 Interconnectedness

The final theme of interconnectedness presents both as a presence and an absence, much like the other two themes. All seven of the women seemed to have robust social networks, particularly in terms of friendship groups. Research often focuses on familial support in later life, but evidence is growing that friendships are often of equal if not greater importance and this is something especially relevant for women who live alone (Blieszner et al., 2019; Fiori et al., 2006). The women all had social connections which they maintain across time and geographical boundaries. The recent Covid-19 pandemic provided a challenge in this respect but the use of internet-based technology such as Zoom, FaceTime and email helped to provide a sense of continuity in connectivity and support. This appeared to benefit the wellbeing of the women as they described experiences whereby the use of technology had enabled them to promote wellbeing through social connection which seems in contrast to the results of the statistical analysis described in chapter five (Section 5.4.6). They did, however, report some misgivings and frustrations with aspects of technology: Denise describes missing see people in real life, Diane describes her frustration with features of Zoom as does Kim and several women expressed preference for telephone calls:

I've always liked emailing. I'm not very good at phoning. I've got a fair old selection of friends, so we kept that up. I just don't get on with Zoom

– sorry! – I just don't get on with Zoom at all. There was an offer of various classes I also paint but I can't, I can't be doing with Pilates or painting or anything like that online... 122-125 [Diane]

... mmm. I don't like Zoom I, I...it's nice to see people isn't it? But I find it quite hard to concentrate you know by the time your free 45 mins are over, I've had enough really! I don't want to go on any longer than that. Also, if people – if there's a group of people there are one or two you don't like you can go off and talk to someone else, now on Zoom you can't, you're stuck with these people... 65-67 [Kim].

This mixed approach to technology and the resulting sense of connection reflects the contradictory results of existing research which exist regarding the use of the internet by older adults (Cotten et al., 2013; Kobayashi et al., 2015; Lifshitz et al., 2018; Shim et al., 2018). It seems clear that there are certainly benefits to the use of internet and related technologies but that this varies depending on the purpose, frequency and whether it is attempting to replace or augment more traditional social contact.

Covid-19 was not the only event which caused ruptures to social contact. Most obviously, bereavements, especially the loss of a partner were also significant and had a result on wellbeing. Both Denise and Wendy experienced bereavements (of their mother and

husband respectively) during the first Covid-19 lockdown which compounded the sense of rupture. Rules at this time in the UK limited the size of gatherings and this affected their ability to carry out the planned funeral arrangements they had expected. This experience seemed detrimental to wellbeing on several levels. While they accepted it as necessary to stop the spread of the disease, they expressed a sense that their ability to grieve was affected and that the process of carrying out a funeral with so little presence of friends and family made the experience all the more distressing. Other interruptions included the ending of relationships such as Diane's experience of a relationship ending after 40 years. This was, in many ways, a loss which echoed those of widowhood but was complicated both by emotions such as rejection and by the fact she was still in touch with her ex-partner. This required her to engage in a period of adaptation, in which she was still engaged, as she tried to renegotiate the relationship and whether it was beneficial to her or not.

The sense of adaptation in terms of maintaining connectivity was consistent throughout the accounts given by the women. In addition to the uptake of technology use during Covid-19, changing events over life courses meant that a level of flexibility was required to maintain friendships and other social contact. Several women had friendships spread across the UK and the globe which they maintain through emails, phone calls and visits. Wendy described friendships which she had kept up since her schooldays including one man for whom she

was now Power of Attorney. Denise experienced changes in friendships over the years notably if friends became newly single or married which affected the dynamics of their relationship. Throughout the interviews there was a sense of openness to dealing with these changes which was associated with maintaining valuable support networks. Another example of adaptation is the use of volunteering or organised social groups such as the University of the Third Age to provide social connection, especially in retirement. This is consistent with evidence which suggests that there is a shift towards formal social activities in later life, perhaps in order to compensate for reduced informal activities: although for many of the participants it appeared complementary rather than compensatory (Ang, 2019). Denise and Diane described a deliberate joining of such activities to promote their mental wellbeing. All the women expressed a need to engage in activities outside of the home, suggesting their wellbeing was the better for it. This is consistent with existing literature which suggests that women are more likely to engage in social activities than men and that they benefit from social activities, particularly those out of the home, in terms of their health and wellbeing (Gagliardi et al., 2007; Kizony et al., 2020). Volunteering as a route to social connectedness is well-recognised and there is a sense that while the women were supported by good social networks, they valued the sense of reciprocity gained by providing care or support to others. This sense of reciprocity within social networks has been shown in the literature to improve wellbeing when compared to those just receiving support

and has led to an increase in interest in encouraging volunteering as a health promotion or public health issue (Jenkinson et al., 2013; Zaninotto et al., 2013).

In addition to formal volunteer work, Angela had also been involved in providing unpaid care for a friend's son as well as regular time spent with her grandchildren. This provision of unpaid care in later life is a complex one. There is certainly a value in this work for providing a role or structure as discussed in Section 6.2.1 and in promoting social connectedness (Quirke et al., 2019) but there are concerns, particularly in critical thinking, that care work generally falls most often to women and is undervalued with a risk of detrimental effects to wellbeing (England, 2005; Minkler and Holstein, 2008). This suggests that for older women particularly, more research is required into volunteering or more informal unpaid work as determinants of health and wellbeing.

6.3 Summary of the chapter

This chapter presented findings from the Interpretative Phenomenological Analysis of seven interviews carried out in order to increase knowledge of the experience of living alone as an older woman in the UK. Carried out during the Covid-19 pandemic in 2020, the interviews provide an insight into the phenomenon of living alone as an older woman at a unique time in UK history. Despite the unusual

circumstances, the experiences reflected many of the themes which arise in the existing literature, giving credence to the results and the commonality of human experience.

Each of the individual experiences were presented in turn in accordance with the idiopathic commitment of IPA. From the individual experiences, convergences and divergences were identified and three final themes emerged from the data. The main themes identified were *Productivity, Ownership, and Interconnectedness*. These themes have been discussed within the context of the data and existing literature and some areas for future research highlighted. The homogeneity of the group is a key part of the IPA approach and can therefore not be viewed as a limitation of the study, however, one area for further research is examining the experiences of other subgroups of older women, particularly those living in poverty or those from Black and minority ethnic backgrounds. Volunteering and unpaid care work is a topic requiring further investigation as the relationship between 'work' in this context and health and wellbeing appears a complex one, especially considering debates around the politics of care and the political economy of ageing (England 2005; Estes, 2004).

Another area for consideration is how life course factors and disadvantages can cumulate in later life to shape health and wellbeing. This is particularly relevant when considering the data in a critical

feminist gerontological framework, considering the wider political, cultural, and financial contexts in which ageing takes place. These contexts can facilitate or limit individual choices and in turn shape health and wellbeing in later life. The next chapter presents an analysis of the seven interviews using a Critical Narrative Approach (Langdridge, 2007) in answer to this.

Chapter 7

Life course factors of older women and their experience of living alone in later life. A Critical Narrative Analysis

This chapter presents the results of a Critical Narrative Analysis (CNA) recommended by Langdridge (2007) in answer to the fourth and final research question:

How do life course trajectories affect women who come to experience living alone in later life?

The existing literature indicates the importance of considering life course events when examining the experience and quality of later life as events throughout the life course can continue to be felt into older age (Brotman et al., 2020; Van der Linden et al., 2020). This is particularly relevant when considering the topic from a feminist gerontological perspective as described by Holstein and Minkler (2003). This approach examines the ageing process and later life through an intersectional lens in which political-economic factors and societal expectations and norms can affect the nature of later life for women (Biggs, 2001). The use of CNA allows an alternative reading of the narratives of experience shared in the seven interviews, to consider life course factors and extend the findings from the interviews. CNA acknowledges the individual experience before

considering the phenomenon within a broader critical context by using a critical hermeneutic through which to examine the text. This thesis has used the lens of feminist gerontology throughout, to frame thinking and to critically evaluate aspects of ageing for older women who live alone. In this chapter the approach is used as the hermeneutic with which to examine the data, bringing together the components of phenomenology, life course narratives, and a critical thought process in order to understand the individual experience more fully. A fuller discussion of the background and rationale for the use of CNA and the chosen hermeneutic of feminist gerontology can be found in Sections 3.5.2b and 3.1, respectively.

The chapter starts (section 7.1) by outlining the six stages of CNA as described by Langdrige (2007). The results of the six stages of the analysis are then described. This starts with a reflection of my own thoughts and assumptions brought to the analysis and a consideration of how these may influence the process. This is followed by accounts of each of the individual narratives which incorporate stages two and three of Langdrige's approach by exploring the narrative tone and functions within the interviews and a consideration of the identity of the participants. The thematic priorities from across the narratives are set out in Section 7.6 which presents the themes and describes how these relate to each of the women. All of the thematic development is supported by verbatim quotes from the interviews to ensure the analysis remains rooted in the data. All identifying data has been

altered to ensure anonymity. The narratives are then critiqued using the lens of feminist gerontology in order to challenge and contextualise the data. Finally, the component parts of the analysis are synthesised in a concluding section.

7.1 The six stages of Critical Narrative Analysis

Table 7.1 shows the six stages of Critical Narrative Analysis (Langdridge, 2007). This approach builds on previous work in psychology research methodologies in the phenomenological tradition, based on the work of Ricoeur (1970) in which he engages with both phenomenological and hermeneutic theories in order to build a framework for examining text. Section 3.5.2b contains a fuller description of the background to the method. The approach has been used in several health disciplines as a way of examining narratives of experience and incorporating a level of critical thinking to deepen understanding of a phenomenon (Peter and Polgar, 2020; Stacey et al., 2016). Although presented as a process of six stages, the analytic process is not always linear, and the researcher can move between stages in an iterative fashion as the process develops and themes or functions of the narratives emerge.

Table 7.1: Six Stages of Langdridge's (2007, p134) Critical Narrative Analysis

<i>Stage One</i>	<i>Stage Two</i>	<i>Stage Three</i>	<i>Stage Four</i>	<i>Stage Five</i>	<i>Stage Six</i>
A critique of the illusions of subjectivity	Identifying narratives, tone and function	Identities and identity work	Thematic priorities and relationships	Destabilising the narrative	Synthesis

7.1.1 Stage One: A critique of the illusions of subjectivity

The purpose of this stage is to expose the researcher's own beliefs and experience to a level of critique in order to consider the ways in which this might affect the understanding of the narratives being analysed. The researcher makes use of the reflexive practice usual to qualitative methods and engages with the chosen hermeneutic to evaluate their own assumptions. The process, Langdridge emphasises (2007, p135), is an attempt - inevitably imperfect - to highlight attitudes or assumptions held by the researcher. By reflecting on these within the context of a theoretical lens, the researcher can consider both their own perspective and meaning making in readiness to consider that of the participants.

7.1.2 Stage Two: Identifying narratives, narrative tone, and function

This stage is essentially a combination of a content analysis, that is, examining the events of the narratives shared, and a structural analysis which considers the tone and function of the narrative. Initially, this stage involves examining the narrative text(s) and examining it for the various narratives it contains. Even a narrative regarding a specific event is likely to hold several narratives and these are identified at this stage. Unlike other methods which require coding and breaking up of the text, narrative analyses like this, encourage the text to remain complete to maintain the sense of narrative. Riessman (2008) describes how all narratives are discursive: that is, they are made in response to actual or perceived questions or criticisms. By identifying the tone of the narrative, the researcher can begin to explore the rhetorical nature, or the function, of the text. This might be defensive, in response to perceived criticism, or explanatory if there is a perception of diverging life experiences.

7.1.3 Stage Three: Identities and identity work

Narrative can be used as a way of creating or shaping a person's identity: by structuring their narrative and framing events in such a way, people make sense of their embodied experience in what Ricoeur refers to as 'emplotment' (1991). This stage of the process is intended to work with the text to explore the identities being shaped and shared

through the narrative process. Langdridge highlights that this is likely to involve a focus on the tone of the text and reinforces that this is not a linear process.

7.1.4 Stage Four: Thematic priorities and relationships

This stage involves identifying the key themes and priorities of the narratives. Again, the narrative should be kept intact, and Langdridge suggests avoiding coding or similar techniques often used in thematic analysis in order to maintain the integrity of the narrative. Themes may be clustered into groups of themes across the narratives and may involve subthemes.

7.1.5 Stage Five: Destabilising the narrative

This stage employs the chosen hermeneutic, a critical social theory, to further examine and challenge the narrative. In this thesis the chosen hermeneutic is feminist gerontology, for a detailed discussion of the rationale for this choice of hermeneutic see Section 3.1. The purpose of this stage is to engage in a hermeneutic of suspicion, based on work by Ricoeur (1981) which emphasises the situated nature of an experience and the resulting narrative. By employing a suitable theoretical lens through which to view the narrative, alternative views are possible. This can lead to a richer understanding of the phenomenon under investigation. In this thesis, by using feminist gerontology, aspects of later life can be considered in the context of

critical writings on political economy of ageing, or of cultural values which embed the analysis in a wider social and theoretical context.

7.1.6 Stage Six: Synthesis

This final stage, as the name implies, brings together the component parts in a cohesive presentation of findings as carried out in this chapter. The narratives remain an important part of the writing, as the voice of the participants is key to the process. The narratives are then drawn together with findings from each of the stages of the process, finishing with a presentation of the work on the hermeneutics of suspicion. As with all research, writing up the findings as a whole, is an important way to present the study. This is both to make sense of the process in a consolidated format, and to share the findings.

7.2 The illusions of subjectivity regarding older women who live alone

The purpose of this stage of the process is for me to reflect on my own identities and beliefs in order to consider how these may create assumptions which affect both the creation of the narrative and the analytic process (see Section 7.1.1). Riessman (2008) highlights how narratives are discursive processes: often responding to perceived criticisms or defending assumed positions. This is certainly true when narratives are collected through an interview and the narratives are, in a sense, co-created based on the context of time and place as well as

perceived commonalities or divergences in experience. To address this, I have considered various aspects of my identity and beliefs which could affect the process. Firstly, is my identity as a 36-year-old woman, cohabiting with a heterosexual partner. I have never lived alone and have not reached later life as a woman although there is the potential to do so. I am also of a different generation to those women interviewed who were generally closer to my parents' ages. These factors all lead to an inevitable gap in experience and assumptions between myself and the participants, something I addressed by ensuring I listened as much as possible to their narratives and used their responses to direct the interview where possible.

Another factor to consider is my training and employment as an Occupational Therapist (OT). My choice of this profession and my training mean that I value people's time-use whether in work, selfcare or leisure: all broadly considered occupations. Occupational Therapists value occupations for their ability to promote and maintain good health and wellbeing, but also, in the case of unsuitable or imbalanced occupations, are aware of the negative effect these may have. This awareness of the role of occupation is particularly relevant when considering aspects of narrative such as working life or volunteering. One way I noticed this during the interviews was the conscious effort required to shut off the 'OT' part of me which wanted to provide solutions or suggestions at times. This was addressed by a focused effort to foster a curiousness about the narrative and the

participants' life course in order to resist the more active role I usually take in a therapeutic situation.

Finally, it was important to address my own beliefs regarding this population: my working life has led me to meet many older women who live alone, and they varied considerably. I have met many older women who live alone with robust networks and full lives and do not perceive living alone to automatically equate with loneliness: something which came up both in the literature review (see Section 2.1) and in general discussion of my project with colleagues. I am aware that this is not always the case, but my interest in feminist theory and my experience to date has led me to resist the ideal of the nuclear family and traditional women's roles within this, and to embrace wider support networks and alternative ways of living. Those living alone may be at risk of isolation, particularly in times of poor health but this is not always the case. As with the other factors, I addressed this by focusing on the narratives at hand and responding to individual responses, in order to minimise the effect of my assumptions during the interview and analytic process.

7.3 A description of individual narratives

Table 7.2 sets out a summary of the seven participants, their current living situation and a brief history of their life course events. While these are discussed in some detail in chapter six, it is useful to review

the participants here, particularly within a life course context before reviewing their narratives. Following the table, each of the seven narratives are discussed with particular reference to the tone, function, and identity work as per stages two and three of the CNA process. Quotes are in italics with the page numbers in parentheses.

Table 7.2: Description of older women participants.

<i>Pseudonym</i>	<i>Description</i>
Denise	Aged 65. Lived in alone in current maisonette for 23 years. Prior to this she lived with her parents while saving up money to buy a property, having lived alone in another town in her 20s. Retired from full-time employment for 2 years. Volunteers and involved with several community organisations.
Cathy	Aged 80. Has lived alone in current house for 20 years. Previously cohabited in houses with other members of her religious order. Retired from full-time paid work but involved in many community projects.
Wendy	Aged 73. Widowed 5 months prior to interview. Married for 52 years, lived in current house for 37 years. Retired from full-time work 13 years ago. Involved in local volunteering and provides support to two friends and an older sister.
Angela	Aged 70. Widowed 10 years. Lived in current flat for two years. Provides support for friend's child. Has two sons and three grandchildren who live locally. Diagnosed with Rheumatoid Arthritis approx. 20 years ago.
Diane	Aged 74. Has lived in current flat for less than a year, having moved here after her partner of 38 years ended their relationship. Retired from paid work within the last year. Involved in several volunteering roles. Diagnosed with systemic scleroderma approx. two years ago.
Kim	Aged 74. Partner of 40 years died 7 years prior to interview. Has lived in current house for 28 years. Retired from full-time work. Involved in local social group and a lesbian co-housing initiative.
Janet	Aged 66. Widowed one year. Lived in current house 18 years. Retired about 2 months prior to interview.

7.3.1 Denise

Much of Denise's narrative focussed on the present and the future: she did not tend to dwell on the past or alternative narratives. This is reflected in her emphasis on planning her time-use with the feeling that some activities were of more value than others:

...I definitely planned for retirement, and I think U3A [note: University of the Third Age] is a little bit of a setback but I'm not too worried cos I, I have got the gym, I've got the potential of doing more cycling... (240-1).

She does not discuss earlier relationships or how she feels about living alone as a single woman; there is a defensive function suggested in a couple of places where she references children, perhaps responding to perceived judgements about this:

...I don't have children but even so, some people can't rely on their children so y'know... (92).

There is also a sense of wanting to resist ageing in the narrative; this is reflected in a busy and active tone throughout. Denise focusses on keeping fit and well, is irritated at being considered 'vulnerable' (121), by the organisation with which she volunteers and appears happier to socialise with people younger than herself '*...I don't feel old,*' (163).

Her identity appears to be tied closely with the activities she undertakes. Now in retirement these are often volunteering or outdoor activities such as cycling and birdwatching. She had spent time supporting her mother who lived in residential care and the death of

her mother during the Covid-19 lockdown presented a challenge to her identity in that many of her activities were unavailable to her, underlining the centrality of these to her identity:

... Lockdown sometimes made me think, and certainly the death of my mother made me think, this sounds depressing but made me think what, what purpose have I got? (511-2).

7.3.2 Cathy

The tone of Cathy's narrative is grateful and reflective: likely because, of all the participants, she is the only one who made a definite choice to live alone:

I...I I I do sometimes stop in my tracks and notice how much I like being able to do what I want to do it (299).

Having lived much of her life in communal housing with the religious order, her choice to live alone at the age of 60 is expressed almost as an escape, that she '*was lucky to be able to get away with it*' (316). Despite this, she remains connected with the church and community. Her identity appears tied to both religion and education throughout her life, having grown up in an '*enormous*,' (60) Catholic family, going through private education into teaching, joining the religious order and then re-training as a psychoanalyst in her 50s.

The function of the narrative appears fairly reflective: perhaps indicative of the many years of psychoanalysis she underwent in

addition to her spiritual lifestyle. She is keen to explain aspects of the religious order, possibly as a response to perceived misunderstandings as it is a relatively unusual lifestyle.

Her interest in community life extends beyond the religious order and she is involved in several roles in the local area, despite having retired from her psychoanalytical practice. This involvement in several aspects of community life also includes book groups, a music playing group and working on a book relating to her interfaith work. There is a sense of continued engagement in learning and development which has not stopped during the pandemic. Her adaptation to maintain '*more of the same*' (222) routines, seemed to have helped her through a difficult period.

7.3.3 Wendy

Wendy's narrative had an incredibly busy tone: her open and voluble nature added to this during the interview, suggesting the narrative functioned as a reinforcement of self-identity, echoed in her reflection:

...yeah so, I suppose I think now I've told you all that I think I've had a fill, a full life... (562)

Interestingly, she was interviewed at a time which perhaps served to challenge this the most. Widowed just as Covid-19 caused the first lockdown in the UK, funeral arrangements, and other activities she had intended, were limited. She remained busy around the house, but

appeared aware that this may be serving as a distraction accepting her GP's offer of bereavement counselling:

...I think I am afraid of really breaking down and having a good old howl which I probably will do but and I know its natural, but I just think I can't afford to do it and go a bit off the rails I need to control it a little bit... (283-5)

Her identity seems close linked with this busyness: she described volunteering, charity treks, and providing support to several friends and relatives. These activities were restricted by either the limits of the pandemic or her need to remain home following the death of her husband:

...I don't know I just I just wanted to be grounded. And be at home... (209-10)

There is a sense that this is a challenge to her identity, a period of adjustment as she grieves the loss of her husband and adjusts to living alone, causing her to experience panic attacks. However, the interview ends in a hopeful tone as she considers how she will move forward:

...its prob a good project to be on my own cos I am learning to be on my own. Come and see me in a year's time! [laughs] (362-3).

7.3.4 Angela

In contrast to Wendy, Angela's narrative felt calmer in tone and more reserved. She had lived alone for ten years since she was widowed

and spoke of her bereavement in more succinct terms, possibly as a result of the passage of time:

...it was devastating for, well, for all of us really. But as I say I've got through it a bit and you just have to make a different path for yourself I suppose. (98-9).

Her narrative felt calmer than perhaps Wendy's or Janet's suggesting that, even with the events surrounding the Covid-19 pandemic, her sense of self remained intact when challenged. This may be due in part to the established self, formed in the years since her bereavement and retirement, and the support of her children and grandchildren.

There seemed to be points which functioned to emphasise that those living alone would not be the only ones struggling in the pandemic:

I personally didn't feel too agitated about the whole thing, but I've got a friend that most decidedly did, does, still. It's affected her quite a lot actually um and she's with her husband and she used to phone in the morning and say, 'He hasn't shot me yet!' I said 'Oh, that's good!' (82-4)

Perhaps this reflects a defence against being perceived as vulnerable, but it also served to underline a sense of resilience. Of all the participants she was the only one to have her own children and grandchildren. They provided significant support during the pandemic and structure to her life prior to this. Her identity seemed more connected with her role as mother and grandmother than with her activities, suggesting that as this relationship remained unchallenged

during the pandemic it helped to maintain a sense of self during a difficult time.

7.3.5 Diane

Diane experienced several unwelcome life course events over the preceding few years including a difficult menopause, a diagnosis of systemic scleroderma, the death of her brother, the ending of a 40-year relationship and the house move to live alone. Understandably, the tone of the interview was one of disillusionment and frustration. These changes all appeared to challenge her sense of self:

...you've picked me in a difficult bit of life and everything's really different...menopause, I was a perfectly normal person until menopause [both laugh] I never had any problems at all... (135-7)

Her identity appeared a little fragmented: separating her childhood from adulthood, stating '*life started,*' (257) when she moved to a city from the family home in the suburbs. This is reinforced by her assertion that she is '*not a very family orientated person, I try my best to be an aunt, but it's not my forte really [laughs]*' (234-4). This appears a defence rhetoric against a perceived critique of her role as a woman: her response to questions around marriage and children are brusque and did not invite further exploration:

No, we weren't married, no children, no reason just one of those things, (57).

Much of her identity seemed tied with her work as a designer, especially interesting as she resisted the profession which had been her father's. She had retired within the past year, another loss which seems to accumulate with the others. This resulted in a narrative which feels ruptured, highlighted by her lack of future planning:

...left to my own thoughts I get quite depressed and think I'm going to die anyway so...I won't start anything new, so I don't know, no, I've come to a halt at the moment, (318-320).

This is added to further by the interruption of the Covid-19 pandemic which restricted many of her activities such as volunteering or museum visits, reinforcing the idea that her sense of self was challenged by this interruption to the activities which constructed her identity.

7.3.6 Kim

The overall tone of Kim's narrative is fairly calm and pragmatic. She had lived alone for seven years following the death of her partner with whom she had lived for some 40 years and seems to have adapted well to the change. As she discusses several life choices such as her career, the decisions are made based on lifestyle or financial considerations such as choosing to become a teacher rather than pursue a career as a professional musician:

...my ambition was to play a, the clarinet in an orchestra but then of course you know the light dawns on you that there's only two clarinettists in each orchestra [both laugh] you're likely to be

unemployed more often than not, and do I really want that sort of life?

(178-80)

She is a member of a lesbian social group which her and her partner joined about 20 years before. This group seems to provide much of her social support and is closely linked with her identity. In the interview she explains that many of her jobs required her to keep her sexual orientation and partner secret from colleagues due to issues around discrimination with the result that her identity would have been partially hidden. This suggests that her social group would have been a place in which she could perhaps feel herself:

...it is a shame I mean now I wouldn't bother I'll tell anybody I don't care! I think why should you have to hide it but, in those days, you had to, yeah... (360-1)

This group has continued to be important throughout her life and provided significant support after the death of her partner. She was also involved with an older lesbian co-housing project, perhaps reflective that the challenges of growing up lesbian in the mid-twentieth century in the UK has led her to find it easier to continue to socialise with a lesbian community in later life.

7.3.7 Janet

The overall tone of Janet's narrative was quite flat and lost. She was interviewed the day before the one-year anniversary of her husband's death and was finding life difficult in terms of motivation and moving

forward. Within the last year she had lost her husband and then made the decision to retire during the Covid-19 pandemic. These significant life events appeared to have accumulated and left her feeling adrift as she explained she felt uncertain what to do next:

...I don't know but that is, it's no motivation and a sheer I can't be bothered to change things just let me get on how I want to be at the moment. (297-8)

Her identity appeared challenged by the two significant life course events within the last year: the double loss of partner and work. When she spoke of work, she presents herself as competent, even while she was receiving treatment for breast cancer, she remained involved with work:

I didn't have that much time off when I had breast cancer, but I was standing outside on the phone to a Belgian printer saying, 'have my catalogue' and I'm thinking there's me, radiotherapy, trying to negotiate on the phone between these stupid catalogues... (53-4)

This suggests that the loss of her working role without plans for alternative time-use would have resulted in a lower sense of self-efficacy. She had support from her stepchildren and friends, but explained that most of the time, *'my husband used to make most of the decisions I just went with the flow,'* (403-4). Her narrative felt ruptured by these losses and she had yet to find a way to resolve this meaning that she was struggling with many aspects of living alone.

7.4 Thematic priorities

This section details the three meta themes of *Rootedness*, *Busyness* and '*New Paths*'. Table 7.3 summarises these and the subthemes within each meta theme, supporting each with quotes from the interviews. The sections 7.4.1 to 7.4.3 explore each of these in detail and link the themes with existing literature.

Table 7.3: Thematic priorities and relationships.

<i>Meta themes</i>	<i>Themes</i>	<i>Participant and quotation line numbers</i>
Rootedness	Family	<p>Wendy – <i>I've always loved gardening cos my dad had like a he was a stationmaster so this is why there's gonna be, the sleepers are there, there's gonna be a railway theme</i> (49-50) <i>My dad said do your shorthand and typing and learn to drive you will always have a job and you'll be able to get from A to B.</i> (471-2)</p> <p>Angela – <i>...normally in the summer holidays I would have taken my two grandchildren out...</i> (143)</p> <p>Janet – <i>I decided to retire cos I am the only one up here. All my family are down south</i> (163). <i>...we've got a very strange relationship cos Mick's ex-wife and I get on very well. Always have done.</i> (465)</p>
	Friends	<p>Kim – <i>...but my local group here took me in hand and every day one of them would look after me in a way and take me somewhere or give me a meal you know they were great and they helped me over the first few months really...</i> 338-9, 499</p> <p>Diane – <i>I'm not a very family orientated person.</i> (234) <i>...friends round the corner, Hannah, and one of the good things about moving back to X is I already know 4 or 5 or 6 people here</i> (356)</p> <p>Janet – <i>I've got so lovely neighbours and Steve over there's got my phone number, Laura next door's got my phone number and he'll say to me I haven't seen you recently: are you alright?</i> (158).</p>
	Community	<p>Denise – <i>...the clapping for the NHS, and I miss that so much, I couldn't believe that, it was so nice. Cos I'd pop up to the front gate and then walk up and down chatting to people or they'd walk up and down chatting to me</i> (436-7).</p> <p>Cathy – <i>I don't know that I can imagine being, living here and not being involved in, in anything, um I am</i></p>

involved, in my parish church, I play music. (138-9).

Busyness	Planning ahead	<p>Wendy – <i>I'll come when I'm 75 and we'll have a proper celebration and it'll be properly organised and planned y'know um so that's a long term plan if you like (550-1)</i></p> <p>Denise – <i>One of the reasons I was thinking about moving up to nearer my cousin's was what do I do as I get older? (91-4).</i></p>
	Self in employment	<p>Diane – <i>I'm not motivated I am a designer by - naturally which means fulfilling a brief and so if somebody doesn't ask me to do something I sort of why, why would I? (286).</i></p> <p>Janet – <i>...because you're a PA you learn things you shouldn't learn but you do, and I sussed out one day oh this company's going to move... (10). ...but there's this job coming up it's a very private job, very covert and everything and you know would you be interested? (60 -1).</i></p>
	Busy in retirement	<p>Wendy – <i>I've got a friend who I support, one in Nottinghamshire who's blind so I support him with power of attorney and my other friend with the mental health lives down in Southampton so... (41-2)</i></p> <p>Denise – <i>So I think routine is important, it makes you I think it probably makes you happier, (118).</i></p> <p>Cathy – <i>I don't spend much time being lonely and that's not just because I've got devices to get out...it probably because I do quite a lot, I am quite an active person (138-9)</i></p> <p>Diane – <i>I always went out for yoga or pilates or classes or evening classes or daytime classes yeah yeah, right old fidget that's what I am (131).</i></p>
"New paths"	"A different life"	<p>Wendy – <i>it's still early days but I think definitely I will get involved with something or somebody that I feel is worthwhile and I get the benefit as well... (320)</i></p> <p>Kim - <i>um...no its, it is a different life...it is a different life to living with someone else definitely ...and in a way I suppose</i></p>

you're in a different mindset to the one that you used to be in (487).

Angela – ...you just have to make a different path for yourself I suppose (98-99). So, it's just about feeling useful rather than just sitting doing nothing I think and going off and having coffee and lunches and all that. (242)

Cathy – ...if I wasn't living on my own, I would be doing everything I should be doing when I should be doing it kind of thing. So, in order to break that I live on my own. (301-2)

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Diane – ...it was a huge part of my life I miss that enormously, like a limb, (355).

Janet – So I spend more of my time sitting in the kitchen...cos there's a telly down there and the radio goes downstairs as well so I come in, I sit in the kitchen make myself something to eat, and I might come up here, do a jigsaw: I've got a jigsaw app on the iPad which I like and I sit here a little then I go upstairs to my own bedroom and watch telly up there. And that's it. That's me. (178-80). I don't have to go out today but yesterday I went out and I bet I do I bet I creep out later on. (361).

7.4.1 Rootedness

The theme of rootedness refers to elements of connection with people and place which were the basis of a sense of belonging. This theme was common across all the life course narratives. The women differed in their relationships with their family, but all expressed a connection with people which rooted them to time, places, or interests.

7.4.1a Family

Family was important for the women in two main ways. The most obvious is the support it can provide during difficult times, most notably in the Covid-19 pandemic, such as that provided by Angela's children and grandchildren. This is something often acknowledged in the literature: that children provide support for their parents in later life (Křenková, 2019). This can also be seen with Janet and her stepchildren who were a valuable source of support as she negotiated the emotional and practical difficulties of bereavement. Another way family was felt to be important in these accounts was in creating a sense of self by providing points of connection across the life course. The importance of this is shown in Wendy's garden planning which is railway themed as a continuation of her relationship with her father, who worked in the rail industry. A more complex demonstration of this is with Diane whose career choice was made despite it being the same as her father's. She did not describe a close relationship with her family who were often referenced in terms of their differences to her, but they

continued to provide a sense of self in the sense of a contrast as much as a connection.

7.4.1b Friends

Not all of the women had close relationships with their family, and friendships became central in providing practical and social support. In Kim's case this is evidenced in the support provided by her lesbian social group after her bereavement. For other women, such as Janet, friends and neighbours provide support which augments that provided by their family. Diane describes an uneasy relationship with her family, leading her to form strong friendships over the life course to provide the support she requires:

And the other bit of my life I suppose of course I don't have children, but I have um a sister-in-law and two nephews and their families but they all live in Suffolk and I'm not a very family orientated person, I try my best to be an aunt my it's not my forte really [laughs] we're very different ...so that's the only family I have. 232-235

These all suggest that friendships in later life are incredibly valuable and, in some cases, more so than family. This is consistent with findings in the literature, suggesting that future research needs to

attend to a wider consideration of support than the family (Blieszner et al., 2019).

7.4.1c Community

Many of the narratives expressed a connection beyond closer relationships into the wider community. This 'community' could be a group with shared interests such as Cathy's music group or a religious community. It could also be a general feeling of being connected to those in the local area socially or by contributing by volunteering. This sense of wanting to contribute to the community, not simply to receive support, echoes ideas of interdependency and civic engagement found in the literature (Martinson and Minkler, 2006; Zaninotto et al., 2013).

7.4.2 Busyness

The theme of busyness refers to a sense of the participants engaging in work, or other productive activities, across the life course and the place this has in terms of constructing their identity and consequently their ways of managing when living alone. The theme has three subthemes which refer to the various ways in which this aspect contributed to identity at different time points in their narratives.

7.4.2a Planning ahead

This theme refers to the ways in which participants planned their time, often as a way of maximising time and not wasting it. Denise particularly appeared to plan for the future, both for larger issues such as later life when she might require more assistance but also more day-to-day activities such as her time-use during retirement. Wendy also demonstrated aspects of this, particularly with her plans looking forward beyond her bereavement. This reflected a proactive approach to activities and resulted in a sense of busyness both in the planning itself and the resulting activities.

7.4.2b Self in employment

For several women, their role within the workplace appeared closely linked with their identity, something not uncommon and well-established in existing literature (Jahoda, 1982; Unruh, 2004). Their narratives were shaped by the professions they had and the associated identity they had formed. Diane had retired from work as a designer but continued to link herself with the profession. She attributes her need for an external 'brief' when carrying out activities to this role. Janet had retired from work and was experiencing a period of low motivation. When speaking of herself at work she reflected a sense of proficiency which appeared lacking in her current narrative. This suggests that having lost this role, her identity became challenged as she adjusted to retired life.

7.4.2c Busy in retirement

This final theme continues the idea of identity through occupation, however, in retirement the women have found alternative occupations with which to fill their time and to contribute to a sense of worth. Many of the women engaged in what might be termed 'civic engagement' (Martinson and Minkler, 2006) or productive activities. Most commonly they were engaged in formal volunteering through local organisations such as cultural attractions, wildlife centres or health and care services. In addition to this Wendy and Angela provided unpaid care and support for friends and family which took significant time and commitment. Wendy, Angela, Diane and Denise all acknowledged the benefits they received from participating in this work emphasising the reciprocal nature of such activities.

7.4.3 "New paths"

This final meta theme has two sides to it. For most of the women, living alone was a new chapter in their narrative and often it was a result of unwelcome life events such as a relationship breakdown or a bereavement. There was a general feeling that this move to live alone was in some ways a rupture or deviation in their life course. For those that had moved on and begun to reshape their identity it was framed as a new path. For the women who were in the midst of adjustment, this rupture was felt as a challenge to their sense of self identity.

7.4.3a “A different life”

This phrase ‘a different life,’ was used by Kim to express how she had reframed her life following the loss of her partner. She had continued with similar interests such as travel or socialising with her local group and this perhaps helped in providing a sense of continuity through a period of disruption. Wendy was earlier on in her bereavement process but was already considering ways to move on in a similar way. As the only woman who had actively chosen to live alone, for her the move represented a different life in a positive way: she had struggled with aspects of communal living with her religious order and found living alone to be the way she could find a more peaceful and fulfilling life.

7.4.3b Challenges to self

For those who had yet to reframe their narratives following the shift to living alone, there was a sense of identities being challenged. Both Diane and Janet had lost their partners and retired within the year or so prior to the interview. The loss of two significant strands of their narrative seemed to provide a lacuna which they had yet to fill, and this was challenged further by the events surrounding the Covid-19 pandemic which restricted many of their activities. For both of these women, there was a sense that this challenge to their sense of self was presenting difficulties in terms of managing tasks and dealing with the day-to-day of living alone. This highlights that for those who have not lived alone throughout the life course, an adjustment period is

required when there is a change to living alone. This contrasts with Denise who has lived alone for a long period and has established methods of managing the practicalities of living alone.

7.5 Destabilising the narrative using feminist gerontology

As described in section 7.1.5, this part of the CNA process is where the chosen hermeneutic is used as a lens through which to further examine the narratives. The chosen hermeneutic in this case is that of feminist gerontology. Feminist gerontology draws on feminist theories and critical gerontology to critically examine the factors which affect women in later life, such as power imbalances, life course inequalities and structural biases (Hooyman et al., 2002; Calasanti et al., 2005). By examining later life through this lens, the traditional functionalist and biomedical paradigms of ageing can be challenged and expanded (Bond and Cabrero, 2007). For a further explanation of the choice of this as a hermeneutic see Section 3.1. The discipline of feminist gerontology is a broad one and three particular aspects of it are used here to further critique the narratives shared in this study: Ageing and Identity; The Political-Economy of Ageing and Ageing in Context. These three areas touch on several of the key themes highlighted in Section 7.4 and enable a broader understanding of the issues discussed.

7.5.1 Ageing and identity

The challenges to identity in later life are not exclusive to women, however, the literature suggests that women experience these challenges in a particular way. This may be exacerbated by challenges to their identity over the life course: one example of this is taking a new title and name when they marry (Estes, 2008). The embodied experience of ageing is particular to women, with the menopause often medicalised as a problem rather than a process (Gulette, 2003) and the stringent cultural and social standards to which the ageing female body is a challenge (Twigg, 2004).

This touches on several themes explored in the interviews and relates to ideas of identity creation through doing, challenges to identity and the need to reshape identity during periods of change. The theme of 'New Paths' explored in Section 7.4.3 is one example of how significant life changes can present a challenge to identity, requiring the women to readjust their perceptions of themselves. This appears particularly difficult for Janet and Diane who are still in the process of developing this aspect of their narrative.

Identity formation is an ongoing process throughout life, and one which sits at an intersection of a number of factors including gender, age, ethnicity, class, and sexuality (Cruikshank, 2008; Holstein 2018). Age is one characteristic which is less stable than that of ethnicity or gender

and is therefore one which poses the challenge of readjustment. It can also be a period of change and loss as demonstrated in these interviews where the twin losses of work and partner had been experienced by several of the women. An increasing presence of women in the workforce within the last century (Hooyman et al. 2002; Penn, 2018) means that employment can be a significant contributor to identity for women, something which is challenged in later life.

7.5.2 The political economy of ageing

In addition to retirement challenging women's identity, the relationship between women and the workforce is a complicated one throughout the life course, which links with a significant aspect of feminism and critical gerontology which is the political economy of ageing. This refers to the ways in which structural aspects of life influence the personal, such as the way in which government policy reifies cultural norms and assumptions by posing policy as value neutral and, consequently, reinforcing existing inequalities.

One aspect of this is that a person's value is often tied to their role in the labour market (Biggs, 2001). This is complicated in the case of women who often have interrupted employment as a result of child rearing, continue to be paid less than male counterparts and provide the bulk of care work for low or no pay (Krekula, 2007; Vlachantoni, 2019). In later life this is challenged by older adults' removal from the

labour force. Historically, UK policy mandated retirement, which created a structured dependency, more recently, demographic projections about an ageing population are often used to justify the withdrawal of welfare services (Biggs, 2001). This has developed into the need for reframing later life as one of opportunity.

Active ageing discourses have become consecrated in policy as people are encouraged to remain active and productive as long as possible (Department of Work and Pensions, 2014). The positive impact of occupation, of role and purpose is not being challenged here (Laws, 1995; Unruh, 2004). However, these narratives are embedded in Western values of independence which can be problematic in later life, they also serve to show how government policies, presented as value-neutral, can exacerbate existing inequalities (Ray, 1996; Foster and Walker, 2013). They also shift the focus from government responsibility to individual action creating what Holstein refers to as an 'illusion of choice,' (2018), whereby those who are unable to contribute in this 'Big Society' may be viewed remiss (Public Health England, 2020; UK Cabinet Office, 2010).

The women interviewed were mostly homeowners and appeared to be financially secure which is not always the case (Nolan et al., 2019). They all spoke of holidays, home improvements and several expressed gratitude at their relative financial stability. Most of the

women had engaged in unpaid care work and/or volunteering and spoke well of their experiences in terms of providing a sense of purpose and social connection. Their challenge in this context is one of role and purpose as a result of retirement or other life changes which they appear to address through this sense of busyness, a key theme from the narrative.

A feminist gerontological lens enables us to consider the political and economic context behind this need to be occupied. Consider for example the way in which Denise referred to '*wasting time*,' (217) when she was at home; the implication being that time-use should be productive, that certain activities are more valuable than others and, consequentially, confer value on the individual. This was most acutely noticeable during a period such as the lockdown associated with the pandemic which restricted many 'productive' activities, resulting in a challenge of self for several of these women. Finally, this lens highlights the privileged nature of this choice of occupation. By having the financial resources and life course experience, these women were in a position to choose to volunteer and to be aware of the potential benefits of doing so. The intersectional nature of feminist gerontology points to the multiplicity of life course narratives and that, as a consequence, we are able to situate these experiences within a wider context.

7.5.3 Ageing in context

This final aspect of feminist gerontology is that which emphasises context. This is a broad term and covers several aspects of the discipline. Section 7.5.2 explores more fully the political economic context, but other contexts include cultural, local, cohort, and historical. These all contribute to the ways in which narratives are framed and contribute to the life course trajectories which shape late life.

Using the lens of feminist gerontological literature, ageing is considered a social construction, something to be resisted through cultural practices. This is reflected in media representations of successful ageing: McHugh (2000) cites popular imagery of White older adults playing golf or strolling around beach resort. This can result in an us versus them approach to ageing: both Denise and Wendy referred to themselves as not feeling 'old,'. Wendy stated: *'I don't want to be a grey-haired old lady like living on my own having a gammy leg or a hip,'* (294). Denise resisted the company of older people, reflecting what Slevin (2006) refers to as the 'contagion,' of old age as individuals seek to distance themselves from ageing. This is particularly true for older women as they are subjected to both the 'male gaze' and the 'youthful gaze,' creating an intersection of inequalities (Twigg, 2004; Calasanti et al., 2006).

This notion of intersectionality is useful when considering the contexts of ageing. For example, Calasanti and Levin (2001) highlight that white, older women are often less poor than black, older women and Cruikshank (2008) refers to the triple intersection of being old, a woman and a lesbian. This is something to consider in the case of this study of seven White financially secure women who are all within the 'young old' age group and of the 'Baby Boomer' generation. All of these factors will have created a context in which their life courses will have been shaped, resulting in a particular framing of their narratives in later life. Consider Kim's discussion around motherhood which, as a lesbian growing up in mid-twentieth century UK, '*you wouldn't have dreamed of having a child,*' (347). This illustrates how a life choice was shaped by her historical and cultural context, affecting how she comes to experience living alone in later life.

These wider considerations of the multiple contexts in which we age serve to highlight the importance of individual narratives: by attending to the specific, it is possible to explore how broader factors shape the embodied experience of later life. It also serves as a reminder of the importance of exploring non-dominant narratives such as those of older women in order to challenge and reframe the existing discourse around old age. Finally, it indicates an area for further research as the narratives of older women of black and minority ethnicities or those of the oldest old require further exploration.

7.6 Discussion of life course trajectories

The use of a life course approach during this analysis enables a consideration of the factors which influence health and wellbeing in later life for these women. By mapping out factors across the life courses and considering them in the context of wider critical literature we can see how individual life courses interact with a broader political and cultural context to shape later life. The women interviewed here all shared narratives of divergent life courses, but some key events highlight trajectories in women that live alone which provide insight into how certain factors may affect their health and wellbeing as they age. Five key trajectories are noted in terms of how women come to live alone in later life:

- Living alone throughout the adult life course after leaving the family home
- Living alone after leaving cohabitation with others (non-family) such as housemates.
- Living alone after the ending of a long-term relationship such as in the case of divorce.
- Living alone following the death of a partner.

- Living alone after a combination of cohabiting situations: such as leaving for university and cohabiting, living with a partner, returning to family home.

These trajectories suggest some of the various ways in which women come to live alone in later life when considering the life course approach. By distinguishing between the different life course trajectories, it can be seen that there are differences in the resulting experience of living alone which may in turn affect health and wellbeing in later life. The most common reason for living alone was widowhood, experienced by Wendy, Angela, Kim, and Janet. These women were all living alone as a result of a bereavement and as such, the move to living alone was a negative and undesired one. The time living alone also seemed to affect the nature of the experience, as those who had lost their partner several years ago appeared to have made new ways of living which improved their wellbeing. In addition to the death of a partner, a relationship breakdown or divorce are also common reasons for living alone (as indicated by the descriptive statistics in Table 4.2, chapter four) and this also reflects a negative trajectory in the transition to live alone as highlighted by Diane's narrative. This appeared to echo similar themes as bereavement in terms of uncertainty about the future and having to make a new start but perhaps complicated with the difficulties around whether or not to keep in touch with an ex-partner as Diane expressed.

Both Denise and Cathy made the move to living alone as a positive one suggestive of an upward trajectory associated with living alone. Denise indicated that she was happy to leave her parents' house having had to return there in her 30s for financial reasons. However, a suggestion that she would consider living with someone else in the future indicates that she is not completely happy with living alone. Cathy, on the other hand, made a very positive and certain choice to live alone and is clear that this was an important life event for her wellbeing. She attributes her access to regular psychotherapy as a way of increasing her self-knowledge which may add to this sense of a positive life choice.

In addition to the reason for living alone, other key life events shaped the life course trajectories of these women. Angela was the only one to have had children: she does not reflect much on the process of child rearing, but they and her grandchildren provide significant support and structure in her current life, particularly in the Covid-19 pandemic. All of the women reported fairly stable employment and income throughout their lives, reflected in discussions around disposable income, holidays and secure housing. Several of the women also discussed additional education or training which improved their employment opportunities as well as significant friendships and support networks. These factors all contribute positively to life course

trajectories and provide buffers for negative events thereby promoting positive health and wellbeing (Barry et al., 2018; Marmot et al., 2010; Power, 2020). This is also supported by the results in chapter four, which indicate that SES mediates the effect of household composition on health and wellbeing outcomes.

The life course trajectories explored in this study suggest that the reason for living alone helps to shape aspects of wellbeing in later life as does time spent living alone and the ability to adapt to a new way of living. However, the women interviewed all shared narratives which were free of many factors which can negatively affect life course trajectories such as insecure employment or poor housing. They appeared to be financially secure, most even taking early retirement despite recent policy changes affecting women's pensions in the UK (Department for Work and Pensions, 2014). This suggests that life course trajectories of women from other socio-demographic background warrant further research in order to better understand health inequities in later life.

7.7 Summary of the chapter

This chapter presented the results from a Critical Narrative Analysis in answer to the final research question:

How do life course factors affect how older women experience living alone in later life?

The use of CNA enabled an exploration of the participants' life course events within the context of critical discourse. The details of each stage of the method were set out in detail. The seven narratives were discussed: their tone and rhetorical function considered and the identity work for each of the women was explored. This was followed by a discussion of the thematic aspects of the narratives which were grouped together across the seven narratives. Finally, what Langdrige (2007) describes as the 'destabilising of the narratives,' was carried out. The seven narratives were explored through the lens of the chosen hermeneutic, that of feminist gerontology. This enabled a different perspective of the narratives and set them within a wider critical framework.

These final themes and the hermeneutic work add to the results found in the previous chapter, and complement the earlier quantitative findings reported in chapters four and five. The findings from all four results chapters are brought together in the chapter eight in order to synthesise the findings into a coherent whole.

Chapter 8

Conclusions

The aim and objectives (see section 1.3) of the research was to investigate the factors affecting health and wellbeing of older women living alone. A scoping review was carried out followed by a mixed methods data analysis. This chapter draws together the results from chapters four through to seven, synthesising the findings at a theoretical level which is the final connecting point of the mixed methods approach as set out in section 3.3.2. The chapter uses the theoretical lens of feminist gerontology, as used throughout the thesis, to underpin the exploration of the findings in relation to older women who live alone and their health and wellbeing. In addition to the use of a critical theory, this chapter also draws together the findings with the existing empirical evidence, setting the results within the context of the wider literature. One important aspect of feminist gerontology is an emphasis on the contexts of ageing, be that physical, cultural, or social. Consistent with this approach the chapter is structured to consider the findings by the context, moving from the micro to the macro level. It starts by considering the embodied, individual aspects of ageing (section 8.1), moving to explore aspects of interconnectedness (section 8.2) in the local community context and then considering with the broader political and cultural context (section

8.3). The next section (8.4) reflects on the thesis as a whole and considers the limitations of the study. The final section (8.5) highlights areas for future research based on the results of this study. It also makes suggestions for ways in which policy and practice can help to improve the health and wellbeing of older women living alone in the UK.

8.1 Embodied contexts

Within the critical literature such as feminist gerontology, ageing is considered as an embodied experience. The body, as it shows visible signs of ageing such as wrinkles, acts as a marker of ageing linking the inner and outer world as it is the means of experiencing later life and it shapes the way in which we are treated as older adults, (Calasanti, 2005). This can be especially difficult for older women who are exposed to the male gaze throughout life and then in later life to the youthful gaze (Twigg, 2004).

This consideration of a 'double jeopardy' should be taken with caution, however, as it is not a simple addition of inequalities and women in later life may tend to have alternative resources with which to support themselves (Krekula 2007, p156). Studies which compare determinants of health and wellbeing between men and women suggest that women rely more on social resources, whereas men rely more on material resources suggesting that gender differences in later

life relate not only to the experience but also to the management of later life (Gaymu et al., 2012; Lang et al., 2020). The interaction of the wider cultural context and the individual self is played out in the embodied experience affecting issues such as identity and expectations in later life. The embodied nature of ageing underscores the importance of exploring the individual experience in later life in order to improve understanding of various aspects of ageing (Hannan et al., 2019; Silvio and Soulsby, 2019).

8.1.1 The practicalities of ageing as an older woman living alone

One subtheme which was found in several of the qualitative interviews was that of *Practicalities*. This refers to the practical aspects of dealing with living alone such as managing finances or DIY tasks around the home. Interestingly this was discussed as a concern more than issues of loneliness or safety which seem more common in the literature (Lou and Ng, 2012; Yu et al., 2020). Although the idea of home maintenance as a concern versus a resource is also a common area of interest in research on later life, much research tends to focus on unsuitable or insecure housing (Barry et al., 2018; MacIntyre et al., 2003; Power, 2020). This reflects aspects of the embodied experience of ageing as the participants shared the experience of physical changes which limited their ability to carry out certain tasks (see section 6.2.2). For those who had recently transitioned to living alone, they may have been needing to carry out tasks their partner previously

managed which reflects an additional facet of loss (see section 7.4.3b). This embodied aspect of the experience of living alone appeared to present a challenge to identities for women who expressed a sense of self-efficacy in other aspects of their lives such as during employment (see section 7.4.2b). In many ways this reflects wider issues within societies such as the UK which encourage individualism and independence. Although it is considered human nature to be interconnected there can be a perception that needing support is a sign of weakness (Segal, 2018). There is, however, a growing acknowledgement that the right kind of support can support women to age in place and promote a broader sense of independence (Narushima and Kawabata, 2020).

An important part of the practical issues of living alone relates to *Decision Making*, this was something several of the women shared and this tension between the freedom to make choices and the responsibility of making those decisions was something many of them experienced (see section 6.2.2). The value of being able to make her own choice about aspects of life was valued by Cathy who had chosen to move to live alone from communal housing. For other women, especially those who were bereaved such as Janet or Kim, they described the difficulties of making a decision, such as whether or not to move, when they previously would have had someone with whom to share this process. The importance of being able to make one's own choices is commonly connected with wellbeing (Bond and Cabrero,

2007; Stahnke et al., 2020) but there was nothing in the literature reviewed which explored the challenges for decision making for those older women living alone (see chapter two). This idea of choice may explain the results from the statistical analysis discussed in section 4.5.3 which shows that women who live with people other than a partner have poorer health and wellbeing than those who live with their partners or those who live alone. It is possible that those older adults who live with their adult children do so due to poorer health or due to financial limitations. This may also explain the discrepancies in the existing literature which to date does not seem to conclusively show which living arrangements are associated with the best health (Desai et al., 2020; Hu et al., 2019; Weissman and Russell, 2018; Zali et al., 2017) Another explanation for this variation in findings is that of cultural variations and expectations which may shape attitudes to living alone, and therefore contribute to health and wellbeing. This is discussed further in section 8.3.4.

8.1.2 Keeping well

The subthemes of choice and decision-making were grouped within the overarching theme of *Ownership*. The other aspect of this is that of ownership over health (see Table 6.3). Most of the women, when asked about their health, described certain steps they took to maintain their health and, consequently, their independence. This varied in its manifestation such as making certain dietary choices for Cathy and

Diane or exercise for Denise and Wendy. They all expressed an awareness to some extent of aspects of health promotion in later life such as weight management or exercising (see section 6.2.2). This aspect of the embodied ageing process illustrates how various wider influences such as government policies, global approaches to ageing and cultural values all intersect to shape the individual experience of later life (Holstein, 2018; Public Health England, 2020; World Health Organisation, 2016). Many of the ideas of keeping well or staying fit and independent echo common tropes within neoliberal policy which embeds cultural values of independence into policy (Calasanti, 2010). This approach can then be used as a means of justifying reduced state support. This affects those who need support both by reducing practical support available and by reinforcing values around dependence and care (Clarke, 2019). The interaction between the individual and the wider cultural context is discussed further in Section 8.3.3.

As the global population ages, the public health focus shifts away from infectious diseases towards managing chronic non-communicable diseases (Caley and Sidhu, 2011). This remains the case even with the recent outbreak of Covid-19. The result of this is that many health bodies such as the World Health Organisation (WHO, 2016) are focusing on promoting health throughout the life course in order to encourage a healthier later life, thereby extending healthy life expectancy. Many of the drives around successful ageing draw on

empirical evidence and undoubtedly improve health and wellbeing for those in later life. One important contribution feminist gerontology makes to this aspect of the field is that we are able to consider the wider implications of this approach by emphasising the context in which these decisions around exercise and healthy eating, for example, are made. The participants in the qualitative interviews were all financially stable and in secure and appropriate housing, most of them seemed well-informed and engaged in their healthcare. These factors all supported them in making 'good' decisions about their lifestyles: contexts which need taking into account when considering those who do not have them and are unable to make such choices (Calasanti, 2002).

8.1.3 Individual life courses

Another aspect of embodied ageing is that of the individual life course perspective. Conditions and events over the life course can contribute to health and wellbeing in later life, either positively or negatively. The life course approach is well recognised as being a useful way to engage in research about later life in that it considers an accumulation of factors which exist throughout life including cohort and historical context as well as individual lived experience (Brotman et al., 2020; Laws 1995; McDonough et al., 2005).

Life course aspects of ageing are most clearly demonstrated in chapter seven which uses this approach within the framework of a Critical Narrative Analysis. By exploring each of the participants' life course narratives we are able to explore where key events might shape health and wellbeing in later life. One example of this is that of Cathy (see section 7.3.2). She had cohabited most of her life either with her 11 siblings, at boarding school or in communal housing. The decision at the age of 60 to move out into a property on her own was very much a positive choice which she continues to appreciate some 20 years later. Other life course factors also contribute to her experience of later life: she is well educated; she has a close family, and she has had the support of her religious organisation throughout most of her adult life: this all lends a sense of security which appears to foster wellbeing. Perhaps a contrast to this is the narrative shared by Janet who was widowed one year before the interview (see section 7.3.7). She has also made the decision to retire a few months prior to the interview, thereby experiencing two significant life course events within one year. She does not have children of her own but has a good relationship with her adult stepchildren, one of whom provides significant support. She appears to be financially secure having worked fairly constantly throughout her life despite two redundancies and her employment appears to have been her main occupation. These factors all accumulate to shape how she is experiencing her later life: she is not involved within the local community in any way which, following retirement, seems to lead to a challenge to her sense

of self especially when coupled with her bereavement (see section 7.4.3b).

This research demonstrates that life course trajectories can help to illuminate key life events that shape the health and wellbeing in later life of women living alone. Relationship history, the nature and duration of employment and child rearing are some examples of the types of events which can shape how a person moves through the life course, and in consequence, how they come to experience later life. A narrative approach is useful to examine this, allowing as it does an examination of the life course and enables a person to explore key events whether these be positive or negative trajectories. The importance of the influence of life course factors in determining health and wellbeing in later life is beginning to be acknowledged in the UK government policies. Government policies which support women throughout the life course such as family friendly policies to enable women to raise their children without financial penalties are one example of how policy can support the embodied experience of ageing through the life course. Recent documents regarding public health planning indicate a move towards a preventative approach to health in later life (Department of Health and Social Care, 2018) and there is an acknowledgement of the ways in which life course inequalities can be reflected in later life (Public Health England, 2020). This echoes what has been recognised in the literature for some time (Hooyman et al., 2002; van der Linden et al., 2019) but as health inequities continue to

be reflected in terms of regional variations and poverty rates there is still a long way to go (Public Health England 2019).

8.2 Connectedness

The context referred to here is the immediate social and local relationships which can shape how women who live alone experience late life with resulting consequences to their health and wellbeing. This sense of connectedness was important in all seven of the narratives which were collected for the qualitative portion of this study (see sections 6.2.3 and 7.4.1). This can include household composition, friendships, family and community networks. This section considers variations between the household composition groups and considers possible explanations for these. It also reflects on the impact of the Covid-19 pandemic which affected the UK just prior to the data collection for chapters six and seven, and consequently affected the narratives shared. It also considers the different levels and forms of connectedness and how these might impact on the health and wellbeing of older women living alone.

8.2.1 The role of household composition

An important part of this study was examining the role of household composition as a determinant of health and wellbeing in later life. Previous studies indicated that living alone was a risk factor for poorer health and wellbeing outcomes, but this was not consistent across the

literature (Koivunen et al., 2020; Saito et al., 201; Weston and Qu, 2003). As the most immediate source of social and practical support, cohabitation status is an important aspect of support to health and wellbeing in later life.

The statistical analysis presented in chapter four explored how health and wellbeing outcomes varied among older women, considering if living alone was a predictor for poorer health and wellbeing. For this analysis, the household typologies were living alone, living with a partner, living with others (not a partner). The descriptive statistics showed significant variations in health and wellbeing between the household types: those women living alone tended to be older and in poorer health than those who lived with their partners, but not those who lived with others (see Table 4.3). The regression analyses in the same chapter suggested that SES seems to mitigate the effect of household composition on health and wellbeing with the exception that living with others was a predictor of poorer mental health as measured by the SF-12 MCS (see section 4.4). This supports similar studies in which SES largely explains variations in health between household compositions (Hu et al., 2019) and where those living with others than their partners demonstrated poorer health (Weissman and Russell, 2018).

Chapter five explored variations in how determinants of health differ between those living alone and those cohabiting. This considered the different ways in which life course factors and other determinants of health might vary in the way which they impact of health and wellbeing depending on household composition. One example of this is the different way in which internet use predicted health and wellbeing outcomes: increased internet use was predictive of poorer life satisfaction and GHQ score for those who lived alone but better SF-12 scores and reduced GP use for those who lived with others (see section 5.5.4). Another example of this is the role of volunteering in predicting health and wellbeing: it was not found to be significant for women who cohabited but was predictive of better health and wellbeing outcomes for those who live alone, despite there being little variation in the rates of volunteering between the two groups (see section 5.5.3). This suggests that there may be different types of support needed for women who live alone or that the effects of support may differ for this group. It points to a difference in the way of living depending on household composition which is something shown in the qualitative interviews. Several of the women who were bereaved described how life is different living alone and this may therefore be reflected in changing needs and also may affect the way in which types of input are received (see section 7.4.3a). This supports the existing evidence, for example that those who live alone are less likely to demonstrate positive health behaviours (Kim et al., 2020) which may go some way to explain the better health outcomes demonstrated by

those who cohabit (Chiu, 2018; Hughes and Waite, 2002; Sok and Yun, 2011)

8.2.2 Covid-19 as a challenge to connectedness

The interviews carried out for chapters six and seven were done so in the summer of 2020, between two periods of lockdown in the UK during the Covid-19 pandemic. As a result of this, the women interviewed had been in lockdown while living alone which meant they were isolated from family, friends, and their local community during this time. Living alone is often associated with social isolation although the two are not synonymous (Smith and Victor, 2018). During an event such as a pandemic which required people to remain at home for long periods, those living alone would have been at increased risks of loneliness and isolation. Evidence suggests that social support through friendships, family or civic engagement such as volunteering are all valuable contributors to health and wellbeing in later life, especially for women (Blieszner et al., 2019; Fiori et al., 2006; Gagliardi et al., 2007). The women interviewed certainly described difficulties navigating the lockdown period and, like many people, found alternative ways of maintaining relationships with others such as using video calling technology (see section 6.2.3). Early research with older people living alone during this period suggests that those living alone particularly benefited from in-person social contact and that they were more likely to be in contact with friends rather than family

(Fingerman et al., 2020). Other research highlighted the vulnerability of those living alone (Portacolone et al., 2021) although those who were in newly formed household arrangements were found to experience higher levels of stress and conflict than those living alone (Evandrou et al., 2020). This indicates that the benefits of cohabiting are not consistently positive and rely on elements of choice as discussed in section 8.1.1.

8.2.3 Family and friendship

The support of family and friends has been shown to contribute to positive health and wellbeing throughout the life course and into later life (Blieszner et al., 2019; Holt-Lunstad et al., 2015). Table 5.1 in chapter five indicates that those women who lived alone were less likely than those who cohabited to go out socially: perhaps a reflection of limitations of their higher average age. There was no significant difference in the likelihood of seeing friends and family suggesting that those women living alone who are not going out socially are receiving visits at home (see section 5.1). As this variable only asks regarding a minimum of one social contact a month, it is possible there is a difference in the rate of social contact between the two groups, investigated widely in other studies (Beller and Wagner, 2018; Smith and Victor, 2019).

The importance of social support was reflected in the qualitative interviews which highlighted aspects of social connection across the life course. With regards to the experience of living alone, the theme of *Interconnectedness* included subthemes which acknowledged the changeable nature of social connections over the life course and the challenge of adapting or maintaining continuity. Covid-19 was just one example of the ways in which relationships were interrupted: bereavement being another significant aspect of this (see section 6.2.3). Interestingly, most of the participants did not have children and many of them acknowledged their friends as significant sources of support, something which perhaps challenges the idea that children will provide for their parents in later life (Krenkova, 2019). Existing evidence points to the importance of social support in later life, particularly so for women (Fiori et al., 2006; Gaymu et al., 2012; Lukaschek et al., 2017). This is perhaps reflective of social norms and expectations which shape women's behaviours in addition to the reduced financial resources many women expect to have in later life (Calasanti 2010; Farrar et al., 2019). Further evidence is indicated regarding the types of support available to older women living alone and the ways in which support from family might vary from that which friends provide

8.2.4 Neighbourhood

This aspect of social connectedness relates to the local social connections in communities. Statistical analysis presented in chapter five indicated that living in a rural location was predictive of better health and wellbeing for older women that cohabited but not for those who live alone, and that wanting to move was more commonly a predictor of poorer health for those who cohabited (see section 5.5.5). This suggests that the relationship to and importance of the local community may vary between those who live alone and those who cohabit. The importance of the local neighbourhood in terms of supporting feeling of wellbeing and in promoting access to services have been indicated in the existing literature (Shim et al., 2019; Tomaszewski, 2013). A neighbourhood which is safe and accessible promotes social inclusion and physical activity which can promote health and wellbeing especially in later life when mobility or personal security feel challenged (Kizony et al., 2020; Lak et al., 2020; Stanley et al., 2011).

Findings from the Critical Narrative Analysis in chapter seven suggest that a feeling of rootedness and connection to the local area were developed over a life course and were important in shaping health and wellbeing (see section 7.4.1c). This included aspects such as appreciating local resources, having a supportive social network, and establishing relationships with reliable tradespeople. For a couple of

the participants who were considering moving to a new house to downsize after the loss of a partner, these community aspects played a significant part in deciding where to live: while there was a pull towards moving to live near family, the importance of relationships built up locally often outweighed the benefits of being near family who they usually saw only several times a year (see sections 6.3 and 7.4.1). This theme of community connection also included volunteering: something which connected the participants to their local community and provided a feeling of reciprocity in terms of social support which have been found to be positive for wellbeing (Zaninotto et al., 2013). There is also a suggestion that formal activities in the local community may act in a compensatory way to replace other social contact lost in later life (Ang, 2019) and has been posited as a public health issue for the potential benefits to health (Jenkinson et al., 2013). Critical discourse highlights the cultural and political contexts of volunteering beyond the well documented health benefits, including considering who is able to volunteer, the motivations for policy which promotes volunteering and the implications for those who cannot (Katz, 2000: Martinson and Minkler, 2006). This is discussed in further detail in section 8.3.3.

8.3 Cultural and political contexts

8.3.1 Political economic contexts

The political and economic context in which people age is one of the main foci of a critical gerontological approach and this remains the case for feminist gerontology (Estes et al., 2003). This refers to the cultural and social norms and values which exist within cultures and the ways in which they create assumptions which are then embedded in and reinforced by policy making (Luken and Vaughan, 2003). This approach asserts that policy making is not a neutral or value-free process and therefore, in the UK, policy is shaped by those in power and therefore often reflects their values or priorities. One example of this is the way in which civil infrastructures such as public transport tend to be focussed on traditionally male patterns of work and travel, by having the most efficient journeys being from suburban areas to city centres while more local journeys for example between home and places of childcare are less convenient and more time consuming (Criado Perez, 2019). The failure of UK policy to eliminate financial and health inequities has implications across the life course which often affect women disproportionately to men (Marmot, 2020; Public Health England, 2019). The research reported here confirms the importance of SES in terms of promoting better health and wellbeing through its statistical analysis of the Understanding Society dataset (see section 4.5.1) and thus supports existing literature (Hosseinpoor et al., 2012; Lukaschek et al., 2017; MacIntyre et al., 2003). Women are more likely to experience financial difficulties in later life and issues

such as insecure housing can have a negative impact on health and wellbeing (Farrar et al., 2019; Power, 2020).

For women who live alone in later life in the UK there are a number of policies which may affect their experience of later life. Recent pension reforms link pension entitlement on National Insurance contributions throughout the life course: this indirectly discriminates against women who often have interrupted earnings as a result of care responsibilities. The age at which women qualify for pensions has been raising since 2010 from 60 to 67 years by 2028. This is something which many women had not been able to plan for as it is a recent change, creating financial instability in later life (Department for Work and Pensions, 2014). Other government policies are encouraging longer working lives (Department for Work and Pensions, 2017). While citing the financial and health benefits of work, this also serves to reinforce the idea of a person's value being attached to their productivity or their role in the labour market. It also then presents issues around identity and value for those unable to continue working by elevating the status of independence and activity (Holstein, 2018; Katz, 2000). These themes of productivity and work are explored further in section 8.3.4 in the context of the results from the qualitative analysis regarding volunteering and retirement.

Another example of how policy may impact on health and wellbeing is demonstrated with the decision to devolve powers from central to local governments which has impacted on health service provision across the four countries of the UK (Bevan, 2014). While devolution is intended to improve local health and wellbeing outcomes by enabling local government to budget and plan services according to local need, there is evidence that there remain imbalances in terms of health and wellbeing outcomes across the UK (Public Health England, 2018). There were regional variations evident in the statistical analysis presented in chapter five. For example, for those women who lived alone, UK region, or country, was more often a predictor of varying health and wellbeing outcomes than for those who cohabited (see section 5.5.2). While the results were not consistently indicative of a particular strength of one area over another it is interesting that these regional variations were more often significant for those living alone, perhaps suggesting that in lieu of the support of cohabiting family those women living alone may be more susceptible to variations in local authority support.

8.3.2 Active ageing

Active or successful ageing refer to approaches towards promoting health and wellbeing in later life by encouraging positive health behaviours such as remaining physically active and engaged in civic activities (see section 2.2.6 for more detail). This approach has been

embraced globally as a way in which to manage the projected costs of an ageing population (World Health Organisation, 2016) and is reflected in UK policy and global research (Department for Health and Social Care, 2018; Public Health England, 2020; Seah et al., 2019). While the aims of many of these policies is to improve health and wellbeing outcomes and the individual experience of later life, a critical lens considers the context in which these approaches are promoted. An increasingly neoliberal approach in government policy in the UK has seen a decrease in public services and a focus on shifting responsibility for support in later life away from the government (Gilleard and Higgs, 2005). Policy such as this can affect women disproportionately to men (Foster and Walker, 2013) as life course trajectories may limit opportunities in later life. The choice to engage in an active ageing lifestyle may be an illusory one if the societal structures are not in place to support healthy decision making (Calasanti, 2002). For example, policies which are based on assumptions of women as (often unpaid) caregivers, or which base pensions on paid earnings will create a society in which some older women will not have the resources with which to engage in active ageing lifestyles. There is also the consideration that social structures such as policy can reinforce attitudes and assumptions which provides an overemphasis on independence and individualism. This in turn can reinforce negative perceptions of later life as successful ageing is embodied as a rejection of the ageing process (Holstein and Minkler, 2003; Holstein, 2018; Segal, 2017).

Many of these values which devalue dependence and ageing are culturally embedded. The research reported in this thesis suggests that women who lived with people other than their partner are at risk of poorer mental health which may be, in part, linked with cultural expectations and norms (see section 4.5.2). This is consistent with evidence from a global context. Research carried out on Western, individualistic populations suggests that living with a partner is predictive of better health than living alone, while living with other family members is often predictive of the poorest health (Hughes and Waite, 2002; Saito et al., 2017; Sarkar et al., 2012; Weissman and Russel, 2018). Further evidence, especially longitudinal analysis, is required in order to establish a better understanding of the cause-and-effect nature of this within a UK context.

The qualitative analyses presented in chapter seven and eight demonstrate aspects of this idea of active ageing in the theme of *Busyness*, for example (see section 7.4.2). This related to a sense of needing to be busy, productive, or useful. For many of the women this was enacted through volunteering or engagement in local social groups (discussed in more detail in section 8.3.4). Another way in which this was evident is in the theme of *Ownership*, in which the women described ways in which they were taking choices to maintain their health, wellbeing and independence. Several of the women

emphasised the exercise they took, the many activities in which they were engaged or positive dietary choices. Denise, for example, described her cycling and a keen interest in remaining as fit and well as she could. She also was irritated at being considered vulnerable due to her age by her volunteering colleagues and was keen to emphasise that she did not feel old, echoing this rejection of ageing or being classed as 'old' which is discussed in the critical literature (Barken, 2019; Gulette, 2004; Hunt, 2005). This suggests there is more work to be done to balance the well-meaning aspects of active ageing with the consequences for reinforcing and embedding cultural values by elevating the status of youth and independence. Within a public health context this may be related to education and enabling informed choice, but beyond this there is a wider need for policy and practice which seeks to reduce the individualistic tendencies of existing discourse.

8.3.3 Work and identity

The linkages between productivity and identity were a major theme in the qualitative analyses presented in chapters six and seven. Despite being retired, many of the women interviewed for this project shared experiences which suggested their identity was related to their working lives and their current productive activities (see sections 6.2.1 and 7.4.2b). In terms of the experience of living alone this presented a challenge for some of the women in that following retirement their

identity required reshaping in some way to create continuity. The value of work in helping to shape identity is well acknowledged in the existing literature (Howie et al., 2004; Jahoda, 1982; Laws, 1995; Unruh, 2004). There is evidence which suggests involuntary removal from the work force can affect cognition and life satisfaction in later life (Sarabia-Cobo et al., 2020). A feminist gerontological lens enables us to consider the structural forces at play in terms of retirement which is in itself a societal phenomenon (Barken, 2019). By having expectations around what citizens do at each stage of the life course, the processes around ageing become stratified and assumptions around appropriate behaviour are reinforced by policy, for example that around retirement and pensions (Department for Work and Pensions, 2014). For women, this relationship between work and self is often a complicated one due to child rearing and other care work which is often unpaid or invisible (Perez, 2019). Assumptions that women will undertake the bulk of this work is often embedded in policy which then reinforces gender-based expectations and the devaluing of care work (Calasanti, 2010; England, 2005).

As women tend to have multiple roles outside of paid work throughout the life course, their identity in retirement could be suggested to remain relatively unchallenged. The women interviewed for this study were engaged in a mixture of formal and informal activities which provided structure, purpose, and a continuity in terms of sense of self (see section 6.2.1a and 7.4.2a). Most of them were engaged in activities

which were a continuation of their interests throughout the life course. This fostered a sense of continuity in both routine and identity. For some of those who had retired more recently or had their routines challenged by the Covid-19 pandemic or bereavement a tension between continuity and rupture was evident, as discussed in section 6.2.1c where the subtheme of *Absence* highlights the challenges when this tendency to be productive is lacking. An important consideration in terms of life course context for these women is their position as financially secure retirees: they all had the resources to retire at a time of their choosing and were not obliged to engage in further paid work out of necessity.

Interestingly, of the seven women interviewed for this study only one had her own children and one had stepchildren. As a proportion this is considerably less than the general population and suggests that further research involving women who live alone and have children may be of use (Office for National Statistics, [ONS], 2019). The expectations around retiring are changing as the UK is seeing more people with longer life expectancies (Department for Work and Pensions, 2017). Part of the challenge of this is that the pensions system which was previously supporting those in later life depended on having a higher number of people of working age than in retirement. This has seen a development in UK policy which is encouraging people to remain in employment for longer or to become more engaged in civic activities (Cabinet Office, 2010; Department for Work

and Pensions, 2017; Ziersch and Baum, 2004). As with many of the critiques of the active or successful ageing approaches (see sections 2.2.6 and 8.3.2), concerns of this approach centre on the structural elements which maintain life course inequalities which enable or limit engagement in such civic activities.

8.3.4 Volunteering as a complex issue

A large part of civic engagement such as that put forward by the UK government is understood to be participation in activities such as volunteering (Kippin and Lucas, 2020; Martinson and Minkler, 2006; Ziersch and Baum, 2004). There is evidence that volunteering can support positive health and wellbeing in a similar way to employment, to the extent that it has been invoked as a public health issue (Baum and Ziersch, 2003; Jenkinson et al., 2013). Emerging evidence from the Covid-19 pandemic suggests that the cessation of voluntary activities has had a negative impact on the volunteers and not just the recipients of services (Grotz et al., 2020). This latter point was reflected in the qualitative interviews undertaken for this study. The rupture to the routine and connectedness provided by volunteering was evident for several of the participants (see sections 6.2.1c and 6.2.3a).

The evidence from the statistical analysis described in chapter five shows that there is no statistical difference in the rates of volunteering

between those who live alone and those who cohabit (see Table 5.1). However, the regression analyses indicate that engaging in volunteering is far more likely to be a significant predictor of better health and wellbeing for those who live alone than those who cohabit (see section 5.5.3). This was the case for six out of the seven health and wellbeing outcome variables with the exception of health service use as represented by GP visits. This could suggest that volunteering is more consistently related to positive health and wellbeing in those who live alone, perhaps a reflection of the added value this social connectivity has in the absence of a cohabitee. The findings from the qualitative analysis in chapter six certainly supports this as volunteering was engaged in by many of the women and was described in positive terms (see section 6.2.1). Volunteering appeared particularly valued for the provision of structure it provided in addition to the social contact and the sense of purpose following retirement. Some existing evidence suggests that as informal social networks and employment decrease in later life, formal opportunities such as social groups or volunteering are used to replace previous social contact and these findings confirm this (Ang, 2019).

Volunteering is clearly an important factor in creating social cohesion and promoting, social contact and encouraging activity in later life. A critical feminist approach cautions against embracing it as a panacea and points to the wider context in which this political agenda sits (Martinson and Minkler, 2006). There is a suggestion that neoliberal

policies may use volunteering as a means to compensate for decreased governmental responsibility in terms of service provision. As with the promotion of working beyond the traditional retirement age, there is also the concern regarding the elevation of independence and productivity to the detriment of those who are unable to participate (Holstein, 2018; Katz, 2000). Evidence indicates that those who do volunteer tend to be wealthier and in better health initially, suggesting that being in a position to volunteer is privileged (Galenkamp et al., 2016). In order to support engagement in civic activities, policy and voluntary organisations need to consider the structural factors which enable volunteering if it is to be a positive phenomenon for public health. For those women who live alone in later life, further exploration is required to examine the health benefits of volunteering and the factors which may lead to volunteering being a more significant predictor of better health and wellbeing in this group. Longitudinal analysis would be useful in better understanding the causation of these results.

8.4 Limitations of the study

This thesis sets out the results of findings from a scoping review and original research which adds to the existing knowledge regarding the health and wellbeing of old women who live alone in the UK. While the original research questions set out in section 1.3 have been fully answered, there are limitations to the study which require addressing.

Firstly, both the statistical analysis and the qualitative analysis do not address variations in health and wellbeing outcomes between those of differing ethnic backgrounds. The differences in outcomes were not shown by the statistical analysis despite wider evidence to the contrary (Marmot et al., 2020). This was possibly a result of the smaller absolute numbers of people from Black, Asian and minority ethnicity backgrounds in the survey. The typically homogenous nature of sampling in phenomenological research (Groven and Glenn, 2016) meant that the sample for this study did not include those from mixed socioeconomic or ethnic backgrounds. This is a recognised feature of such rich qualitative research and as such is less a limitation of the study but rather an indication of further research to be done. As the focus of the study was on the variations between older women of different household compositions, the research questions remain answered. However, the health and wellbeing of older women from a variety of SES and ethnic backgrounds is an area which requires further attention in future research.

The study focusses on the health and wellbeing of older women who live alone in the UK. As such it provides a contribution to the literature by increasing understanding of this phenomenon. As health and wellbeing are linked with social and cultural contexts, the results are naturally rooted in the UK culture and political environment at the time of research. This means that the findings, while transferable at a broader, conceptual level, may differ from those found in other cultures

or political climates. Embedding the findings within wider literature, such as in sections 8.1 to 8.3, enable the consideration of how these findings might relate to wider contexts. One particular aspect of this is the undertaking of the qualitative interviews during the Covid-19 pandemic. This, naturally, affected the experiences shared in the interviews. However, a consideration of the results within the existing evidence suggests that the findings were consistent with what is currently known about this area. It also provides a rich, valuable and relevant insight into the experience of living alone during such an important and unusual time in UK history.

Finally, the research questions one and two identified by the literature review in chapter two, focused on understanding if and how the health and wellbeing of older women living alone differed from those who lived with others. To this end, cross-sectional analysis of the data from the UKHLS was undertaken, guided by existing literature in the field (Chiu, 2018; Oh et al., 2015; Sok and Yun, 2011; Weissman and Russell, 2018). This enabled a better understanding of the nature of health and wellbeing of older women who live alone and how predictors of health and wellbeing vary from those who cohabit. One limitation of this is the cross-sectional nature of the analysis in terms of understanding the determinants of health. This study shows important differences between household types, this in turn indicates the need for further analysis utilising a longitudinal approach to better

understand the causative nature of household composition on health and wellbeing for older women in the UK.

8.5 Implications for policy, practice, and research

8.5.1 Implications for policy

The findings in this study indicate that older women who live alone in the UK are more likely to be older and in poorer health than older women who cohabit. This indicates a need for UK policy to address potential needs of this population which may, in those who cohabit, be met by family members. Current policy affects individuals differently and gender is an important factor in this. Pension changes in the UK such as those made by the Department of Business, Innovation and Skills (2010), which increase the age of retirement, have affected women disproportionately putting them at higher risk of financial instability in later life. This is even more significant for those who live alone, for whom SES can mitigate much of the effect of living alone (see section 4.5.1). One aspect of this involves reconsidering how unpaid care work is valued as this is something which often negatively impacts on the wellbeing of women in later life.

Another finding from this study indicates that practical support is something which is valued by older women who live alone in the UK (see section 6.2.2a). Access to trustworthy and affordable assistance when required can support women to remain in their homes safely.

8.5.2 Implications for practice

Findings from this study indicate that public health and health services in the UK need to be aware that there are differing needs for older women living alone than for those who cohabit with partners and those who live with others (see section 4.5.2). It confirms that public health needs assessments and individual healthcare assessments should take this into account in order to provide suitable and efficient services. Women who live alone may require support in terms of decision-making so services which provide advice and advocacy are likely to be useful.

This evidence adds to the growing literature which underlines the heterogeneity of experiences and need in later life. Women who live alone differ from those who cohabit in terms of their health and wellbeing outcomes but there are also a range of life course factors which create disparities within the group. Practitioners should be encouraged to take a life course approach, considering the individual trajectory of service users in order to determine the most appropriate intervention.

8.5.3 Suggestions for future research

The findings from this study have contributed to what was previously known about the health and wellbeing of older women living alone in the UK. Based on the results presented in this thesis, there are some

key areas which require further research. There are some significant variations in the health and wellbeing status of those who live alone and those who cohabit. There were also differences in the ways in which determinants of health affected the health and wellbeing of older women depending on their living arrangements. Further examination of the relationship between the determinants of health and living arrangements is indicated: longitudinal analysis of data such as that generated from the Understanding Society project would be one way of achieving this.

One in six people in the UK belong to Black, Asian and minority ethnicity (BAME) groups. However, little is currently known about health and wellbeing in this population (Office for National Statistics, [ONS], 2020c; Watkinson et al., 2021). Initial findings in the descriptive analysis in this study suggest that women who live alone in later life may be less likely to come from BAME backgrounds which made statistical analysis of this group difficult: further exploration of the health and wellbeing of BAME women living alone is encouraged.

Finally, the homogenous sampling typical of phenomenological studies means that the White, financially secure, healthy, and 'young' old group interviewed for this study will show only some of the experiences of older women who live alone in the UK. Further studies of the experience of women from a wider range of demographic and

cultural backgrounds is suggested. Particular areas which would be useful are the examination of women who are from the 'older old' age group (85+) and those who are in less affluent groups in addition to women from BAME backgrounds. These groups are often underrepresented in research and more evidence is required on their health and wellbeing.

8.6 Summary of the chapter

This chapter concludes the thesis by drawing together the findings from both the qualitative and the quantitative analyses carried out for this study. Statistical analysis considering household composition as a predictor of health and wellbeing for older women concluded that the effect of living alone is largely mitigated by SES, however, comparisons between women who live alone, and their cohabiting counterparts shows that those who live alone do tend to be older and in poorer health. Further statistical analysis indicated that predictors of health and wellbeing such as time-use or local resources, impact variably on the health and wellbeing of older women depending on their household composition. This suggested differences in the needs of women who live alone in later life in order to promote their health and wellbeing. Analysis of qualitative data suggested that the experience of living alone is shaped by factors such as choice, relationship history and support networks. The management of practical tasks was found to be an important finding as was the

importance of a sense of productivity. Life course trajectories can affect financial resources and levels of adaptation required to live alone. The extent to which a sense of self is challenged by living alone is also shaped by life course factors such as friendship networks and employment history.

The findings from the original research were presented in this chapter alongside the existing evidence base and examined using the lens of feminist gerontology in order to synthesise the findings at a conceptual level. The outcomes of this synthesis were presented with a focus on the different contexts in which ageing takes place in order to consider how the various aspects of the findings affect the health and wellbeing of older women living alone. This moved from the embodied, micro contexts of ageing to the wider socio-political contexts. Lastly, the evidence was used to support suggestions as to how the findings of this study contribute to the existing knowledge base. Further research directions have been identified through highlighting important areas which require development. Suggestions were made as to how public health practice can incorporate these findings in order to promote the health and wellbeing for older women living alone. Finally, suggestions were made as to how UK policy may make use of these findings in order to improve health and wellbeing outcomes in this population and reduce health inequities.

What is already known about the topic:

- Women are more likely than men to live alone in later life.
- Women are at risk of poorer health than men in later life.
- Some studies indicate that those who live alone are at risk of poorer health outcomes in later life.

The study's specific contributions to knowledge:

- Living alone is not predictive of poorer health and wellbeing when SES is controlled for.
- Living with 'others' is predictive of poorer mental health and life satisfaction.
- The experience of living alone as an older woman is complex and multifaceted. Key themes include connectivity beyond the home and tensions between self-efficacy and independence.
- Access to reliable and trustworthy support is an important issue for maintaining independence when living alone.
- Life course factors including (but not limited to) relationship history can shape how women experience living alone.

References

Adler, R. H. (2009). Engel's biopsychosocial model is still relevant today. *Journal of Psychosomatic Research*, 67(6).

Age UK. (2015). *Evidence review of loneliness in later life*. London: Age UK.

Alaminos, E. and Ayuso, M., (2019). Marital Status, Gender, Mortality and Pensions. *Reis: Revista Española de Investigaciones Sociológicas*, (165), 3-24.

Andersson, L. (1998). Loneliness research and interventions: A review of the literature. *Aging & Mental Health*, 2(4) 264-274.

Ang, S. (2019). Life course social connectedness: Age-cohort trends in social participation. *Advances in Life Course Research*, 39, 13-22.

Arber, S., Davidson, K., & Ginn, J. (2003). *Gender and ageing: Changing roles and relationships: Changing roles and relationships* McGraw-Hill Education (UK).

Arber, S., Fenn, K., & Meadows, R. (2014). Subjective financial wellbeing, income, and health inequalities in mid and later life in Britain. *Social Science & Medicine*, 100, 12-20.

Audit Commission. (1986). *Making a reality of community care*. The audit commission for local authorities in England and Wales.

Badawi, G., Pagé, V., Smith, K. J., Gariépy, G., Malla, A., Wang, J., Schmitz, N. (2013). Self-rated health: A predictor for the three-year incidence of major depression in individuals with type II diabetes. *Journal of Affective Disorders*, 145(1), 100-105.

Band-Winterstein, T., & Manchik-Rimon, C. (2014). The experience of being an old never-married single: A life course perspective. *The*

International Journal of Aging and Human Development, 78(4), 379-401.

Banks, L., Haynes, P., & Hill, M. (2009). Living in single person households and the risk of isolation in later life. *International Journal of Ageing and Later Life*, 4(1).

Barken, R., (2019). "Old age" as a social location: Theorizing institutional processes, cultural expectations, and interactional practices. *Sociology Compass*, 13(4) e12673.

Barnes, M., Blom, A. G., Cox, K., Lessof, C., & Walker, A. (2006). *The social exclusion of older people: Evidence from the first wave of the English longitudinal study of ageing (ELSA), final report*. London.

Barry, A., Heale, R., Pilon, R., & Lavoie, A. M. (2018). The meaning of home for ageing women living alone: An evolutionary concept analysis. *Health & Social Care in the Community*, 26(3), e337-344.

Baum, F.E. and Ziersch, A.M. (2003). Social capital. *Journal of Epidemiology and Community Health* (1979), 57(5), 320-323.

Beller, J., & Wagner, A. (2018). Disentangling loneliness: Differential effects of subjective loneliness, network quality, network size, and living alone on physical, mental, and cognitive health. *Journal of Aging and Health*, 30(4), 521-539.

Beneito-Montagut, R., Cassián-Yde, N., & Begueria, A. (2018). What do we know about the relationship between internet-mediated interaction and social isolation and loneliness in later life? *Quality in Ageing and Older Adults*.

Benning, T. B. (2015). Limitations of the biopsychosocial model in psychiatry. *Advances in Medical Education and Practice*, 6, 347.

Bergland, A., & Engedal, K. (2011). Living arrangements, social networks, health, mobility, and balance of older women. *Physical & Occupational Therapy in Geriatrics*, 29(2), 90-101.

Bevan, G., Karanikolos, M., Exley, J., Nolte, E., Connolly, S., & Mays, N. (2014). *The four health systems of the United Kingdom: How do they compare?* Summary Report.

Bliggs, S., 2001. Toward critical narrativity: Stories of aging in contemporary social policy. *Journal of Aging Studies*, 15(4), pp. 303-316.

Bingham, J. (2014). Britain the loneliness capital of Europe. *The Telegraph*. Retrieved from <https://www.telegraph.co.uk/news/politics/10909524/Britain-the-loneliness-capital-of-Europe.html>

Blieszner, R., Ogletree, A.M. and Adams, R.G. (2019). Friendship in later life: A research agenda. *Innovation in Aging*, 3(1), 005.

Bond, J., & Cabrero, G. R. (2007). Health and dependency in later life. *Ageing in society*, 3, 113-41.

Bongaarts, J., and Zimmer, Z. (2002). Living arrangements of older adults in the developing world: An analysis of demographic and health survey household surveys. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 57(3), S14-S157.

Borell, K., and Karlsson, S. G. (2003). Re-conceptualizing intimacy and ageing: Living apart together. *Gender and Ageing*, 1(1), 1-15.

Bowling, A. (2014). *Research methods in health: Investigating health and health services* (Fourth edition). Open University Press, Berkshire

Bozalek, V. and Hooyman, N. R. (2012). *Ageing and intergenerational care: Critical/political ethics of care and feminist gerontology perspectives*. *Agenda: Empowering Women for Gender Equity*, 26(4 (94)).

Brannen, J., and Nilsen, A. (2005). Individualisation, choice and structure: A discussion of current trends in sociological analysis. *The Sociological Review*, 53(3), 412-428.

Breen, H., and Hing, N. (2014). Life course analysis of gambling trajectories: An indigenous Australian study. *International Gambling Studies*, 14(3), 357-373.

British Medical Association [BMA]. (2016). *Growing older in the UK*. London: British Medical Association. Retrieved from <https://www.bma.org.uk/collective-voice/policy-and-research/public-and-population-health/healthy-ageing>

Brocki, J.M. and Wearden, A.J. (2006). A critical evaluation of the use of interpretative phenomenological analysis (IPA) in health psychology. *Psychology & Health*, 21(1).

Brotman, S., Ferrer, I. and Koehn, S. (2020). Situating the life story narratives of aging immigrants within a structural context: the intersectional life course perspective as research praxis. *Qualitative research: QR*, 20(4).

Bruner, J. (1991). The narrative construction of reality. *Critical Inquiry*, 18(1).

Bülow, M. H., and Söderqvist, T. (2014). Successful ageing: A historical overview and critical analysis of a successful concept. *Journal of Aging Studies*, 31(1).

Burdine, J. N., Felix, M. R., Abel, A. L., Wiltraut, C., and Musselman, Y. (2000). The SF-12 as a population health measure: An exploratory examination of potential for application. *Health Services Research*, 35(4).

Burholt, V., Windle, G. and Morgan, D.J. (2017). A social model of loneliness: The roles of disability, social resources, and cognitive impairment. *The Gerontologist*, 57(6).

Burr, J.A., Tavares, J. and Mutchler, J.E. (2011). Volunteering and Hypertension Risk in Later Life. *Journal of Aging and Health*, 23(1).

Byhoff, E., Tripodis, Y., Freund, K. M., & Garg, A. (2019). Gender differences in social and behavioural determinants of health in aging adults. *Journal of General Internal Medicine*, 34(11), 2310-2312.

Byles, J.E., Rahman, M.M., Princehorn, E.M., Holliday, E.G., Leigh, L., Loxton, D., Beard, J., Kowal, P. and Jagger, C., (2019). Successful ageing from old to very old: a longitudinal study of 12,432 women from Australia. *Age and ageing*, 48(6),803-810.

Cacioppo, J. T., Cacioppo, S., and Boomsma, D. I. (2014). Evolutionary mechanisms for loneliness. *Cognition & Emotion*, 28(1), 3-21.

Calasanti, T. (2010). Gender relations and applied research on aging. *The Gerontologist*, 50(6), 720-734.

Calasanti, T. (2005) Ageism, Gravity, and Gender: Experiences of Aging Bodies. *Generations* (San Francisco, Calif.), 29(3), 8-12.

Calasanti, T. (2002). Work and retirement in the 21st century: Integrating issues of diversity and globalization. *Ageing International*, 27(3), 3-20.

Caley, M., and Sidhu, K. (2011). Estimating the future healthcare costs of an aging population in the UK: Expansion of morbidity and the need for preventative care. *Journal of Public Health*, 33(1), 117-122.

Carp, F. M., and Christensen, D. L. (1986). Technical environmental assessment predictors of residential satisfaction. A study of elderly women living alone. *Research on Aging*, 8(2), 269.

Cassidy, E., Reynolds, F., Naylor, S. and De Souza, L., (2011). Using interpretative phenomenological analysis to inform physiotherapy practice: An introduction with reference to the lived experience of cerebellar ataxia. *Physiotherapy Theory and Practice*, 27(4), 263-277.

Cattan, M., White, M., Bond, J., and Learmouth, L. (2005). Preventing social isolation and loneliness among older people: A systematic review of health promotion interventions. *Ageing and Society*, 25(1), 41-67.

Cederbom, S., Söderlund, A., Denison, E., and von, H. W. (2014). Chronic pain among older women living alone. A study focusing on disability and morale. *European Journal of Physiotherapy*, 16(3), 139-150.

Centre for Ageing Better. (2021). *Getting our homes in order: How England's homes are failing us*. London.

Cermakova, P., Nelson, M., Secnik, J., Garcia-Ptacek, S., Johnell, K., Fastbom, J., Religa, D. (2017). Living alone with Alzheimer's disease: Data from SveDem, the Swedish dementia registry. *Journal of Alzheimer's Disease*, 58(4), 1265-1272.

Chamberlain, K. (2000). Methodolatry and qualitative health research. *Journal of Health Psychology*, 5(3), 285-296.

Chandler, J., Williams, M., Maconachie, M., and Collett, T. (2003). Living alone: Its place in household formation and change. *Sociological Research Online*, 9(1), 1-13.

Cheng, C-Y (2006). Living alone: The choice and health of older women. *Journal of Gerontological Nursing*, 32(9), 16.

Chng, S., White, M., Abraham, C. and Skippon, S. (2016). Commuting and wellbeing in London: the roles of commute mode and local public transport connectivity. *Preventive Medicine*, 88, 182-188.

Chiu, C. (2019). Living arrangements and disability-free life expectancy in the united states. *PloS One*, 14(2), e0211894.

Choi, L.H., (2003). Factors affecting volunteerism among older adults. *Journal of Applied Gerontology*, 22(2), 179-196.

Choi, N.G. and Kim, J., (2011). The effect of time volunteering and charitable donations in later life on psychological wellbeing. *Ageing and Society*, 31(4), 590-610.

Chou, K., Ho, A. H. Y., & Chi, I. (2006). Living alone and depression in Chinese older adults. *Aging & Mental Health*, 10(6), 583-591.

Christensen, K., Doblhammer, G., Rau, R. and Vaupel, J. W. (2009). Ageing populations: The challenges ahead. *The Lancet*, 374 (9696), 1196–1208.

Clair, A. and Hughes, A., 2019. Housing and health: new evidence using biomarker data. *J Epidemiol Community Health*, 73(3), 256-262.

Clandinin, D.J., (2006). Narrative Inquiry: A Methodology for Studying Lived Experience. *Research Studies in Music Education*, 27(1), 44-54.

Clark, B., Chatterjee, K., Martin, A., and Davis, A. (2019). How commuting affects subjective wellbeing. *Transportation*. 1-29.

Collins, J. M. (1993). Functional health, social support, and morale of older women living alone in Appalachia. *Kentucky Nurse*, 41(3), 13.

Connidis, I. (1983). Living arrangement choices of older residents: Assessing quantitative results with qualitative data. *The Canadian Journal of Sociology / Cahiers Canadiens De Sociologie*, 8(4), 359-375.

Cotten, S.R., Anderson, W.A. and Mccullough, B.M., (2013). Impact of internet use on loneliness and contact with others among older adults: cross-sectional analysis. *Journal of Medical Internet Research*, 15(2), e39.

Council for the European Union. (2012). *Council Declaration on the European Year for Active Ageing and Solidarity between Generations (2012): The Way Forward*. Brussels.

Craciun, C., Gellert, P., and Flick, U. (2015). Is healthy ageing for all? the role of positive views on ageing in preparing for a healthy old age in a precarious context. *European Health Psychologist*, 17(2), 79-84.

Crespi, I., Zanier, M., Santoni, C., Fermani, A., and D'Ambrosi, L. (2015). Family, work and old women's situation in Italy and Spain: New gender inequalities. *About Gender*, 4(8)

Cresswell, JW, Shope, R., Vicki L Plano Clark, V, L., and O Green, D. (2006). How interpretive qualitative research extends mixed methods research. *Research in the Schools*, 13(1), 1.

Cruikshank, M. (2008). Aging and identity politics. *Journal of Aging Studies*, 22(2), 147-151.

Dahlberg, L., McKee E, K.J., Frank, A. and Naseer, M., (2021). A systematic review of longitudinal risk factors for loneliness in older adults. *Aging & Mental Health*, 1-25.

Davies, N., Crowe, M. and Whitehead, L., (2016). Establishing routines to cope with the loneliness associated with widowhood: a

narrative analysis. *Journal of Psychiatric and Mental Health Nursing*, 23(8), 532-539.

Davis, M. A., Moritz, D. J., Neuhaus, J. M., Barclay, J. D., and Gee, L. (1997). Living arrangements, changes in living arrangements, and survival among community dwelling older adults. *American Journal of Public Health*, 87(3), 371-377.

De Beauvoir, S., (1953). *The Second Sex*, trans. and ed. HM Parshley. New York: Knopf, 1993, 44-73.

De Jong Gierveld, J. (2003). Well-being of older men and women living alone. *Gender and ageing: Changing roles and relationships*, 95.

De Jong Gierveld, J., Keating, N., and Fast, J. E. (2015). Determinants of loneliness among older adults in Canada. *Canadian Journal on Aging*, 34(2), 125-136.

De Jong Gierveld, J., and Van Tilburg, T. (1999). Living arrangements of older adults in the Netherlands and Italy: Co-residence values and behaviour and their consequences for loneliness. *Journal of Cross-Cultural Gerontology*, 14(1).

Desai, R., John, A., Stott, J. and Charlesworth, G., (2020). Living alone and risk of dementia: A systematic review and meta-analysis. *Ageing Research Reviews*, 101-122.

De Witt, L., Ploeg, J., & Black, M. (2010). Living alone with dementia: An interpretive phenomenological study. *Journal of Advanced Nursing*, 66(8), 1698-1707.

Dean, A., Kolody, B., Wood, P., and Matt, G. E. (1992). The influence of living alone on depression in elderly persons. *Journal of Aging and Health*, 4(1), 3-18.

De Leon, C., Seeman, T. E., Baker, D. I., Richardson, E. D., and Tinetti, M. E. (1996). Self-efficacy, physical decline, and change in functioning in community-living elders: A prospective study. *Journals of Gerontology Series B-Psychological Sciences and Social Sciences*, 51(4), S18-S190.

Department of Business, Innovation and Skills. (2010). *Phasing out the default retirement age*. London: Department of Business, Innovation and Skills. Retrieved from <http://data.theeuropeanlibrary.org/BibliographicResource/3000086483667>

Department of Health. (2014). *Care and support statutory guidance issued under the care act 2014*. London: Department of Health.

Department for Health and Social Care. (2018). *Prevention is better than cure: Our vision to help you live well for longer*. London: DHSC London.

Department for Work and Pensions. (2017). *Fuller working lives. A partnership approach*. London: Department for Work and Pensions.

Department for Work and Pensions. (2014). *Pensions Act 2014*. London: Department for work and Pensions.

DeSalvo, K. B., Bloser, N., Reynolds, K., He, J., & Muntner, P. (2006). Mortality prediction with a single general self-rated health question: A meta-analysis. *Journal of General Internal Medicine*, 21(3), 267-275.

Di Gessa, G., Corna, L. M., Platts, L. G., Worts, D., McDonough, P., Sacker, A., Stressforskningsinstitutet. (2017). Is being in paid work beyond state pension age beneficial for health? evidence from england using a life-course approach. *Journal of Epidemiology and Community Health*, 71(5), 431-438.

Dunatchik, A., Icardi, R. and Blake, M., (2019). Predicting Unmet Need for Social Care. *Journal of Long-Term Care*, (Nov 19), 194-205.

Dwyer, M., Gray, A., & Renwick, M. (2000). *Factors affecting the ability of older people to live independently: A report for the international year of the older persons*. Wellington: Ministry of Social Policy.

Dykstra, P. (2009). Older adult loneliness: Myths and realities. *European Journal of Ageing: Social, Behavioural and Health Perspective*, 6(2), 91-100.

Eatough, V. and Smith, J.A., 2008. Interpretative phenomenological analysis. *The Sage handbook of qualitative research in psychology*, 179, 194.

Elder Jr, G. H. (1994). Time, human agency, and social change: Perspectives on the life course. *Social Psychology Quarterly*, 57(1), 4-15.

Engel, G. L. (1977). The need for a new medical model: A challenge for biomedicine. *Science*, 196 (4286), 129-136.

England, P. (2005). Emerging theories of care work. *Annual Review Sociology*, 31, 381-399.

Eshbaugh, E. M. (2008). Perceptions of living alone among older adult women. *Journal of Community Health Nursing*, 25(3), 125-137.

Estes, C. (2008). A first generation critic comes of age: Reflections of a critical gerontologist. *Journal of Aging Studies*, 22(2), 120-131.

Estes, C. L. (2004). Social security privatization and older women: A feminist political economy perspective. *Journal of Aging Studies*, 18(1), 9-26.

Estes, C. L., Biggs, S., & Phillipson, C. (2003). *Social theory, social policy and ageing: A critical introduction* (1st ed.). Maidenhead: Open University Press.

Etienne, J., & Jackson, S. (2010). Beyond the home. *Innovations in Lifelong Learning: Critical Perspectives on Diversity, Participation and Vocational Learning*, 49.

Evandrou, M., Falkingham, J., Qin, M. and Vlachantoni, A., (2020). *Changing living arrangements, family dynamics and stress during lockdown: evidence from four birth cohorts in the UK*. Available at: https://eprints.soton.ac.uk/443865/1/family_dynamics_during_covid_19_final.pdf

Evandrou, M., Falkingham, J., Feng, Z., & Vlachantoni, A. (2016). Ethnic inequalities in limiting health and self-reported health in later life revisited. *Journal of Epidemiology and Community Health*, 70(7), 653-662.

Evans, B.C., Coon, D.W. and Ume, E., (2011). Use of Theoretical Frameworks as a Pragmatic Guide for Mixed Methods Studies: A Methodological Necessity? *Journal of Mixed Methods Research*, 5(4), 276-292.

Farrar, S., Moiser, J., Lean, J. and Hyde, M., (2019). Gender, financial literacy, and preretirement planning in the UK. *Journal of Women & Aging*, 31(4), pp. 319-339.

Field, A.P. (2018) *Discovering statistics using IBM SPSS statistics*, 5th edn, SAGE, Los Angeles.

Fingerman, K.L., Ng, Y.T., Zhang, S., Britt, K., Colera, G., Birditt, K.S. and Charles, S.T. (2021). Living alone during COVID-19: Social contact and emotional well-being among older adults. *The Journals of Gerontology: Series B*, 76(3), e116-e121.

Finlay, L. (2011). *Phenomenology for therapists: Researching the lived world*. GB: Wiley-Blackwell.

Fiori, K. L., Antonucci, T. C., & Cortina, K. S. (2006). Social network typologies and mental health among older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 61(1), 25-32.

Fitzroy, F. R., & Nolan, M. A. (2018). Education, income and happiness: Panel evidence for the UK. *Empirical Economics*, 1-20.

Forsman, A.K. and Nordmyr, J., (2017). Psychosocial Links Between Internet Use and Mental Health in Later Life: A Systematic Review of Quantitative and Qualitative Evidence. *Journal of Applied Gerontology*, 36(12), 1471-1518.

Forsman, A. K., Herberts, C., Nyqvist, F., Wahlbeck, K., & Schierenbeck, I. (2013). Understanding the role of social capital for mental wellbeing among older adults. *Ageing & Society*, 33(5), 804-825.

Forward, C., Khan, H. and Fox, P., (2020). The health and well-being of older women living alone in the United Kingdom and beyond: a scoping review. *Journal of Women & Aging*, 1-14.

Foster, P., & Neville, S. (2010). Women over the age of 85 years who live alone: A descriptive study. *Nursing Praxis in New Zealand*, 26(1), 4-13.

Foster, L., Tomlinson, M., & Walker, A. (2018). Older people and social quality – what difference does income make? *Ageing and Society*, 1-26.

Foster, L. and Walker, A., (2013). Gender and active ageing in Europe. *European Journal of Ageing*, 10(1), 3-10.

Frazer, S. M., Oyeboode, J. R., & Cleary, A. (2012). How older women who live alone with dementia make sense of their experiences: An interpretative phenomenological analysis. *Dementia*, 11(5), 677-693.

Freixas, A., Luque, B., & Reina, A. (2012). Critical feminist gerontology: In the back room of research. *Journal of Women & Aging*, 24(1), 44-58.

French, D. J., Sargent-Cox, K., & Luszcz, M. A. (2012). Correlates of subjective health across the aging lifespan: Understanding self-rated health in the oldest old. *Journal of Aging and Health*, 24(8), 1449-1469.

Friedman, E. M., & Ryff, C. D. (2012). Living well with medical comorbidities: A biopsychosocial perspective. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 67(5), 535-544.

Fries, J. F. (2005). The compression of morbidity. *The Milbank Quarterly*, 83(4), 801-823.

Fujino, Y., & Matsuda, S. (2009). Prospective study of living arrangement by the ability to receive informal care and survival among Japanese elderly. *Preventive Medicine*, 48(1), 79-85.

Gagliardi, C., Spazzafumo, L., Marcellini, F., Mollenkopf, H., Ruoppila, I., Tacken, M., & Szemann, Z. (2007). The outdoor mobility and leisure activities of older people in five European countries. *Ageing and Society*, 27, 683.

Galenkamp, H., Gagliardi, C., Principi, A., Golinowska, S., Moreira, A., Schmidt, A.E., Winkelmann, J., Sowa, A., van der Pas, S. and Deeg, D.J., (2016). Predictors of social leisure activities in older Europeans with and without multimorbidity. *European Journal of Ageing*, 13(2), 129-143.

Gaymu, J., Delbès, C., Springer, S., Binet, A., Désesquelles, A., Kalogirou, S., & Ziegler, U. (2006). Determinants of the living

arrangements of older people in Europe déterminants des modes de vie des personnes âgées en Europe. *European Journal of Population/Revue Européenne De Démographie*, 22(3), 241-262.

Gaymu, J., Springer, S. and Stringer, L., (2012). How does living alone or with a partner influence life satisfaction among older men and women in Europe? *Population*, 67(1), 43-69.

Gibney, S., Zhang, M., & Brennan, C. (2020). Age-friendly environments and psychosocial wellbeing: A study of older urban residents in Ireland. *Aging & mental health*, 24(12), 2022-2033.

Gierveld, J. d. J. (1998). A review of loneliness: Concept and definitions, determinants and consequences. *Reviews in Clinical Gerontology*, 8(1), 73-80.

Giuntella, O., Kone, Z. L., Ruiz, I., & Vargas-Silva, C. (2018). Reason for immigration and immigrants' health. *Public health*, 158, 102-109.

Gilleard, C. and Higgs, P., (2005). *Contexts of ageing: Class, cohort and community*. Polity, Cambridge.

Gilleard, C., Jones, I. and Higgs, P. (2015). Connectivity in later life: The declining age divide in mobile cell phone ownership. *Sociological research online*, 20(2), 1-13.

Giron, P. (2016). Time trends in self-rated health and disability in older Spanish people: differences by gender and age. *Iranian journal of public health*, 45(3), 289.

Goldberg DP. (1972). *The detection of psychiatric illness by questionnaire*. London, Oxford University Press.

Government Office for Science. (2016). *Future of an aging population*. London: Government Office for Science.

Grady, J. (2015). Gendering pensions: Making women visible. *Gender, Work & Organization*, 22(5), 445-458.

Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information & Libraries Journal*, 26(2) 91-108.

Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis*, 11(3), 255-274.

Greenwood, N., Pound, C., Brearley, S., & Smith, R. (2019). A qualitative study of older informal carers' experiences and perceptions of their caring role. *Maturitas*, 124, 1-7.

Grenier, A. M. (2005). The contextual and social locations of older women's experiences of disability and decline. *Journal of Aging Studies*, 19(2), 131-146.

Griep, Y., Hanson, L.M., Vantilborgh, T., Janssens, L., Jones, S.K., Hyde, M., (2017). Can volunteering in later life reduce the risk of dementia? A 5-year longitudinal study among volunteering and non-volunteering retired seniors. *PLOS ONE*, 12(3), e0173885.

Grotz, J., Dyson, S. and Birt, L. (2020). Pandemic policy making: the health and wellbeing effects of the cessation of volunteering on older adults during the COVID-19 pandemic. *Quality in Ageing and Older Adults*.

Groven, K.S. and Glenn, N.M., (2016). The experience of regaining weight following weight loss surgery: A narrative-phenomenological exploration. *Health care for women international*, 37(11), 1185-1202.

Gullette, M. M. (2004). *Aged by culture*. University of Chicago Press.

Hafford-Letchfield, T., Khan, H., & Lambert, N. (2014). Going solo: Exploring the intimate and broader relationships of older single

women without children and the implications for their support needs in later life. Paper presented at the *43rd Annual Conference of the British Society of Gerontology*, Southampton.

Hagan Hennessy, C., & Means, R. (Eds.). (2014). *Countryside connections: Older people, community and place in rural Britain*. London: Policy Press.

Hajek, A., & König, H. (2017). The association of falls with loneliness and social exclusion: Evidence from the DEAS German ageing survey. *BMC Geriatrics*, 17(1), 204.

Hancock, M. (2018). Prevention, detection, intervention: The big wins for mental health. *The Lancet*, 392 (10157), 1499-1500.

Hank, K., & Wagner, M. (2013). Parenthood, marital status, and wellbeing in later life: Evidence from SHARE. *Social Indicators Research*, 114 (2), 639-653.

Hanna, P., (2012). Using internet technologies (such as Skype) as a research medium: A research note. *Qualitative research*, 12(2), 239-242.

Hannan, L., Carney, G., Devine, P. and Hodge, G., (2019). "A View from Old Age": Women's lives as narrated through objects. *Life Writing*, 16(1), 51-67.

Hammarström, G., & Torres, S. (2012). Variations in subjective well-being when 'aging in place'—A matter of acceptance, predictability and control. *Journal of Aging Studies*, 26(2), 192-203.

Hausknecht, S., Low, L.F., O'loughlin, K., McNab, J. and Clemson, L., (2020). Older adults' self-perceptions of aging and being older: A scoping review. *The Gerontologist*, 60(7), e524-e534.

Hawkins, R., & Stewart, S. (2002). Changing rooms: the impact of adaptations on the meaning of home for a disabled person and the

role of occupational therapists in the process. *British Journal of Occupational Therapy*, 65(2), 81-87.

Hawkey, L. C., & Cacioppo, J. T. (2007). Aging and loneliness: Downhill quickly? *Current Directions in Psychological Science*, 16(4), 187-191.

Hays, J. C. (2002). Living arrangements and health status in later life: A review of recent literature. *Public Health Nursing*, 19 (2), 136-151.

Hazuchová, N., Stávková, J., Nagyová, L. U., Poláková, Z., & Vávrová, S. (2019). Transformations and perspectives of the living conditions of Czech and Slovak seniors with an emphasis on single-person households. *Society and Economy*, 41(4), 449-465.

Heap, J., Fors, S., & Lennartsson, C. (2017). Coexisting disadvantages in later life: Demographic and socio-economic inequalities. *Journal of Population Ageing*, 10 (3), 247.

Higgs, P., Hyde, M., Arber, S. and Blane, D., (2005). Dimensions of the inequalities in quality of life. *Understanding quality of life in old age*, .27.

Higo, M., & Khan, H. T. (2015). Global population aging: Unequal distribution of risks in later life between developed and developing countries. *Global Social Policy*, 15 (2), 146-166.

Holloway, I. (2017). *Qualitative research in nursing and healthcare* (Fourth ed.). Chichester, England: Wiley Blackwell.

Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives in Psychological Science*, 10 (2), 227-237.

Holstein, M.B. and Minkler, M., (2003). Self, society, and the “new gerontology”. *The Gerontologist*, 43 (6), 787-796.

Hooyman, N., Browne, C.V., Ray, R. and Richardson, V., (2002). Feminist gerontology and the life course. *Gerontology & geriatrics education*, 22 (4), 3-26.

Hosseinpour, A.R., Stewart Williams, J., Amin, A., Araujo De Carvalho, I., Beard, J., Boerma, T., Kowal, P., Naidoo, N. and Chatterji, S., (2012). Social determinants of self-reported health in women and men: understanding the role of gender in population health. *PloS one*, 7 (4), e34799.

Howe, K. R. (1988). Against the quantitative-qualitative incompatibility thesis or dogmas die hard. *Educational Researcher*, 17(8), 10-16.

Howie, L., Coulter, M. and Feldman, S., (2004). Crafting the self: older persons' narratives of occupational identity. *American Journal of Occupational Therapy*, 58 (4), 446-454.

Hu, Y., Leinonen, T., Van Hedel, K., Myrskylä, M. and Martikainen, P., (2019). The relationship between living arrangements and higher use of hospital care at middle and older ages: to what extent do observed and unobserved individual characteristics explain this association? *BMC public health*, 19 (1), 1011.

Huffman, C. and Ramos, C.G., (2019). Living Arrangements, Health and Wealth Dynamics of Elderly Mexicans.
https://sistemas.colmex.mx/Reportes/LACEALAMES/LACEA-LAMES2019_paper_80.pdf

Hughes, M. E., & Waite, L. J. (2002). Health in household context: Living arrangements and health in late middle age. *Journal of Health and Social Behavior*, 43 (1), 1.

Hunt, S., (2005). *The life course: a sociological introduction*. Basingstoke: Palgrave Macmillan.

Hutchinson, J., White, P.C. and Graham, H., 2014. Differences in the social patterning of active travel between urban and rural populations: findings from a large UK household survey. *International Journal of Public Health*, 59 (6), 993-998.

Hwang, E.J. and Sim, I.O. (2021). Association of living arrangements with happiness attributes among older adults. *BMC Geriatrics*, 21 (1), 1-14.

Iacono, V.L., Symonds, P., and Brown, D.H., 2016. Skype as a tool for qualitative research interviews. *Sociological Research Online*, 21 (2), 1-12.

Imamura, H., Uchiyama, E., Akiyama, M., Kaneko, I., Takebayashi, T. and Nishiwaki, Y., (2020). Relationship of living arrangement with the decline in functional capacity in elderly people by gender: a longitudinal observational study. *Environmental Health and Preventive Medicine*, 25, 1-12.

Inwood, M. J. (2000). *Heidegger: A very short introduction* (1st ed.). Oxford: Oxford Paperbacks.

Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field Methods*, 18(1), 3-20.

Jahoda, M. (1982). *Employment and unemployment*. Cambridge: Cambridge University Press.

Jakobsson, U. (2007). Using the 12-item short form health survey (SF-12) to measure quality of life among older people. *Aging Clinical and Experimental Research*, 19(6), 457.

Jenkinson, C.E., Dickens, A.P., Jones, K., Thompson-Coon, J., Taylor, R.S., Rogers, M., Bambra, C.L., Lang, I. and Richards, S.H., (2013). Is volunteering a public health intervention? A systematic review and meta-analysis of the health and survival of volunteers. *BMC public health*, 13(1), 773.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26.

Katbamna, S. and Matthews, M.R., (2006). *Ageing & ethnicity in England. A Demographic Profile of BME Older People in England*. London: Age Concern.

Katz, S., (2000). Busy Bodies: Activity, aging, and the management of everyday life. *Journal of aging studies*, 14(2), 135-152.

Kentish, B. (2018). *Theresa May to unveil new plans to tackle loneliness*. London, United Kingdom London, London: Independent Digital News & Media.

Khan, H. T. A., Hussein, S., & Deane, J. (2017). Nexus between demographic change and elderly care need in the gulf cooperation council (GCC) countries: Some policy implications. *Ageing International*, 42(4), 466-487.

Khan, H. T. (2014). Factors associated with intergenerational social support among older adults across the world. *Ageing International*, 39(4), 289-326.

Khan, H., Hafford-Letchfield, T., & Lambert, N. (2018). Single women living alone in later life: A short review. In P. Dunk-West, & T. Hafford-Letchfield, T., (Eds.), *Sexuality, sexual and gender identities and intimacy research in social work and social care: A lifecourse epistemology* (155-175). Abingdon: Routledge.

Kharicha, K., Iliffe, S., Harari, D., Swift, C., Gillmann, G., & Stuck, A. E. (2007). Health risk appraisal in older people 1: Are older people living alone an 'at-risk' group? *British Journal of General Practice*, 57(537), 271-276.

Kim, H., & Fredriksen-Goldsen, K. (2016). Living arrangement and loneliness among lesbian, gay, and bisexual older adults. *The Gerontologist*, 56(3), 548-558. doi:10.1093/geront/gnu083

Kim, N., Kim, H. and Kwon, S., (2020). Factors associated with different numbers of health behaviors by living arrangements. *BMC Public Health*, 20(1), 1-11.

Kim, S., & Sok, S. (2013). Factors influencing the life satisfaction in the older Korean women living alone. *Contemporary Nurse*, 44(1), 111-119.

Kippin, H. and Lucas, B., (2020). *From Big Society to Social Productivity*. London: RSA Projects.

Kizony, R., Schreuer, N., Rotenberg, S., Shach-Pinsly, D., Sinoff, G. and Plaut, P., (2020). *Participation in out-of-home activities among older adults: The role of mobility, attitudes, and travel behaviors*. Elsevier Ltd.

Klijs, B. (2012). *Healthy ageing: Tackling the burden of disease and disability in an ageing population*. Doctoral dissertation, Erasmus University, Amsterdam.

Klinenberg, E., (2014). *Going Solo: The Extraordinary Rise and Surprising Appeal of Living Alone*. 2 edn. London: Gerald Duckworth & Co.

Ko, H., Park, Y., Cho, B., Lim, K., Chang, S.J., Yi, Y.M., Noh, E. and Ryu, S., (2019). Gender differences in health status, quality of life, and community service needs of older adults living alone. *Archives of Gerontology and Geriatrics*, 83, 239-245.

Kobayashi, L. C., Wardle, J., & von Wagner, C. (2015). Internet use, social engagement and health literacy decline during ageing in a longitudinal cohort of older English adults. *Journal of Epidemiology Community Health*, 69(3), 278-283.

Knies, G. (2018). *Understanding society-the UK household longitudinal study: Waves 1–8, user manual*. Colchester, UK: University of Essex.

Koehn, S., Neysmith, S., Kobayashi, K., & Khamisa, H. (2013). Revealing the shape of knowledge using an intersectionality lens: Results of a scoping review on the health and health care of ethnocultural minority older adults. *Ageing & Society*, 33(3).

Koivunen, K., Sillanpaa, E., Von Bonsdorff, M., Sakari, R., Pynnonen, K. and Rantanen, T., (2020). Living alone vs. living with someone as a predictor of mortality after a bone fracture in older age. *Aging Clinical and Experimental Research*, 32, 1-9.

Krekula, C., (2007). The intersection of age and gender: Reworking gender theory and social gerontology. *Current Sociology*, 55(2).

Křenková, L. (2018). Childlessness and social support in old age. *Finnish Yearbook of Population Research*, 53, 25-50.

Kung, C. S. (2020). Health in widowhood: The roles of social capital and economic resources. *Social Science & Medicine*, 253, 112965.

Laaksonen, M., Martikainen, P., Nihtila, E., Rahkonen, O. and Lahelma, E., (2008). Home ownership and mortality: a register-based follow-up study of 300 000 Finns. *Journal of Epidemiology & Community Health*, 62(4).

Lak, A., Aghamolaei, R. and Myint, P.K., (2020). How Do Older Women Perceive their Safety in Iranian Urban Outdoor Environments? *Ageing International*, 45(4).

Lakey, J. (2017). Does leisure engagement affect wellbeing? health, wellbeing and leisure engagement among adults and young people Paper presented at the *Understanding Society Scientific Conference 2017*, University of Essex.

Lambert, N., Hafford-Letchfield, T., Khan, H. T., Brady, D., Long, E., & Clarke, L. (2018). Stories of intimacy and sexuality in later life: Solo women speak. *Sexuality, sexual and gender identities and intimacy research in social work and social care*. Routledge.

Langdridge, D., 2007. *Phenomenological psychology: Theory, research and method*. London: Pearson Education.

Lawlor, C.M., (2000). Learning from Stories: Narrative Interviewing in Cross-cultural Research. *Scandinavian Journal of Occupational Therapy*, 7(1), 4-14.

Laws, G., (1995). Understanding ageism: Lessons from feminism and postmodernism. *The Gerontologist*, 35(1), 112-118.

Lee, J.M.G., Chan, C.Q.H., Low, W.C., Lee, K.H. and Low, L.L., (2019). Health-seeking behaviour of the elderly living alone in an urbanised low-income community in Singapore. *Singapore Medical Journal*.

Lee, S. M., & Edmonston, B. (2019). Living alone among older adults in Canada and the U.S. *Healthcare (Basel, Switzerland)*, 7(2), 68.

Lee, S., & Hong, G. S. (2016). Predictors of depression among community-dwelling older women living alone in Korea. *Archives of Psychiatric Nursing*, 30(5), 513-520

Letvak, S. (1997). Relational experiences of elderly women living alone in rural communities: A phenomenological inquiry. *Journal of the New York State Nurses Association*, 28(2), 20-25.

Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: Advancing the methodology. *Implementation Science*, 5(1), 69.

Levitt, H.M., Bamberg, M., Cresswell, J.W., Frost, D.M., Josselson, R. and Suarez-Orozco, C., (2018). Journal Article Reporting Standards for Qualitative Primary, Qualitative Meta-Analytic, and Mixed Methods Research in Psychology: The APA Publications and Communications Board Task Force Report. *American Psychologist*, 73(1), 26-46.

Lifshitz, R., Nimrod, G. and Bachner, Y.G., (2018). Internet use and well-being in later life: a functional approach. *Aging & Mental Health*, 22(1), 85-91.

Lim, E. J. (2014). Gender differences in the relationship between physical functioning and depressive symptoms in low-income older adults living alone. *Nursing & Health Sciences*, 16(3), 381-386.

Lim, L. L., & Ng, T. P. (2010). Living alone, lack of a confidant and psychological well-being of elderly women in Singapore: the mediating role of loneliness. *Asia-Pacific Psychiatry*, 2(1), 33-40.

Lin, P., & Wang, H. (2011). Factors associated with depressive symptoms among older adults living alone: An analysis of sex difference. *Aging & Mental Health*, 15(8), 1038-1044.

Ling, J. and Kasket, E., (2016). Let's talk about sex: a critical narrative analysis of heterosexual couples' accounts of low sexual desire. *Sexual and Relationship Therapy*, 31(3), 325-343.

Loe, M., (2010). Doing it my way: old women, technology and wellbeing. *Sociology of health & illness*, 32(2), pp. 319-334.

Lou, V. W. Q., & Ng, J. W. (2012). Chinese older adults' resilience to the loneliness of living alone: A qualitative study. *Aging & Mental Health*, 16(8), 1039-1046

Lucas, K., (2012). Transport and social exclusion: Where are we now? *Transport Policy*, 20, pp. 105-113.

Lukaschek, K., Vanajan, A., Johar, H., Weiland, N., & Ladwig, K. (2017). "In the mood for ageing": Determinants of subjective wellbeing in older men and women of the population-based KORA-age study. *BMC Geriatrics*, 17(1), 1-9.

Luken, P. C., & Vaughan, S. (2003). Living alone in old age: Institutionalized discourse and women's knowledge. *Sociological Quarterly*, 44(1), 109-131.

Lum, T.Y. and Lightfoot, E., (2005). The effects of volunteering on the physical and mental health of older people. *Research on Aging*, 27(1), pp. 31-55.

Lynn, P., & Kaminska, O. (2010). *Weighting strategy for Understanding Society*. Essex: Understanding Society at the Institute for Social and Economic Research.

Lynn, P. (2020) Methods for recruitment and retention, *Understanding Society Working Paper 2020-07*, Colchester: University of Essex

Machón, M., Vergara, I., Dorronsoro, M., Vrotsou, K., & Larrañaga, I. (2016). Self-perceived health in functionally independent older people: Associated factors. *BMC Geriatrics*, 16(1), 66.

MacIntyre, S., Ellaway, A., Hiscock, R., Kearns, A., Der, G. and McKay, L., (2003). What features of the home and the area might help to explain observed relationships between housing tenure and health? Evidence from the west of Scotland. *Health & place*, 9(3), 207-218.

Magaziner, J., & Cadigan, D. A. (1989). Community resources and mental health of older women living alone. *Journal of Aging & Health*, 1(1), 35-49.

Magaziner, J., Cadigan, D. A., Hebel, J. R., & Parry, R. E. (1988). Health and living arrangements among older women: Does living

alone increase the risk of illness. *Journal of Gerontology*, 43(5), M127-M133.

Mah, J.C., Stevens, S.J., Keefe, J.M., Rockwood, K. and Andrew, M.K., (2021). Social factors influencing utilization of home care in community-dwelling older adults: a scoping review. *BMC geriatrics*, 21(1), 1-21.

Marmot, M., (2020). Health equity in England: the Marmot review 10 years on. *BMJ*, 368.

Marmot, M., Allen, J., Goldblatt, P., Boyce, T., McNeish, D., & Grady, M. (2010). *Fair society, healthy lives*. (No. 14). London: University College London, England.

Martikainen, P., Nihtilä, E., & Moustgaard, H. (2008). The effects of socioeconomic status and health on transitions in living arrangements and mortality: A longitudinal analysis of elderly finnish men and women from 1997 to 2002. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 63(2), S9-S109.

Martinson, M. and Minkler, M., (2006). Civic engagement and older adults: A critical perspective. *The Gerontologist*, 46(3), 318-324.

McDonough, P., Sacker, A. and Wiggins, R.D., (2005). Time on my side? Life course trajectories of poverty and health. *Social science & medicine*, 61(8), 1795-1808.

Mercer, S. W., Gunn, J., Bower, P., Wyke, S., & Guthrie, B. (2012). *Managing Patients with Mental and Physical Multimorbidity*. *BMJ*. Vol 345, No. 7874, e5559.

Michael, Y. L., Berkman, L. F., Colditz, G. A., & Kawachi, I. (2001). Living arrangements, social integration, and change in functional health status. *American Journal of Epidemiology*, 153(2), 123-131.

Middleton, S., Hancock, R., Kellard, K., Beckhelling, J., Phung, V. and Perren, K. (2007). *Measuring resources in later life: A review of the data*. York [England]: Joseph Rowntree Foundation.

Minkler, M. (1996). Critical perspectives on ageing: New challenges for gerontology. *Ageing and Society*, 16(4), 467-487.

Moncatar, T.R., Nakamura, K., Rahman, M. and Seino, K., (2019). Health Status and Health Facility Utilization of Community-Dwelling Elderly Living Alone in the Philippines: A Nationwide Cross-Sectional Study. *Health*, 11(11), 1554.

Morgan, D. L. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research*, 1(1), 48-76.

Morgan, D. L. (2014). Pragmatism as a paradigm for social research. *Qualitative Inquiry*, 20(8), 1045-1053.

Morrissey, S. (1998). Resources and characteristics of elderly women who live alone. *Health Care for Women International*, 19(5), 411-421.

Morrow-Howell, N., Hinterlong, J., Rozario, P.A. and Tang, F., (2003). Effects of volunteering on the well-being of older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 58(3), S137-S145.

Nagamine, Y., Fujiwara, T., Tani, Y., Murayama, H., Tabuchi, T., Kondo, K., & Kawachi, I. (2019). Gender Difference in the Association Between Subjective Socioeconomic Mobility Across Life Course and Mortality at Older Ages: Results from the JAGES Longitudinal Study. *Journal of Epidemiology*, JE20190083.

Narushima, M., & Kawabata, M. (2020). "Fiercely independent": Experiences of aging in the right place of older women living alone with physical limitations. *Journal of Aging Studies*, 54, 100875.

Naylor, C., Parsonage, M., McDaid, D., Knapp, M., Fossey, M., & Galea, A. (2012). *Long-term conditions and mental health: The cost of co-morbidities*. London: The King's Fund.

Nazroo, J. and Matthews, K., (2012). The impact of volunteering on well-being in later life. *Cardiff: WRVS*.

NHS England. (2014). *NHS 5-year forward view*. London: NHS England.

Nilsson, I., Lundgren, A. S., Liliequist, M., Medicinska fakulteten, Institutionen för kultur- och medievvetenskaper, Enheten för demografi och åldrandeforskning, (CEDAR), . . . Samhällsvetenskapliga fakulteten. (2012). Occupational wellbeing among the very old. *Journal of Occupational Science*, 19(2), 115-126.

Nilsson, C.J., Lund, R. and Avlund, K., (2007). Cohabitation Status and Onset of Disability Among Older Danes.

Noguchi, T., Kondo, K., Saito, M., Nakagawa-Senda, H., & Suzuki, S. (2019). *Community social capital and the onset of functional disability among older adults in Japan: a multilevel longitudinal study using Japan Gerontological Evaluation Study (JAGES) data*. *BMJ open*, 9(10), e029279.

Nolan, A., Whelan. A., McGuinness, S., and Maitre, B., (2019). Gender, pensions and income in retirement. ESRI Research Series Number 87 September 2019.

O'Brien, R.M. 2007, "A Caution Regarding Rules of Thumb for Variance Inflation Factors", *Quality & Quantity*, vol. 41, no. 5, 673-690.

O'Grady, S. (2017, Sep 23,). Loneliness warning: Nine in 10 now fear being alone 'more than ever'. *Express (Online)*

O'Cathain, A. (2009). Editorial: Mixed methods research in the health sciences: A quiet revolution. *Journal of Mixed Methods Research*, 3(1), 3-6.

Ocean, N., Howley, P., & Ensor, J. (2019). Lettuce be happy: A longitudinal UK study on the relationship between fruit and vegetable consumption and wellbeing. *Social Science & Medicine*, 222, 335-345.

Office for National Statistics [ONS]. (2020a). *People living alone aged 65 years old and over, by specific age group and sex, UK, 1996 to 2019*. Office for National Statistics.

Office for National Statistics [ONS]. (2020b). *Estimates of the very old, including centenarians, UK: 2002 to 2019*. Office for National Statistics.

Office for National Statistics [ONS]. (2020c). *Age groups*. Office for National Statistics.

Office for National Statistics [ONS]. (2019). *Childbearing for women born in different years, England and Wales: 2018*. Office for National Statistics.

Office for National Statistics [ONS]. (2015) *Housing and home ownership in the UK*. Office for National Statistics.

Office for National Statistics [ONS]. (2012). *Ethnicity and national identity in England and Wales: 2011*. Office for National Statistics.

Office of the Deputy Prime Minister. (2006). *A sure start to later life: Ending inequalities for older people*. London: Social Exclusion Unit.

Oh, D. H., Park, J. H., Lee, H. Y., Kim, S. A., Choi, B. Y., & Nam, J. H. (2015). Association between living arrangements and depressive symptoms among older women and men in South Korea. *Social Psychiatry and Psychiatric Epidemiology*, 50(1), 133.

Ohrnberger, J., Fichera, E., & Sutton, M. (2017). The relationship between physical and mental health: A mediation analysis. *Social Science & Medicine*, 195, 42-49.

Okun, M.A., Yeung, E.W. and Brown, S., (2013). Volunteering by Older Adults and Risk of Mortality: A Meta-Analysis. *Psychology and aging*, 28(2), pp. 564-577.

Onwuegbuzie, A. J., Johnson, R. B., & Collins, K. M. (2009). Call for mixed analysis: A philosophical framework for combining qualitative and quantitative approaches. *International Journal of Multiple Research Approaches*, 3(2), 114-136.

Onyx, J., & Warburton, J. (2003). Volunteering and health among older people: A review. *Australasian Journal on Ageing*, 22(2), 65-69.

Orr, G. (2014). Britain has been voted the loneliness capital of Europe - so how did we become so isolated. *The Independent*, 1, 26.

Oxford Institute for Population Ageing. (2018). *Ageing in the commonwealth*. Oxford.

Oxford University Press. Retrieved from <https://www.ageing.ox.ac.uk/news/ageing-in-the-commonwealth>

Park, N. S., Jang, Y., Lee, B. S., & Chiriboga, D. A. (2017). The relation between living alone and depressive symptoms in older Korean Americans: Do feelings of loneliness mediate? *Aging & Mental Health*, 21(3), 304-312.

Patterson, C., (2018). Constructing narrative and phenomenological meaning within one study. *Qualitative Research Journal*, 18(3), 223-237.

Penn, R., (2018). Changing contours of employment in England and Wales between 1921 and 2011: Industry, occupation, gender and locality. *Irish Journal of Sociology*, 26(3), 289-316.

Perez, C.C., (2019). *Invisible women: Exposing data bias in a world designed for men*. Random House.

Perissinotto, C.M. and Covinsky, K.E., (2014). Living alone, socially isolated, or lonely—What are we measuring? *Journal of General Internal Medicine*. 29, (1429-31).

Peter, N. and Polgar, J.M., (2020). Making occupations possible? Critical narrative analysis of social assistance in Ontario, Canada. *Journal of Occupational Science*, 27(3), 327-341.

Peters, M. D., Godfrey, C. M., Khalil, H., McInerney, P., Parker, D., & Soares, C. B. (2015). Guidance for conducting systematic scoping reviews. *International Journal of Evidence-Based Healthcare*, 13(3), 141-146.

Petry, H. (2003). Aging happens: Experiences of Swiss women living alone. *Journal of Women & Aging*, 15(4), 51-68.

Pimouguet, C., Rizzuto, D., Schon, P., Shakersain, B., Angleman, S., Lagergren, M., Samhällsvetenskapliga fakulteten. (2016). Impact of living alone on institutionalization and mortality: A population-based longitudinal study. *European Journal of Public Health*, 26(1), 182-187.

Pinquart, M. and Sorensen, S., (2003). Difference between caregivers and noncaregivers in psychological health and physical health: a meta-analysis. *Psychology and Aging*, 18(2), 250.

Pinquart, M., & Sorensen, S. (2001). Influences on loneliness in older adults: A meta-analysis. *Basic and Applied Social Psychology*, 23(4), 245-266.

Pizzetti, P., Manfredini, M., & Lucchetti, E. (2005). Variations in late-age mortality by household structure and marital status in Parma, Italy. *Ageing & Society*, 25(6), 305-318.

Plagnol, A.C. and Huppert, F.A., (2010). Happy to Help? Exploring the Factors Associated with Variations in Rates of Volunteering Across Europe. *Social Indicators Research*, 97(2), 157-176.

Pluye, P., & Hong, Q. N. (2014). Combining the power of stories and the power of numbers: Mixed methods research and mixed studies reviews. *Annual Review of Public Health*, 35(1), 29-45.

Portacolone, E., Chodos, A., Halpern, J., Covinsky, K.E., Keiser, S., Fing, J., Rivera, E., Tran, T., Bykhovsky, C. and Johnson, J.K., (2021). The effects of the COVID-19 pandemic on the lived experience of diverse older adults living alone with cognitive impairment. *The Gerontologist*.

Powell, J. L. (2014). "You'll never walk alone": Phenomenology and ageing in contemporary culture. *International Letters Social Humanistic Sciences*, 16(1), 19-30.

Powell, J. L. and Khan, H. T., (2014). Ageing in post-industrial society: trends and trajectories. *Journal of Globalization Studies*, 5(2).

Power, E.R., 2020. *Older Women in the Private Rental Sector: Unaffordable, Substandard and Insecure Housing*. Western Sydney University.

Prime Minister's Office. (2018). *PM commits to government-wide drive to tackle loneliness*. Retrieved from <https://www.gov.uk/government/news/pm-commits-to-government-wide-drive-to-tackle-loneliness>

Pringle, J., Drummond, J., McLafferty, E. and Hendry, C., (2011). Interpretative phenomenological analysis: a discussion and critique. *Nurse Researcher*, 18(3), 20-24.

Public Health England, (2020). *Healthy Ageing Consensus Statement*. London: PHE.

Purtle, J., Nelson, K. L., Yang, Y., Langellier, B., Stankov, I., & Roux, A. V. D. (2019). Urban–rural differences in older adult depression: A systematic review and meta-analysis of comparative studies. *American Journal of Preventive Medicine*, 56(4), 603-613.

Qualter, P., Vanhalst, J., Harris, R., Van Roekel, E., Lodder, G., Bangee, M., Verhagen, M. (2015). Loneliness across the life span. *Perspectives in Psychological Science*, 10(2), 250-264.

Quirke, E., König, H. H., & Hajek, A. (2019). Association between caring for grandchildren and feelings of loneliness, social isolation and social network size: a cross-sectional study of community dwelling adults in Germany. *BMJ open*, 9(12), e029605.

Raeside, R., & Khan, H. (2008). The ageing Scottish population: Trends, consequences, responses. *Canadian Studies in Population*, 35(2), 291-310.

Rahman, M. M., Khan, H. T., & Hafford-Letchfield, T. (2016). Correlates of socioeconomic status and the health of older people in the United Kingdom: A review. *Illness, Crisis & Loss*, 24(4), 195-216.

Ray, R.E., (1996). A postmodern perspective on feminist gerontology. *Gerontologist*, 36(5), 674-680.

Ricoeur, P., (1985). Narrated time. *Philosophy Today*, 29(4), 259-272.

Ricoeur, P., (1970). *Freud and philosophy: an essay on interpretation*. Translated by Denis Savage. Yale University Press.

Riessman, C. K. (2008). *Narrative methods for the human sciences*. Sage.

Roberts, D. C., & Cleveland, L. A. (2001). Surrounded by ocean, a world apart... the experience of elder women living alone. *Holistic Nursing Practice*, 15(3), 45-55.

Robinson, A. W. (2002). Older women's experiences of living alone after heart surgery. *Applied Nursing Research*, 15(3), 118-125.

Rolls, L., Seymour, J. E., Froggatt, K. A., & Hanratty, B. (2011). Older people living alone at the end of life in the UK: Research and policy challenges. *Palliative Medicine*, 25(6), 650-657.

Ron, P., 2009. Seeking Help from Health and Welfare Services Among Elderly Single Women. *Journal of Women & Aging*, 21(4), 279-292.

Rowe, J. W., & Kahn, R. L. (2015). Successful aging 2.0: Conceptual expansions for the 21st century. *Journals of Gerontology Series B-Psychological Sciences and Social Sciences*, 70(4), 593-596.

Rowe, J. W., & Kahn, R. L. (1987). Human aging: Usual and successful. *Science*, 237(4811), 143-149.

Ryser, L., & Halseth, G. (2011). Informal support networks of low-income senior women living alone: Evidence from Fort St. John, BC. *Journal of Women & Aging*, 23 (3), 185-202.

Sacker, A., Ross, A., MacLeod, C. A., Netuveli, G., & Windle, G. (2017). Health and social exclusion in older age: Evidence from Understanding Society, the UK household longitudinal study. *Journal of Epidemiology and Community Health*, 71(7), 681-690.

Saito, T., Murata, C., Aida, J., & Kondo, K. (2017). Cohort study on living arrangements of older men and women and risk for basic

activities of daily living disability: Findings from the AGES project. *BMC Geriatrics*, 17(1), 183.

Sarabia-Cobo, C.M., Perez, V., Hermosilla, C. and De Lorena, P., (2020). Retirement or no Retirement? The Decision's Effects on Cognitive Functioning, Well-Being, and Quality of Life. *Behavioral Sciences*, 10(10), 151.

Sarkar, S., Shekhar, C., & Mondal, K. (2012). Living arrangements and health wellbeing among elderly women in India. *Middle East Journal of Age and Ageing*, 9(5), 29-36.

Sasser, J. R., & Moody, H. R. (2018). *Gerontology: The basics*. London: Routledge.

Schnittger, R. I. B., Wherton, J., Prendergast, D., & Lawlor, B. A. (2012). Risk factors and mediating pathways of loneliness and social support in community-dwelling older adults. *Aging & Mental Health*, 16(3), 335-346.

Schnittker, J. (2007). Working more and feeling better: Women's health, employment and family life, 1974-2004. *American Sociological Review*, 72(2), 221-238.

Schoonenboom, J., & Johnson, R. B. (2017). How to construct a mixed methods research design. *Kolner Zeitschrift Fur Soziologie Und Sozialpsychologie*, 69(2), 107-131.

Seah, B., Kowitlawakul, Y., Jiang, Y., Ang, E., Chokkanathan, S. and Wang, W., (2018). A review on healthy ageing interventions addressing physical, mental and social health of independent community-dwelling older adults. *Geriatric Nursing (New York)*, 40(1), 37-50.

Segal, L. (2017). *Radical happiness: Moments of collective joy*. Verso Books.

Sereny, M. (2011). Living arrangements of older adults in China: The interplay among preferences, realities, and health. *Research on Aging*, 33(2), 172-204.

Shaw, B. A., Fors, S., Fritzell, J., Lennartsson, C., & Agahi, N. (2018a). Who lives alone during old age? trends in the social and functional disadvantages of Sweden's solitary living older adults. *Research on Aging*, 40(9), 815-838.

Shaw, R.L., Smith, L.J. and Hiles, D.R., (2018b). Exploring the felt sense of chronic ill-health: dialoguing between IPA, lifeworld theory and narrative inquiry to make sense of feelings and affect. *Qualitative research in psychology*. 1-19.

Shaw, R.L., (2011). Women's experiential journey toward voluntary childlessness: An interpretative phenomenological analysis. *Journal of Community & Applied Social Psychology*, 21(2), 151-163.

Shaw, R., (2010). Embedding reflexivity within experiential qualitative psychology. *Qualitative Research in Psychology*, 7(3), 233-243.

Shergold, I. (2019). Taking part in activities, an exploration of the role of discretionary travel in older people's wellbeing. *Journal of Transport & Health*, 12, 195-205.

Shim, H., Kim, S., Kim, M., Kim, B.S., Jeong, E., Lee, Y.J. and Won, C.W., (2020). Older Men Living with Spouse and Older Women Living with Spouse and Children Have Lower Frailty Prevalence: The Korean Frailty and Aging Cohort Study (KFACS). *Annals of Geriatric Medicine and Research*, 24(3), 204.

Shinebourne, P., (2011). The Theoretical Underpinnings of Interpretative Phenomenological Analysis (IPA). *Existential Analysis: Journal of the Society for Existential Analysis*, 22(1).

Silverio, S.A. and Soulsby, L.K., (2019). Turning that shawl into a cape: older never married women in their own words – the

'Spinsters', the 'Singletons', and the 'Superheroes'. *Critical Discourse Studies*, 1-18.

Silverman, D., (2006). *Interpreting qualitative data third edition: Methods for analysing talk, text and interaction*. 3rd edn. London: Sage.

Sixsmith, A., & Sixsmith, J. (2008). Ageing in place in the United Kingdom. *Ageing International*, 32(3), 219-235.

Sixsmith, J., Sixsmith, A., Fänge, A. M., Naumann, D., Kucsera, C., Tomsone, S., Woolrych, R. (2014). Healthy ageing and home: The perspectives of very old people in five European countries. *Social Science & Medicine*, 106(1), 1-9.

Smith, J.A., (2018). "Yes, it is phenomenological": A reply to Max Van Manen's critique of interpretative phenomenological analysis. *Qualitative Health Research*, 28(12), 1955-1958.

Smith, J.A., (2011). " We could be diving for pearls": the value of the gem in experiential qualitative psychology. *Qualitative Methods in Psychology Bulletin*, (12). 6-15.

Smith, J.A. and Shinebourne, P., (2012). *Interpretative phenomenological analysis*. American Psychological Association.

Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method and research*. London: Sage.

Smith, J.A. and Osborn, M., (2008). Chapter 4: Interpretative phenomenological analysis. *Qualitative Psychology: A Practical Guide to Research Methods. Second Edition*. London: Sage Publications.

Smith, K. J., & Victor, C. (2018). Typologies of loneliness, living alone and social isolation, and their associations with physical and mental health. *Ageing and Society*, 1-22.

Snell, K. D. M. (2017). The rise of living alone and loneliness in history. *Social History*, 42(1), 2-28.

Sok, S. R., & Yun, E. K. (2011). A comparison of physical health status, self-esteem, family support and health-promoting behaviours between aged living alone and living with family in Korea. *Journal of Clinical Nursing*, 20(11-12), 1606-1612.

Springfield, S., Qin, F., Hedlin, H., Eaton, C.B., Rosal, M.C., Taylor, H., Staudinger, U.M. and Stefanick, M.L., (2020). Resilience and CVD-protective Health Behaviors in Older Women: Examining Racial and Ethnic Differences in a Cross-Sectional Analysis of the Women's Health Initiative. *Nutrients*, 12(7), 2107.

Stacey, G., Felton, A., Morgan, A., Stickley, T., Willis, M., Diamond, B., Houghton, P., Johnson, B. and Dumenya, J., (2016). A critical narrative analysis of shared decision-making in acute inpatient mental health care. *Journal of Interprofessional Care*, 30(1), 35-41.

Stahnke, B., Blackstone, A. and Howard, H., (2020). Lived Experiences and Life Satisfaction of Child Free Women in Late Life. *The Family Journal*, 28(2), 159-167.

Stanley, J.K., Hensher, D.A., Stanley, J.R. and Vella-Brodrick, D., (2011). Mobility, social exclusion and well-being: Exploring the links. *Transportation research part A: policy and practice*, 45(8), 789-801.

Steel, N., Ford, J.A., Newton, J.N., Davis, A.C., Vos, T., Naghavi, M., Glenn, S., Hughes, A., Dalton, A.M., Stockton, D. and Humphreys, C., (2018). Changes in health in the countries of the UK and 150 English Local Authority areas 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet*, 392(10158), 1647-1661.

Steptoe, A., Deaton, A., & Stone, A. A. (2015). Subjective wellbeing, health, and ageing. *The Lancet*, 385(9968), 640-648.

Stone, J., Evandrou, M., & Falkingham, J. (2013). The transition to living alone and psychological distress in later life. *Age and Ageing*, 42(3), 366-372.

Streib, F. G., & Binstock, R. H. (1990). Aging and the social sciences. In R. H. Binstock, & E. Shanas (Eds.), *Handbook of aging and the social sciences* (pp. 1-26). USA: Elsevier.

Sulmasy, D. P. (2002). A biopsychosocial-spiritual model for the care of patients at the end of life. *The Gerontologist*, 42(suppl_3), 24-33.

Sun, W., Watanabe, M., Tanimoto, Y., Shibutani, T., Kono, R., Saito, M., Kono, K. (2007). Factors associated with good self-rated health of non-disabled elderly living alone in Japan: A cross-sectional study. *BMC Public Health*, 7(1), 297-9.

Talewar, K.K., Cassidy, E. and McIntyre, A., (2020). Living with Meniere's disease: an interpretative phenomenological analysis. *Disability and rehabilitation*, 42(12), 1714-1726.

Tamminen, N., Kettunen, T., Martelin, T., Reinikainen, J., & Solin, P. (2019). *Living alone and positive mental health: a systematic review*. Systematic reviews, 8(1), 1-8.

Tang, F.Y., Choi, E. and Morrow-Howell, N., (2010). Organizational Support and Volunteering Benefits for Older Adults. *Gerontologist*, 50(5), 603-612.

Tang, N. K., Fiecas, M., Afolalu, E. F., & Wolke, D. (2017). Changes in sleep duration, quality, and medication use are prospectively associated with health and wellbeing: Analysis of the UK household longitudinal study. *Sleep*, 40(3).

Teguo, M. T., Simo-Tabue, N., Stoykova, R., Meillon, C., Cogne, M., Amieva, H., & Dartigues, J. F. (2016). Feelings of loneliness and living alone as predictors of mortality in the elderly: The PAQUID study. *Psychosomatic Medicine*, 78(8), 904-909.

Thylstrup, B., Hesse, M., Thomsen, M. and Heerwagen, L., 2015. Experiences and narratives - Drug users with antisocial personality disorder retelling the process of treatment and change. *Drugs: Education, Prevention and Policy*, 22(3), 293-300.

Timmins, N. (2013). *The four UK health systems: Learning from each other*. King's Fund. London.

Tinker, A. (2002). The social implications of an ageing population. introduction. *Mechanisms of Ageing and Development*, 123(7), 729.

Thomas, J. (2015). *Insights into loneliness, older people, and wellbeing*. London: Office for National Statistics.

Toma, A., Hamer, M., & Shankar, A. (2015). Associations between neighborhood perceptions and mental wellbeing among older adults. *Health & Place*, 34(1), 46-53.

Tomaszewski, W. (2013). Living environment, social participation and wellbeing in older age: the relevance of housing and local area disadvantage. *Journal of Population Ageing*, 6(1-2), 119-156.

Törnqvist, M. (2019). Living alone together: Individualized collectivism in Swedish communal housing. *Sociology*, 53(5), 900-915.

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., Weeks, L. (2018). PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Annals of Internal Medicine*, 169(7), 467-473.

Twigg, J. (2004). The body, gender, and age: Feminist insights in social gerontology. *Journal of Aging Studies*, 18(1), 59-73.

Ulbrich, P. M., & Bradsher, J. E. (1993). Perceived support, help seeking, and adaptation to stress among older black and white women living alone. *Journal of Aging & Health*, 5(3), 365-386.

University of Essex. Institute for Social and Economic Research, NatCen Social Research, Kantar Public. (2018). *Understanding Society: Waves 1-8, 2009-2017 and Harmonised BHPS: Waves 1-18, 1991-2009*. [data collection]. 11th Edition. UK Data Service.

Unruh, A.M., (2004). Reflections on: "So... what do you do?" Occupation and the construction of identity. *Canadian Journal of Occupational Therapy*, 71(5), 290-295.

Van der Linden, B.W.A., Cheval, B., Sieber, S., Orsholits, D., Guessous, I., Stringhini, S., Gabriel, R., Aartsen, M., Blane, D., Courvoisier, D. and Burton-Jeangros, C., (2020). Life course socioeconomic conditions and frailty at older ages. *The Journals of Gerontology: Series B*, 75(6), 1348-1357.

van Dyk, S. (2014). The appraisal of difference: Critical gerontology and the active - ageing-paradigm. *Journal of Aging Studies*, 31(1), 93-103.

Vargas-Silva, C. and Rienzo, C., (2019). Briefing—Migrants in the UK: An Overview. *The Migration Observatory at the University of Oxford*. Available online at: <http://tiny.cc/omnvhz> (accessed December 19, 2019).

Vasileiou, K., Barnett, J., Barreto, M., Vines, J., Atkinson, M., Lawson, S., & Wilson, M. (2017). Experiences of loneliness associated with being an informal caregiver: a qualitative investigation. *Frontiers in Psychology*, 8, 585.

Victor, C., & Scharf, T. (2005). Social isolation and loneliness. In H. H. & A. Walker (Eds.), *Understanding quality of life in old age*:

Extending quality of life. (100-116). Berkshire: McGraw-Hill Education.

Victor, C. R. (2005). *The social context of ageing* (1. ed.). London: Routledge.

Victor, C. R., Scambler, S. J., Marston, L., Bond, J., & Bowling, A. (2006). Older people's experiences of loneliness in the UK: Does gender matter? *Social Policy and Society*, 5(1), 27-38.

Vlachantoni, A. (2019). Socio-economic inequalities in later life: the role of gender. In: Westwood, S., (ed) (2019). *Ageing, Diversity and Equality: Social Justice Perspectives*. Routledge, London.

Waddell, G., & Burton, A. K. (2006). *Is work good for your health and wellbeing?* The Stationery Office. London.

Wahl, H., Deeg, D., & Litwin, H. (2016). Successful ageing as a persistent priority in ageing research. *European Journal of Ageing*, 13(1), 1-3.

Walker, R. B., & Hiller, J. E. (2007). Places and health: A qualitative study to explore how older women living alone perceive the social and physical dimensions of their neighbourhoods. *Social Science & Medicine*, 65(6), 1154-1165.

Walkner, T.J., Weare, A.M. and Tully, M., (2018). "You get old. You get invisible": Social isolation and the challenge of communicating with aging women. *Journal of Women & Aging*, 30(5), 399.

Ware Jr, J. E., Kosinski, M., & Keller, S. D. (1998). SF-12: how to score the SF-12 physical and mental health summary scales. Boston: *Quality Metric Inc. & the Health Assessment Lab*.

Warner, C. B., Roberts, A. R., Jeanblanc, A. B., & Adams, K. B. (2017). Coping resources, loneliness, and depressive symptoms of

older women with chronic illness. *Journal of Applied Gerontology*, 38(3).

Watkinson, R.E., Sutton, M. and Turner, A.J., (2021). Ethnic inequalities in health-related quality of life among older adults in England: secondary analysis of a national cross-sectional survey. *The Lancet Public Health*, 6(3), e145-e154.

Wagstaff, C., Jeong, H., Nolan, M., Wilson, T., Tweedlie, J., Phillips, E., Senu, H. and Holland, F.G., (2014). The accordion and the deep bowl of spaghetti: Eight researchers' experiences of using IPA as a methodology. *The Qualitative Report*. 19[24]. 1-15.

Weil, J. (2017). *Research design in aging and social gerontology: Quantitative, qualitative, and mixed methods*. London: Routledge.

Weissman, J. D., & Russell, D. (2018). Relationships between living arrangements and health status among older adults in the united states, 2009-2014: Findings from the national health interview survey. *Journal of Applied Gerontology*, 37(1), 7-25.

Weston, R., & Qu, L. (2003). Ageing, living arrangements and subjective wellbeing. *Family Matters*, 1(66), 26.

Wilmoth, J. M., & Chen, P. (2003). Immigrant status, living arrangements, and depressive symptoms among middle-aged and older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 58(5), S30-S313.

World Health Organization, (2015). *World report on ageing and health*. World Health Organization.

World Health Organization [WHO]. (2016). *Multisectoral action for a life course approach to healthy ageing: Draft global strategy and plan of action on ageing and health*. Geneva: WHO.

World Health Organization [WHO]. (2018) Age-friendly environments in Europe: Indicators, monitoring and assessments (2018). Geneva: WHO.

Wurm, S., Tomasik, M. J., & Tesch-Römer, C. (2008). Serious health events and their impact on changes in subjective health and life satisfaction: The role of age and a positive view on ageing. *European Journal of Ageing*, 5(2), 117-127.

Yang, H., Hagedorn, A., Zhu, H. and Chen, H., (2020). Mental health and well-being in older women in China: implications from the Andersen model. *BMC Geriatrics*, 20(1), 1-10.

Yardley, L., (2000). Dilemmas in qualitative health research. *Psychology & Health*, 15(2), 215-228.

Yeh, S. J., & Lo, S. K. (2004). Living alone, social support, and feeling lonely among the elderly. *Social Behavior and Personality*, 32(2), 129.

Yu, J., Choe, K. and Kang, Y., (2020). Anxiety of older persons living alone in the community. *Healthcare*, 8(3), 287.

Zajacova, A., Huzurbazar, S., & Todd, M. (2017). Gender and the structure of self-rated health across the adult life span. *Social Science & Medicine*, 187, 58-66.

Zali, M., Farhadi, A., Soleimanifar, M., Allameh, H., & Janani, L. (2017). Loneliness, fear of falling, and quality of life in community-dwelling older women who live alone and live with others. *Educational Gerontology*, 43(11), 582-588.

Zaninotto, P., Breeze, E., McMunn, A., & Nazroo, J. (2013). Socially productive activities, reciprocity and wellbeing in early old age: Gender-specific results from the English longitudinal study of ageing (ELSA). *Journal of Population Ageing*, 6(1), 47-57.

Ziersch, A.M. and Baum, F.E., (2004). Involvement in civil society groups: Is it good for your health? *Journal of Epidemiology and Community Health* (1979), 58(6), 493-500.

Appendix 1. UK Household Longitudinal Study (UKHLS) Data Information

Information about the study available at:

<https://www.understandingsociety.ac.uk/>

Accessed between May 2018 and April 2021

Mainstage Questionnaire Wave 8, v04 available at:

<https://www.understandingsociety.ac.uk/sites/default/files/downloads/documentation/mainstage/questionnaire/wave-8/W8-questionnaire-consultation.pdf>

Accessed November 2018

Data retrieved from:

beta.ukdataservice.ac.uk/datacatalogue/series/series?id=2000053

Accessed November 2018

Appendix 2. Correlation between independent variables.

Correlations between independent variables									
	Age	Log of income	Married or partnered	In employment	Homeowner	Education high/low	Ethnicity dichotomous	Urban or rural area	Living alone or not
Age	1								
Pearson Correlation									
Sig. (2-tailed)									
Sum of Squares and Cross-products	234402.913	-5718.151	-5514.581	-1892.820	-1086.573	-1308.403	-109.045	-85.481	5061.022
Covariance	54.792	-1.348	-1.289	-0.442	-0.254	-0.306	-0.025	-0.020	1.183
N	4279	4243	4279	4279	4279	4279	4279	4278	4279
Pearson Correlation									
Sig. (2-tailed)									
Sum of Squares and Cross-products	-5718.151	1567.503	657.831	123.093	235.394	281.023	6.378	74.042	-756.002
Covariance	-1.348	0.369	0.155	0.029	0.055	0.066	0.002	0.017	-0.178
N	4243	4243	4243	4243	4243	4243	4243	4242	4243
Pearson Correlation									
Sig. (2-tailed)									
Sum of Squares and Cross-products	-5514.581	657.831	1069.314	40.468	210.349	40.089	-1.054	76.684	-934.866
Covariance	-1.289	0.155	0.250	0.009	0.049	0.009	0.000	0.018	-0.219
N	4279	4243	4279	4279	4279	4279	4279	4278	4279
Pearson Correlation									
Sig. (2-tailed)									
Sum of Squares and Cross-products	-1892.820	123.093	40.468	312.814	33.409	49.814	1.299	18.842	-40.506
Covariance	-0.442	0.029	0.009	0.073	0.008	0.012	0.000	0.004	-0.009
N	4279	4243	4279	4279	4279	4279	4279	4278	4279
Pearson Correlation									
Sig. (2-tailed)									
Sum of Squares and Cross-products	-1086.573	235.394	210.349	33.409	778.808	118.613	-7.410	41.035	-177.177
Covariance	-0.254	0.055	0.049	0.008	0.182	0.028	-0.002	0.010	-0.041
N	4279	4243	4279	4279	4279	4279	4279	4278	4279

[illegible]

** Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Appendix 3. Correlations and endogeneity tests between explanatory variables.

Multicollinearity tests between explanatory variables							
	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF	
(Constant)	81.871	21.823	3.752	0.000			
Age	-0.356	0.032	-0.198	-10.991	0.000	0.642	1.557
Log of income	-0.634	0.429	-0.029	-1.476	0.140	0.535	1.870
Living alone or not	0.839	0.921	0.032	0.911	0.362	0.171	5.835
Ethnicity dichotomous	-1.650	1.464	-0.016	-1.127	0.260	0.981	1.020
Education high/low	1.370	0.484	0.045	2.828	0.005	0.814	1.228
Homeowner	4.734	0.489	0.152	9.687	0.000	0.847	1.181
Lives in Wales	-0.512	0.873	-0.009	-0.587	0.557	0.980	1.020
Lives in Scotland	-0.725	0.693	-0.015	-1.046	0.296	0.981	1.019
Lives in NI	-2.544	1.315	-0.028	-1.935	0.053	0.978	1.022
In Employment	3.651	0.726	0.076	5.026	0.000	0.911	1.098
Married or partnered	-17.630	21.424	-0.672	-0.823	0.411	0.000	3210.920
Single/never married	-21.390	21.421	-0.354	-0.999	0.318	0.002	606.157
Separated or divorced	-20.933	21.411	-0.522	-0.978	0.328	0.001	1373.191
Widowed	-20.280	21.409	-0.717	-0.947	0.344	0.000	2757.420
Urban or rural area	1.542	0.433	0.054	3.561	0.000	0.912	1.096
Uses internet regularly	0.994	0.457	0.037	2.177	0.030	0.711	1.406
Frequent travel by car	-0.437	0.650	-0.011	-0.671	0.502	0.836	1.196
Frequent travel by train	2.052	0.634	0.050	3.235	0.001	0.886	1.129
Frequent travel by bus	3.911	0.419	0.144	9.339	0.000	0.869	1.151
Volunteered in last year	2.387	0.487	0.075	4.903	0.000	0.883	1.133
Go out socially	3.529	0.589	0.092	5.995	0.000	0.882	1.133
Would like to move	-1.386	0.519	-0.039	-2.670	0.008	0.969	1.032

Dependent Variable: SF-12 Physical Component Summary (PCS)

Appendix 4. Table A9.1 Endogeneity test for self-rated health. Logistic regression results predicting subjective health (good/poor) including SF-12 MCS and PCS as predictive variables.

<i>Factors</i>	<i>Living alone</i> <i>OR (CI)</i>	<i>Living with others</i> <i>OR (CI)</i>
<i>Age 75-84 (ref: 65-74)</i>	1.104 (0.752, 1.620)	1.428* (1.032, 1.976)
<i>Age 85+</i>	2.905*** (1.820, 4.635)	4.249*** (2.236, 8.075)
<i>Income (log)</i>	1.255 (0.845, 1.865)	1.510** (1.099, 2.076)
<i>SF-12 MCS</i>	1.106*** (1.087, 1.126)	1.106*** (1.089, 1.124)
<i>SF-12 PCS</i>	1.224*** (1.200, 1.249)	1.218*** (1.197, 1.240)
<i>Education (ref: school-level)</i>	0.916 (0.603, 1.391)	1.068 (0.732, 1.559)
<i>Homeownership (ref: homeowner)</i>	1.173 (0.834, 1.649)	1.291 (0.866, 1.925)
<i>Wales (ref: England)</i>	0.673 (0.326, 1.387)	0.639 (0.323, 1.264)
<i>Scotland</i>	1.136 (0.628, 2.057)	0.612 (0.359, 1.041)
<i>Northern Ireland</i>	1.186 (0.423, 3.326)	0.745 (0.268, 2.069)
<i>Employment status (ref: employed)</i>	0.674 (0.302, 1.503)	1.571 (0.869, 2.840)
<i>Ethnicity</i>	1.384 (0.318, 6.024)	1.040 (0.347, 3.115)
<i>Rural</i>	1.283 (0.873, 1.887)	1.131 (0.816, 1.568)
<i>Frequent travel by bus</i>	0.882 (0.622, 1.251)	0.818 (0.595, 1.124)
<i>Frequent travel by car</i>	1.351 (0.885, 2.062)	0.933 (0.502, 1.736)
<i>Frequent travel by train</i>	0.809 (0.564, 1.410)	0.764 (0.475, 1.228)
<i>Non-UK born</i>	1.044 (0.451, 2.419)	0.685 (0.333, 1.412)
<i>Would like to move</i>	0.916 (0.582, 1.442)	0.874 (0.616, 1.239)
<i>Volunteered in last year</i>	1.209 (0.780, 1.875)	0.914 (0.625, 1.337)
<i>Regular internet use</i>	1.421 (0.990, 2.041)	1.519** (1.088, 2.121)
<i>Goes out socially</i>	1.271 (0.802, 2.015)	1.156 (0.749, 1.785)
<i>Sees friends/family</i>	0.319** (0.122, 0.836)	1.832 (0.770, 4.358)
<i>N</i>	1570	2384
<i>X² (model)</i>	1201.59***	1459.41***
<i>Cox and Snell R²</i>	.507	.481
<i>Nagelkerke R²</i>	.692	.683

*** $p \leq 0.001$, ** $p < 0.01$, * $p < 0.05$

Appendix 5. Table A9.2

Results of ANOVAs examining relationship between SF-12 PCS and log of income in categories.

Log of income (categories)	Living with other (not partner)		<i>F</i> -test	p value
	Mean	SD		
5 – 5.9	32.08	11.83	4.04	.003
6 – 6.9	39.96	12.06		
7 – 7.9	38.54	14.04		
8 – 8.9	43.85	13.98		
9+	20.28	4.20		

SF-12 PCS – Short Form 12 – Physical Component Score,

SES = socioeconomic status SD = Standard deviation

Appendix 6: Participant Information for interviews

PARTICIPANT INFORMATION

Project Title: Understanding Health and Wellbeing in Older Women living alone in the UK.

Researcher: Catherine Forward, PhD Student

Supervisor/s: Hafiz Khan & Pauline Fox

This is an invitation to take part in a research study about the health and wellbeing of older women living alone in the UK. This information is designed to tell you what it will involve. This study has received research ethics clearance by the University.

What is the project about?

This project will look at women over the age of 65 living in the UK who live alone and to consider how their living arrangements may affect their health and wellbeing.

Who is being asked to take part, and why?

The researcher is interested in talking to several women over the age of 65 who currently live alone.

What will I be asked to do?

You will participate in an interview in a place of your choosing. You will be asked to talk about your living circumstances and how you feel about your health and wellbeing. The interview will last approximately an hour and will be carried out in English.

Do I have to take part? What if I change my mind?

Your participation is voluntary. You may change your mind about being involved, decline to answer a question during the interviews, stop the recording at any time, and without giving a reason. You are free to withdraw at any point before or during the study.

Will the research be of any personal benefit to me?

This study is part of a PhD is funded by the University of West London. It is expected that this knowledge will help to support organisations to make better policies about how they provide services to older women who live alone.

What will happen to the information I provide?

Information gathered during interviews will be treated with confidentiality. The recordings of the interviews and the written transcriptions will be kept in password protected files on secure devices. We will aim to keep your personal details to a minimum by anonymising the transcriptions. Data from these conversations will be used in the researcher's PhD project. This may include verbatim quotes. Your name will be anonymised and any identifying information (such as name of town). You will be asked to read and sign a consent form before you take part.

If you join the study, some parts of the data collected for the study will be looked at by the supervisors. Data may also be looked at by authorised people to check that the study is being carried out correctly. All will have a duty of confidentiality to you as a research participant and we will do our best to meet this duty.

Any personal data you provide (for example address or telephone number) will be kept for 2 years after the end of the study so that we are able to contact you should we need to (unless you advise us that you do not wish to be contacted). All other data (research data) will be kept securely for 7 years according to the University of West Ealing's code of research conduct and research ethics. After this time your data will be disposed of securely.

What will you do with the data?

The anonymised data will be analysed for themes and then will be compared with data from other interviews. This information will be used to form the basis of part of a PhD thesis and published in academic journals. This information will be made available to you if you wish.

For more information on this project please contact one of the following:

Professor Hafiz T.A. Khan, PhD

Professor of Public Health

The Graduate School

University of West London

St Mary's Road

Ealing

London W5 5RF

United Kingdom

Email: hafiz.khan@uwl.ac.uk

Catherine Forward
PhD Student in Public Health
The Graduate School
University of West London
St Mary's Road
Ealing
London
W5 5RF

Email: 21380121@student.uwl.ac.uk

If you have any questions or concerns, please don't hesitate to ask. We can be contacted before and after your participation at the above address.

THANK YOU FOR YOUR PARTICIPATION

If you have any queries or complaints about this study, please contact the student's supervisor in the first instance. If this does not resolve the query to your satisfaction, please write to the Administrator Maria Pennells who will pass your query to the Chair of the Committee.

Maria Pennells
Senior Administrative Officer
PE.04.018
The Graduate School
University of West London
St Mary's Road
Ealing
London
W5 5RF
Email: Maria.Pennells@uwl.ac.uk

Appendix 7: GDPR Statement

Privacy and data protection.

The University of West London is committed to the protection of individuals' rights and privacy. We regard the lawful and correct treatment of personal data as important to our successful operation, and to maintain confidence with our students and staff and other stakeholders.

Any data you provide will be kept in password protected files on secure devices. We will keep your personal details to a minimum by anonymising data where possible.

Any personal data you provide (for example address or telephone number) will be kept for 2 years after the end of the study so that we are able to contact you should we need to (unless you advise us that you do not wish to be contacted). All other data (research data) will be kept securely for 5 years according to the University of West Ealing's code of research conduct and research ethics. After this time your data will be disposed of securely.

In addition to the researcher, the two named supervisors will have access to the data in order to ensure the project is completed to a good standard. They too will be bound by the University Data Protection Policy.

All data is processed in accordance with the General Data Protection Regulations (2018) and the Data Protection Act 2018 which together form the Data Protection Legislation.

For more information about how we use and protect data, please see our Data Protection Policy at

<https://www.uwl.ac.uk/sites/default/files/Departments/About-us/Web/PDF/policies/data-protecton-policy.pdf>

Under the GDPR you have a right to request a copy of your personal data held by the University. The University is required to fulfil this request within 20 working days. You also have the right to:

Withdraw consent where that is the legal basis of our processing

Rectify inaccuracies in personal data that we hold about you

Request to remove some personal data we hold about you restrict the processing in certain ways

Object to certain processing of your personal data by us.

Please see <https://ico.org.uk/> for further information on the above rights. You may also contact the Data Protection Officer for further information (university.secretary@uwl.ac.uk)

You have a right to complain to the Information Commissioner's Office about the way in which we process your personal data. Please see <https://ico.org.uk/>.

Appendix 8: Consent Form

Project: Understanding the Health and Wellbeing of Older Women Living Alone

Researcher: Catherine Forward, PhD Student, University of West London

Main Supervisor: Hafiz Khan, Professor in Public Health, University of West London

Please circle yes (Y) or (N) to confirm that you have:

Read and understood the information sheet. Y/N

Had the opportunity to ask questions prior to your participation in this study and had answers to your satisfaction. Y/N

Understood that your participation is voluntary and that you can withdraw from the study at any stage. Y/N

Understood that you do not have to answer any question that you do not want, and you do not have to give a reason for this. Y/N

Agreed to take part in the study. Y/N

Agreed to have the interview audio recorded. Y/N

Agreed to the use on non-attributable direct quotes when the study is written-up or published. Y/N

Participant Name

Signature

Date

Researcher Name

Signature

Date

Appendix 9: Interview Schedule

Can you tell me a bit about how you came to live her?

Have you made many changes to the property since you have been here?

What would you change about the house/flat if you could?

Have you ever thought of living anywhere else?

Can you tell me about any visitors or help you might have around the house?

Could you talk a bit about your routine? Daily, weekly?

Can you talk to me a bit about your health generally? You do not need to reveal anything you do not wish to.

Can you tell me much about the local area and your connection with it?

Could you talk a little about the things which you value about living alone?

Appendix 10: Protocol in event of distress during interviews

Project: Understanding the Health and Wellbeing of Older Women living alone in the UK.

Prior to interview:

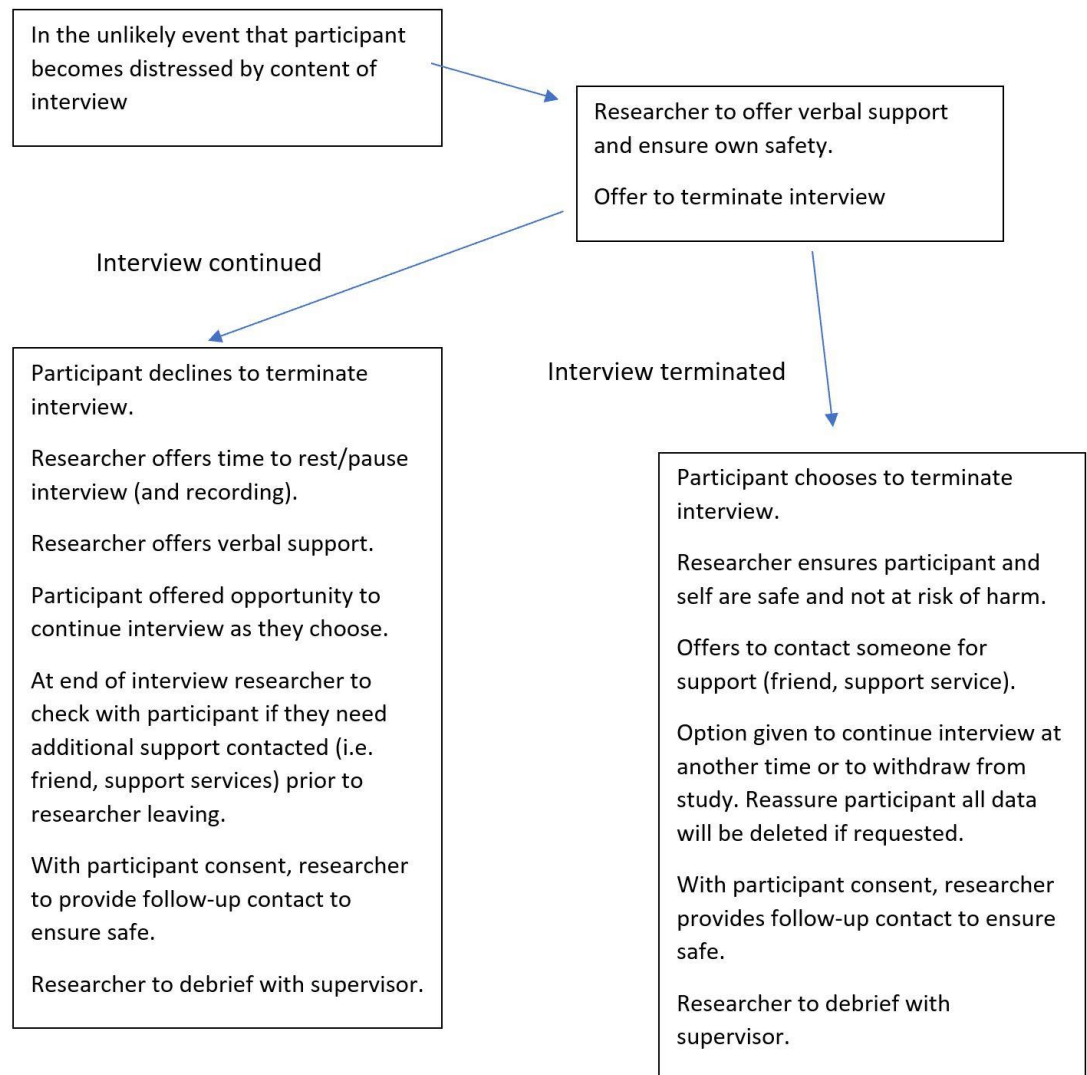
Provide participant with information and opportunity to ask questions to ensure informed as to content of study.

Ensure supervisors are aware of interview times, location and expected duration of interview.

Ensure mobile phone charged and present.

Ensure researcher aware of local support services (i.e. Age UK/Mind etc).

During the interview:



If, at the end of the interview, the researcher does not feel that the participant is safe to be left alone then contact will be made with an appropriate service/person, either family, friends or a local support service. In the very unlikely event that the participant is felt to be at immediate risk then emergency services will be contacted.

Regardless of outcome of interview, researcher to contact supervisor to let them know they are safe.

Appendix 11: Ethics approval Letter



**College of Nursing, Midwifery and
Healthcare**

Research Ethics Panel

Paragon House

Boston Manor Road

Brentford TW8 9GA

Catherine Forward

UWL id. Number 21380121

19 February 2019

Dear Catherine

Re: Application for Ethical Approval No. UWL/REC/CNMH-00495

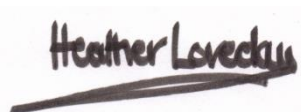
Thank you for sending in your application for approval. The Panel has considered this and approved the research without major amendment.

If the research does not progress, or if you make any changes to your research proposal or methodology can you please inform the Panel in writing as this may entail the need for additional review. It is your responsibility, as the principal investigator, to submit a report on the progress/completion of the research twelve months from the date of this letter. Please find attached a blank report form to be completed by

01 January 2020

The Panel wish you well with your research and look forward to your report.

Yours sincerely

A handwritten signature in dark ink that reads 'Heather Loveday'. The signature is written in a cursive style and is positioned above a horizontal line.

Professor Heather Loveday

Director of Research

Chair, College Research Ethics Panel

Table showing Exp(B) for regressions with presence of a long-term condition as dependent variable (95% Confidence Intervals in parenthesis).

<i>Factors</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>	<i>Model 6</i>	<i>Model 7</i>	<i>Model 8</i>	<i>Model 9</i>
Constant	0.946	0.946	0.084	0.199	0.311	0.309	0.310	0.776	0.766
Women living alone (reference is those living with partners)	0.586 (0.516, *** 0.666)	0.693 (0.606, *** 0.794)	0.861 (0.733, *** 0.794) *	0.816 (0.733, *** 1.011) **	0.887 (0.750, *** 1.049)	1.742 (0.693, *** 4.383)	1.726 (0.686, *** 4.341)	1.659 (0.662, *** 4.155)	1.659 (0.661, *** 4.156)
Women Living with others	0.359 (0.267, *** 0.483)	0.409 (0.303, *** 0.551)	0.394 (0.292, *** 0.532)	0.419 (0.310, *** 0.566)	0.454 (0.335, *** 0.616)	0.866 (0.347, *** 2.161)	0.855 (0.343, *** 2.132)	0.830 (0.334, *** 2.060)	0.825 (0.332, *** 2.051)
Age 75-84 (reference is 65- 74)	-	0.639 (0.554, *** 0.736)	0.664 (0.576, *** 0.766)	0.691 (0.598, *** 0.798)	0.673 (0.582, *** 0.779)	0.675 (0.582, *** 0.782)	0.674 (0.581, *** 0.781)	0.703 (0.605, *** 0.816)	0.703 (0.605, *** 0.816)
Age 85 +	-	0.482 (0.388, *** 0.598)	0.511 (0.411, *** 0.636)	0.544 (0.437, *** 0.679)	0.522 (0.418, *** 0.652)	0.524 (0.416, *** 0.659)	0.524 (0.417, *** 0.660)	0.547 (0.417, *** 0.660)	0.547 (0.433, *** 0.688)
Income (log)	-	-	1.384 (1.214, *** 1.577)	1.263 (1.100, *** 1.450)	1.255 (1.092, *** 1.442)	1.256 (1.092, *** 1.445)	1.256 (1.092, *** 1.445)	1.209 (1.050, *** 1.393)	1.209 (1.049, *** 1.393)
Education A Level or equivalent (reference is degree level)	-	-	-	0.915 (0.713, *** 1.174)	0.927 (0.722, *** 1.191)	0.936 (0.722, *** 1.191)	0.932 (0.725, *** 1.199)	0.937 (0.727, *** 1.208)	0.939 (0.729, *** 1.210)
Education GCSE or equivalent	-	-	-	0.990 (0.814, *** 1.206)	1.024 (0.841, *** 1.248)	1.033 (0.847, *** 1.259)	1.034 (0.848, *** 1.262)	1.044 (0.855, *** 1.275)	1.047 (0.857, *** 1.279)
Education 'Other'	-	-	-	0.773 (0.629) **	0.802 (0.652, *** 0.987)	0.811 (0.659, *** 0.999)	0.809 (0.657, *** 0.996)	0.816 (0.662, *** 1.007)	0.820 (0.664, *** 1.011)

Education 'None'	-	-	-	0.700 (0.585, 0.837) ***	0.792 (0.658, 0.953) **	0.802 (0.665, 0.967) **	0.801 (0.664, 0.966) **	0.829 (0.687, 1.002)	0.834 (0.690, 1.008)
Tenure: Own Home (reference is 'other')	-	-	-	-	0.676 (0.260, 1.760)	0.669 (0.257, 1.742)	0.667 (0.256, 1.738)	0.659 (0.254, 1.712)	0.656 (0.253, 1.704)
Tenure: Mortgaged	-	-	-	-	0.660 (0.243, 1.792)	0.658 (0.242, 1.788)	0.655 (0.241, 1.782)	0.594 (0.219, 1.615)	0.586 (0.217, 1.602)
Tenure: Social Rent	-	-	-	-	0.404 (0.153, 1.063)	0.399 (0.151, 1.053)	0.397 (0.151, 1.048)	0.410 (0.156, 1.077)	0.408 (0.155, 1.073)
Tenure: Private Rent	-	-	-	-	0.604 (0.224, 1.634)	0.603 (0.223, 1.632)	0.604 (0.223, 1.634)	0.580 (0.215, 1.564)	0.573 (0.212, 1.547)
Single/Never Married (reference is married)	-	-	-	-	-	0.592 (0.230, 1.527)	0.594 (0.231, 1.531)	0.613 (0.239, 1.574)	0.616 (0.240, 1.582)
Divorced or separated	-	-	-	-	-	0.488 (0.193, 1.230)	0.493 (0.196, 1.244)	0.483 (0.192, 1.213)	0.485 (0.193, 1.219)
Widowed	-	-	-	-	-	0.501 (0.201, 1.250)	0.604 (0.223, 1.634)	0.516 (0.208, 1.282)	0.518 (0.203, 1.288)
Wales (reference is England)	-	-	-	-	-	-	0.848 (0.637, 1.130)	0.852 (0.639, 1.136)	0.847 (0.634, 1.131)
Scotland	-	-	-	-	-	-	1.075 (0.853, 1.356)	1.091 (0.864, 1.376)	1.088 (0.862, 1.374)
NI	-	-	-	-	-	-	1.286 (0.855, 1.933)	1.323 (0.877, 1.997)	1.311 (0.866, 1.983)

Employment: Unemployed (reference is in paid work)									
	-	-	-	-	-	-	-	0.121 (0.040, 0.369) ***	0.121 (0.040, 0.370)
Retired	-	-	-	-	-	-	-	0.502 (0.389, 0.650) ***	0.502 (0.389, 0.650) ***
Unpaid work	-	-	-	-	-	-	-	0.418 (0.191, 0.915) **	0.413 (0.188, 0.904) ***
Other employment	-	-	-	-	-	-	-	1.665 (0.452, 6.137) **	1.649 (0.448, 6.075) **
Ethnicity	-	-	-	-	-	-	-	-	1.155 (0.727, 1.835)
Rural	-	-	-	-	-	-	-	-	1.047 (0.908, 1.207)
N	4271								
X ² (block)	98.473 ***	66.519 ***	24.064 ***	21.388 ***	30.245 ***	3.496	3.262	41.961 ***	0.724
X ² (model) all ***	98.473	164.993	189.057	210.445	240.690	244.185	247.447	289.408	290.131
Cox and Snell R ²	.023	.038	.044	.049	.056	.056	.057	.067	.067
Nagelkerke R ²	.031	.052	.059	.066	.075	.076	.007	.090	.090

*** = p < 0.001, ** = p < 0.01, * = p < 0.05

Appendix 13 Table A9.4

Table showing Exp(B) for regressions with High/Low use of GP as dependent variable (95% Confidence Intervals in parenthesis).

Factors	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Constant	0.256*** (0.961, 1.246)	0.236*** (0.850, 1.177)	1.391 (0.711, 1.045)	0.521 (0.751, 1.112)	0.218* (0.764, 1.132)	0.188* (0.702, 1.050)	0.190* (0.057, 1.443)	0.175* (0.055, 1.409)	0.178* (0.055, 1.397)
Women living alone (reference is those living with partners)	1.069 (0.961, 1.246)	1.000 (0.850, 1.177)	0.862 (0.711, 1.045)	0.914 (0.751, 1.112)	0.930 (0.764, 1.132)	0.859 (0.702, 1.050)	0.286 (0.057, 1.443)	0.279 (0.055, 1.409)	0.277 (0.055, 1.397)
Women Living with others	1.296 (0.957, 1.753)	1.223 (0.900, 1.660)	1.256 (0.924, 1.706)	1.170 (0.859, 1.594)	1.156 (0.847, 1.577)	1.042 (0.760, 1.429)	0.358 (0.072, 1.787)	0.349 (0.070, 1.744)	0.344 (0.069, 1.721)
Age 75-84 (reference is 65-74)	-	1.290 (1.093, 1.523) **	1.256 (1.063, 1.485) **	1.192 (1.006, 1.412) *	1.151 (0.971, 1.366)	1.180 (0.994, 1.401)	1.180 (0.992, 1.404)	1.184 (0.995, 1.409)	1.185 (0.996, 1.410)
Age 85 +	-	1.255 (0.990, 1.592)	1.204 (0.948, 1.530)	1.118 (0.877, 1.426)	1.083 (0.848, 1.382)	1.113 (0.870, 1.423)	1.113 (0.863, 1.436)	1.124 (0.871, 1.451)	1.130 (0.875, 1.459)
Income (log)	-	-	0.798 (0.682, 0.934) **	0.886 (0.750, 1.047)	0.914 (0.773, 1.081)	0.924 (0.780, 1.096)	0.924 (0.778, 1.096)	0.928 (0.782, 1.102)	0.929 (0.782, 1.102)
Education A Level or equivalent (reference is degree level)	-	-	-	0.983 (0.711, 1.359)	0.975 (0.705, 1.349)	0.964 (0.696, 1.335)	0.962 (0.694, 1.334)	0.955 (0.688, 1.325)	0.959 (0.691, 1.330)
Education GCSE or equivalent	-	-	-	1.056 (0.821, 1.358)	1.041 (0.809, 1.340)	1.019 (0.791, 1.312)	1.017 (0.788, 1.311)	1.028 (0.797, 1.326)	1.029 (0.798, 1.328)
Education 'Other'	-	-	-	1.287 (1.003, 1.652) *	1.265 (0.985, 1.624)	1.230 (0.957, 1.581)	1.230 (0.955, 1.583)	1.238 (0.962, 1.595)	1.236 (0.960, 1.593)
Education 'None'	-	-	-	1.521 (1.226, 1.887) ***	1.460 (1.176, 1.813) ***	1.335 (1.068, 1.669) *	1.330 (1.062, 1.666) *	1.325 (1.057, 1.660) *	1.322 (1.054, 1.657) *

Employment: Unemployed (reference is in paid work)	-	-	-	5.236 (2.329, 11.772) ***	4.745 (2.098, 10.732) ***	4.693 (2.074, 10.623) ***	4.600 (2.030, 10.421) ***	4.535 (2.000, 10.284) ***
Retired	-	-	-	2.014 (1.372, 2.955) ***	2.047 (1.391, 3.014) ***	2.040 (1.385, 3.004) ***	2.038 (1.384, 3.003) ***	2.031 (1.379, 2.993) ***
Unpaid work	-	-	-	1.079 (0.764, 5.123)	2.068 (0.797, 5.367)	2.058 (0.793, 5.344)	1.924 (0.737, 5.024)	1.877 (0.718, 4.910)
Other employment	-	-	-	2.927 (0.770, 11.131)	2.955 (0.773, 11.289)	2.925 (0.765, 11.183)	2.987 (0.782, 11.412)	2.939 (0.767, 11.255)
Tenure: mortgaged (reference is own outright)	-	-	-	-	1.340 (0.932, 1.926)	1.335 (0.928, 1.920)	1.330 (0.925, 1.913)	1.327 (0.922, 1.909)
Social rent	-	-	-	-	1.469 (1.201, 1.798) ***	1.472 (1.201, 1.804) ***	1.477 (1.205, 1.811) ***	1.471 (1.200, 1.804) ***
Private Rent	-	-	-	-	1.731 (1.261, 2.376) ***	1.722 (1.254, 2.365) ***	1.714 (1.247, 2.356) ***	1.721 (1.251, 2.367) ***
Other	-	-	-	-	1.317 (0.436, 3.978)	1.320 (0.437, 3.989)	1.340 (0.443, 4.051)	1.337 (0.442, 4.042)
Marital Status: Single (reference is married)	-	-	-	-	-	3.201 (0.623, 16.456)	3.264 (0.635, 16.785)	3.255 (0.633, 16.740)
Divorced or separated	-	-	-	-	-	2.998 (0.594, 15.127)	3.072 (0.609, 15.510)	3.088 (0.612, 15.592)

Widowed	-	-	-	-	-	-	2.981 (0.596, 14.918)	3.035 (0.606, 15.196)	3.054 (0.610, 15.294)
Wales (reference is England)	-	-	-	-	-	-	-	1.443 (1.058, 1.969) *	1.462 (1.070, 1.997) *
Scotland	-	-	-	-	-	-	-	1.115 (0.849, 1.463)	1.125 (0.856, 1.478)
NI	-	-	-	-	-	-	-	1.370 (0.872, 2.153)	1.401 (0.889, 2.207)
Ethnicity (reference group is White)	-	-	-	-	-	-	-	-	1.220 (0.726, 2.050)
Urban/Rural area (reference is urban)	-	-	-	-	-	-	-	-	0.950 (0.801, 1.127)
N	4267								
X ² (block)	2.951	9.908**	8.021**	20.757***	22.029***	22.394***	2.575	6.929	0.953
X ² (model)	2.951	12.858*	20.879***	41.636***	63.665***	86.060***	88.635***	95.563***	96.516***
Cox and Snell R ²	0.001	0.003	0.005	0.010	0.015	0.020	0.021	0.022	0.023
Nagelkerke R ²	0.001	0.005	0.008	0.015	0.023	0.032	0.032	0.035	0.035

*** = p < 0.001, ** = p < 0.01, * = p < 0.05

Appendix 14 Table A9.5

Table showing Exp(B) for regressions with Self-Rated Health (Good/Bad) as dependent variable (95% Confidence Intervals in parentheses).									
Factors	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Constant	2.538***	2.892***	0.108***	0.693	2.335	2.828	3.089	3.282	2.901
Women living alone (reference is those living with partners)	0.662 (0.577, *** 0.759)	0.752 (0.650, *** 0.869)	0.989 (0.833, *** 1.174)	0.877 (0.735, *** 1.045)	0.855 (0.716, *** 1.021)	1.020 (0.848, *** 1.226)	1.113 (0.418, *** 2.958)	1.137 (0.253, *** 3.025)	1.163 (0.436, *** 3.105)
Women Living with others	0.431 (0.329, *** 0.564)	0.476 (0.362, *** 0.626)	0.451 (0.343, *** 0.594)	0.501 (0.379, *** 0.662)	0.500 (0.377, *** 0.663)	0.598 (0.448, *** 0.798)	0.651 (0.248, *** 1.711)	0.665 (0.253, *** 1.749)	0.675 (0.256, *** 1.780)
Age 75-84 (reference is 65-74)	-	0.671 (0.578, *** 0.778)	0.703 (0.606, *** 0.817)	0.751 (0.645, *** 0.875)	0.785 (0.673, *** 0.916)	0.739 (0.632, *** 0.865)	0.727 (0.620, *** 0.852)	0.724 (0.617, *** 0.849)	0.721 (0.614, *** 0.846)
Age 85 +	-	0.605 (0.488, *** 0.749)	0.646 (0.520, *** 0.801)	0.709 (0.569, *** 0.883)	0.742 (0.594, *** 0.926)	0.679 (0.541, *** 0.852)	0.651 (0.515, *** 0.823)	0.643 (0.508, *** 0.813)	0.629 (0.497, *** 0.796)
Income (log)	-	-	1.519 (1.317, *** 1.752)	1.257 (1.082, *** 1.462)	1.215 (1.043, *** 1.416)	1.194 (1.021, *** 1.396)	1.184 (1.012, *** 1.386)	1.180 (1.008, *** 1.381)	1.184 (1.011, *** 1.387)
Education A Level or equivalent (reference is degree level)	-	-	-	0.701 (0.530, *** 0.926)	0.704 (0.531, *** 0.933)	0.718 (0.540, *** 0.954)	0.706 (0.531, *** 0.939)	0.710 (0.533, *** 0.945)	0.710 (0.533, *** 0.945)
Education GCSE or equivalent	-	-	-	0.756 (0.604, *** 0.947)	0.764 (0.609, *** 0.959)	0.811 (0.644, *** 1.020)	0.797 (0.633, *** 1.003)	0.789 (0.626, *** 0.994)	0.794 (0.630, *** 1.000)
Education 'Other'	-	-	-	0.686 (0.546, *** 0.862)	0.698 (0.555, *** 0.879)	0.749 (0.593, *** 0.945)	0.733 (0.580, *** 0.945)	0.727 (0.580, *** 0.926)	0.741 (0.586, *** 0.938)

Education 'None'	-	-	-	0.448 (0.368, *** 0.545)	0.475 (0.390, *** 0.579)	0.588 (0.479, *** 0.721)	0.574 (0.466, *** 0.706)	0.575 (0.467, *** 0.707)	0.589 (0.478, *** 0.725)
Employment: Unemployed (reference is in paid work)	-	-	-	-	0.067 (0.027, *** 0.167)	0.087 (0.034, *** 0.222)	0.087 (0.034, *** 0.223)	0.089 (0.035, *** 0.227)	0.092 (0.036, *** 0.237)
Retired	-	-	-	-	0.356 (0.248, *** 0.511)	0.360 (0.249, *** 0.519)	0.359 (0.248, *** 0.518)	0.359 (0.248, *** 0.518)	0.362 (0.251, *** 0.523)
Unpaid work	-	-	-	-	0.187 (0.079, *** 0.444)	0.175 (0.073, *** 0.417)	0.172 (0.072, *** 0.411)	0.179 (0.075, *** 0.428)	0.180 (0.075, *** 0.432)
Other employment	-	-	-	-	0.656 (0.142, *** 3.036)	0.622 (0.134, *** 2.893)	0.614 (0.132, *** 2.852)	0.605 (0.130, *** 2.810)	0.607 (0.130, *** 2.826)
Tenure: mortgaged (reference is own outright)	-	-	-	-	-	0.721 (0.512, *** 1.015)	0.717 (0.509, *** 1.011)	0.720 (0.511, *** 1.015)	0.713 (0.505, *** 1.005)
Social rent	-	-	-	-	-	0.400 (0.332, *** 0.482)	0.403 (0.334, *** 0.486)	0.402 (0.334, *** 0.485)	0.408 (0.338, *** 0.492)
Private Rent	-	-	-	-	-	0.470 (0.348, *** 0.633)	0.470 (0.348, *** 0.634)	0.470 (0.348, *** 0.634)	0.455 (0.337, *** 0.615)
Other	-	-	-	-	-	1.875 (0.572, *** 6.140)	1.828 (0.558, *** 5.986)	1.811 (0.553, *** 5.929)	1.875 (0.571, *** 6.160)
Marital Status: Single (reference is married)	-	-	-	-	-	-	0.682 (0.250, *** 1.860)	0.671 (0.246, *** 1.833)	0.679 (0.248, *** 1.859)
Divorced or separated	-	-	-	-	-	-	0.881 (0.250, *** 1.860)	0.863 (0.324, *** 2.298)	0.859 (0.322, *** 2.294)

Widowed	-	-	-	-	-	-	0.978 (0.371, 2.574)	0.962 (0.365, 2.535)	0.959 (0.363, 2.535)
Wales (reference is England)	-	-	-	-	-	-	-	0.730 (.0538, 0.991) *	0.696 (0.512, 0.946) *
Scotland	-	-	-	-	-	-	-	0.914 (0.713, 1.173)	0.886 (0.690, 1.138)
NI	-	-	-	-	-	-	-	0.772 (0.486, 1.227)	0.716 (0.450, 1.139)
Ethnicity (reference group is White)	-	-	-	-	-	-	-	-	0.981 (0.576, 1.669)
Urban/Rural area (reference is urban)	-	-	-	-	-	-	-	-	1.309 (1.117, 1.534) ***
N	4052								
X ² (block)	58.077 ***	37.521 ***	33.957 ***	72.564 ***	60.900 ***	109.365 ***	4.847	5.259	11.311 **
X ² (model)	-	95.599 ***	129.555 ***	202.119 ***	263.019 ***	372.384 ***	377.232 ***	382.491 ***	393.802 ***
Cox and Snell R ²	.014	.023	.032	.049	.063	.088	.090	.091	.093
Nagelkerke R ²	.020	.033	.044	.068	.088	.123	.124	.126	.130

*** = p ≤ 0.001, ** = p < 0.01, * = p < 0.05

Appendix 15 Table A9.6

Table showing Standardised Beta coefficients for regressions with SF-12 MCS as dependent variable (CI in parenthesis).

Factors	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Women living alone (reference is those living with partners)	-0.030 (-1.218, 0.027)	-0.028 (-1.211, 0.105)	0.012 (-0.548, 1.012)	0.001 (-0.779, 0.803)	-0.003 (0.847, 0.737)	0.017 (-0.458, 1.133)	-0.111 (-6.354, 1.984)	-0.119 (-6.509, 1.828)	-0.114 (-6.402, 1.925)
Women Living with others	-0.060 (-3.748, -1.164) ***	-0.060 (-3.740, -1.136) ***	-0.063 (-3.865, -1.261) ***	-0.060 (-3.731, -1.124) ***	-0.060 (-3.744, -1.139) ***	-0.046 (-3.189, -0.579) **	-0.105 (-8.395, -0.154) *	-0.109 (-8.542, -0.302) *	-0.106 (-8.445, -0.212) *
Age 75-84 (reference is 65-74)	-	0.009 (-0.503, 0.863)	0.015 (-3.64, 1.008)	0.017 (-0.332, 1.039)	0.023 (-0.211, 1.174)	0.020 (-0.263, 1.114)	0.014 (-0.410, 0.989)	0.014 (-0.409, 0.990)	0.014 (-0.411, 0.986)
Age 85 +	-	-0.011 (-1.348, 0.671)	-0.005 (-1.160, 0.866)	-0.004 (-1.133, 0.892)	0.001 (-0.985, 1.052)	-0.001 (-1.029, 0.997)	-0.011 (-1.378, 0.727)	-0.010 (-1.343, 0.763)	-0.012 (-1.148, 0.687)
Income (log)	-	-	0.073 (0.540, 1.781) ***	0.052 (0.181, 1.486) *	0.045 (0.068, 1.382) *	0.034 (-0.116, 1.196)	0.029 (-0.194, 1.124)	0.029 (-0.195, 1.122)	0.029 (-0.201, 1.115)
Higher Education	-	-	-	0.052 (0.445, 1.914) **	0.051 (0.403, 1.872) **	0.037 (0.101, 1.572) *	0.041 (0.179, 1.660) *	0.040 (0.162, 1.642) *	0.037 (0.096, 1.577) *
Employed	-	-	-	-	0.041 (0.307, 2.574) *	0.037 (0.171, 2.428) *	0.039 (0.243, 2.504) *	0.039 (0.274, 2.534) *	0.038 (0.228, 2.485) *
Homeowner	-	-	-	-	-	0.112 (1.842, 3.330) ***	0.109 (1.770, 3.263) ***	0.109 (1.783, 3.275) ***	0.108 (1.741, 3.232) ***
Single/Never Married (reference is married)	-	-	-	-	-	-	0.055 (-1.860, 6.742)	0.058 * (- 1.719, 6.880)	0.058 (-1.675, 6.912)
Divorced or separated	-	-	-	-	-	-	0.059 (-2.418, 5.934)	0.064 (-2.280, 6.070)	0.063 (-2.300, 6.041)
Widowed	-	-	-	-	-	-	0.137 (-1.261, 6.999)	0.144 (-1.124, 7.134)	0.142 (-1.149, 7.100)
Wales (reference is England)	-	-	-	-	-	-	-	-0.007 (-1.657, 1.073)	-0.011 (-1.866, 0.871)

Scotland	-	-	-	-	-	-	-	-	-	0.045 (0.491, 2.670) **	0.041 (0.357, 2.539) **
NI	-	-	-	-	-	-	-	-	-	-0.006 (-2.461, 1.643)	-0.011 (-2.763, 1.349)
Rural (reference is Urban)	-	-	-	-	-	-	-	-	-	-	0.055 (0.511, 1.835) **
Ethnicity (reference is White)	-	-	-	-	-	-	-	-	-	-	-0.001 (-2.285, 2.150)
N	3992	-	-	-	-	-	-	-	-	-	-
Adjusted R Squared	.003	.003	.006	.008	.010	.021	.021	.023	.025		

*** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$
CI = Confidence Intervals

Appendix 16 Table A9.7

Table showing standardised Beta coefficients for regressions with SF-12 Physical Component Score as dependent variable (CI in parenthesis).

Factors	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Women living alone (reference is those living with partners)	-0.173 (-5.429, -3.770) ***	-0.095 (-3.383, -1.676) ***	-0.060 (-2.596, -0.574) **	-0.083 (-3.225, -1.184) ***	-0.091 (-3.435, -1.398) ***	-0.059 (-2.579, -0.555) **	0.062 (-3.647, 6.962)	0.068 (-3.491, 7.120)	0.072 (-3.404, 7.206)
Women Living with others	-0.119 (-8.289, -4.848) ***	-0.091 (-6.692, -3.316) ***	-0.094 (-6.842, -3.466) ***	-0.087 (-6.454, -3.090) ***	-0.088 (-6.490, -3.141) ***	-0.066 (-5.270, -1.951) ***	-0.010 (-5.773, 4.713)	-0.007 (-5.615, 4.873)	-0.005 (-5.513, 4.977)
Age 75-84 (reference is 65-74)	-	-0.152 (-5.192, -3.421) ***	-0.146 (-5.025, -3.246) ***	-0.143 (-4.933, -3.163) ***	-0.128 (-4.534, -2.753) ***	-0.133 (-4.641, -2.889) ***	-0.134 (-4.679, -2.889) ***	-0.134 (-4.693, 2.913) ***	-0.134 (-4.694, -2.914) ***
Age 85 +	-	-0.223 (-10.388, -7.770) ***	-0.218 (-10.162, -7.534) ***	-0.216 (-10.080, -7.467) ***	-0.204 (-9.598, -6.979) ***	-0.207 (-9.684, -7.107) ***	-0.208 (-9.803, -7.124) ***	-0.210 (-9.858, -7.178) ***	-0.211 (-9.918, -7.236) ***
Income (log)	-	-	0.065 (0.592, 2.201) **	0.022 (-0.369, 1.316)	0.006 (-0.710, 0.981)	-0.012 (-1.101, 0.568)	-0.012 (-1.106, 0.571)	-0.013 (-1.125, 0.552)	-0.013 (-1.127, 0.549)
Higher education (reference is school-level or below)	-	-	-	0.109 (2.377, 4.273) ***	0.105 (2.249, 4.138) ***	0.084 (1.607, 3.479) ***	0.084 (1.612, 3.496) ***	0.084 (1.612, 3.496) ***	0.083 (1.577, 3.464) ***
Employed	-	-	-	-	0.094 (3.076, 5.992) ***	0.088 (2.795, 5.664) ***	0.088 (2.782, 5.658) ***	0.088 (2.807, 5.683) ***	0.088 (2.778, 5.654) ***
Homeowner	-	-	-	-	-	0.179 (4.644, 6.536) ***	0.179 (4.640, 6.540) ***	0.178 (4.628, 6.527) ***	0.177 (4.589, 6.490) ***
Single/Never Married (reference is married)	-	-	-	-	-	-	-0.065 (-9.388, 1.557)	-0.067 (-9.503, 1.441)	-0.066 (-9.479, 1.464)
Divorced or separated	-	-	-	-	-	-	-0.082 (-8.600, 2.027)	-0.086 (-8.767, 1.862)	-0.087 (-8.805, 1.822)

Widowed	-	-	-	-	-	-0.110 (-8.354, 2.156)	-0.114 (-8.476, 2.035)	-0.115 (-8.523, 1.987)
Wales (reference is England)	-	-	-	-	-	-0.020 (-2.921, 0.554)	-0.022 (-3.071, 0.417)	
Scotland	-	-	-	-	-	-0.010 (-1.853, 0.921)	-0.012 (-1.959, 0.822)	
NI	-	-	-	-	-	-0.030 (-5.358, -0.135) *	-0.033 (-5.578, -0.338) *	
Ethnicity	-	-	-	-	-	-0.010 (-3.793, 1.858)		
Rural	-	-	-	-	-	0.026 (-0.091, 1.596)		
N	3992	-	-	-	-	-	-	-
Adjusted R Squared	.035	.085	.087	.097	.106	.135	.134	.135

*** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$

Appendix 17 Table A9.8

Table showing Standardised Beta coefficients for regressions with GHQ as dependent variable (CI in parenthesis).

Factors	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Constant	-	-	-	-	-	-	-	-	-
Women living alone (reference is those living with partners)	-0.39 (-0.706, -0.070) **	-0.33 (-0.663, 0.008)	-0.18 (-0.581, 0.213)	-0.093 (-3.007, 1.138)	-0.100 (-3.074, 1.072)	-0.108 (-3.153, 0.987)	-0.092 (-2.985, 1.134)	-0.100 (-3.067, 1.065)	-0.100 (-3.068, 1.064)
Women Living with others	-0.054 (-1.780) ***	-0.52 (-1.738, -0.415) ***	-0.053 (-1.762, -0.437) ***	-0.087 (-3.863, 0.261)	-0.090 (-3.297, 0.198)	-0.092 (-3.958, 0.161)	-0.078 (-3.664, 0.436)	-0.079 (-3.687, 0.414)	-0.080 (-3.707, 0.395)
Age 75-84 (reference is 65-74)	-	-0.014 (-0.498, 0.198)	-0.011 (-0.473, 0.227)	-0.022 (-0.587, 0.125)	-0.022 (-0.587, 0.125)	-0.013 (-0.502, 0.215)	-0.015 (-0.517, 0.197)	-0.015 (-0.516, 0.197)	-0.015 (-0.517, 0.197)
Age 85 +	-	-0.017 (-0.775, 0.259)	-0.014 (-0.714, 0.300)	-0.030 (-1.000, 0.081)	-0.029 (-0.986, 0.195)	-0.023 (-0.891, 0.195)	-0.022 (-0.876, 0.204)	-0.022 (-0.881, 0.199)	-0.022 (-0.881, 0.200)
Income (log)	-	-	0.026 (-0.103, 0.531)	0.020 (-0.152, 0.482)	0.020 (-0.154, 0.480)	0.009 (-0.246, 0.395)	-0.006 (-0.371, 0.271)	-0.012 (-0.432, 0.239)	-0.012 (-0.434, 0.238)
Single/Never Married (reference is married)	-	-	-	0.052 (-0.948, 3.359)	0.054 (-0.899, 3.407)	0.057 (-0.843, 3.458)	0.054 (-0.885, 3.393)	0.055 (-0.867, 3.411)	0.055 (-0.866, 3.412)
Divorced or separated	-	-	-	0.002 (-2.054, 2.118)	0.006 (-1.998, 2.174)	0.005 (-2.009, 2.157)	0.013 (-1.872, 2.272)	0.015 (-1.842, 2.304)	0.016 (-1.830, 2.317)
Widowed	-	-	-	0.093 (-1.062, 3.056)	0.098 (-1.005, 3.113)	0.102 (-0.959, 3.153)	0.100 (-0.972, 3.119)	0.105 (-0.925, 3.171)	0.016 (-1.830, 2.317)
Wales (reference is England)	-	-	-	-	-0.008 (-0.897, 0.514)	-0.009 (-0.904, 0.504)	-0.009 (-0.906, 0.495)	-0.009 (-0.910, 0.491)	-0.010 (-0.924, 0.482)
Scotland	-	-	-	-	0.037 (0.115, 1.228) *	0.038 (0.132, 1.244) *	0.040 (0.158, 1.264) *	0.039 (0.154, 1.260) *	0.039 (0.151) *
NI	-	-	-	-	0.000 (-1.051, 1.058)	-0.001 (-1.077, 1.029)	0.000 (-1.034, 1.061)	0.001 (-1.028, 1.066)	0.000 (-1.048, 1.054)

Employed	-	-	-	-	0.057 (0.466, 1.624) ***	0.052 (0.374, 1.527) **	0.052 (0.362, 1.516) **	0.051 (0.355, 1.054) **
Homeowner	-	-	-	-	-	0.109 (0.910, 1.668) ***	0.107 0.886, 1.649) ***	0.107 (0.891, 1.655) ***
Higher Education	-	-	-	-	-	-	0.015 (-0.200, 0.557)	0.014 (-0.215, 0.543)
Ethnicity	-	-	-	-	-	-	-	0.019 (-0.417, 1.840)
Rural	-	-	-	-	-	-	-	0.011 (-0.214, 0.464)
N	4021							
Adjusted R Squared	.003	.003	.003	.006	.007	.010	.020	.020

*** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$
 CI = Confidence Intervals

Appendix 18 Table A9.9

Table showing multinomial regressions on life satisfaction		
Life Satisfaction (reference is completely satisfied)		Sig. Exp B (CI in parenthesis)
Not Satisfied	Intercept	0.716
	Log Income	0.480 0.929 (0.758, 1.139)
	Age Category 65-74	0.440 0.872 (0.617, 1.234)
	Age Category 75-84	0.389 0.859 (0.609, 1.213)
	Age Category 85+	
	Education: School Level or below	0.691 1.052 (0.820, 1.348)
	Education: Degree Level or above	
	Married/Civil Partner	0.451 0.903 (0.692, 1.178)
	Single/Never Married	0.158 1.407 (0.876, 2.259)
	Divorced/Separated	0.008 1.615 (1.133, 2.301) **
	Widowed	
	Do not own home	0.000 1.540 (1.214, 1.954) ***
	Homeowner	
	Not in employment	0.028 0.632 (0.420, 0.953) *
	In employment (paid or otherwise)	
	England	0.327 0.685 (0.321, 1.461)
	Wales	0.375 0.677 (0.285, 1.604)
	Scotland	0.202 0.586 (0.258, 1.333)
	Northern Ireland	
	White	0.052 2.023 (0.992, 4.124)
	Non-White	
	Urban	0.034 1.273 (1.018, 1.592) *
	Rural	
Somewhat Satisfied	Intercept	0.358
	Log Income	0.854 0.979 (0.784, 1.223)
	Age Category 65-74	0.196 0.782 (0.539, 1.135)
	Age Category 75-84	0.148 0.761 (0.526, 1.101)

Age Category 85+			
Education: School Level or below	0.117		1.252 (0.945, 1.658)
Education: Degree Level or above			
Married/Civil Partner	0.021		0.711 (0.532, 0.951) *
Single/Never Married	0.563		0.847 (0.482, 1.488)
Divorced/Separated	0.101		1.381 (0.939, 2.031)
Widowed			
Do not own home	0.196		1.192 (0.913, 1.556)
Homeowner			
Not in employment	0.006		0.543 (0.351, 0.838) **
In employment (paid or otherwise)			
England	0.064		0.486 (0.226, 1.044)
Wales	0.198		0.561 (0.232, 1.353)
Scotland	0.055		0.439 (0.189, 1.019)
NI			
White	0.890		1.049 (0.531, 2.074)
Non-White			
Urban	0.220		1.166 (0.912, 1.490)
Rural			
Intercept	0.363		
Log Income	0.409		1.072 (0.908, 1.266)
Age Category 65-74	0.775		0.958 (0.713, 1.288)
Age Category 75-84	0.706		0.945 (0.705, 1.268)
Age Category 85+			
Education: School Level or below	0.100		0.846 (0.693, 1.032)
Education: Degree Level or above			
Married/Civil Partner	0.179		0.860 (0.691, 1.071)
Single/Never Married	0.577		1.126 (0.743, 1.707)
Divorced/Separated	0.145		1.264 (0.922, 1.732)
Widowed			

Do not own home	0.603	0.945 (0.765, 1.168)
Homeowner		
Not in employment	0.004	0.604 (0.428, 0.851) **
In employment (paid or otherwise)		
England	0.191	0.650 (0.341, 1.240)
Wales	0.131	0.568 (0.273, 1.183)
Scotland	0.131	0.585 (0.292, 1.173)
NI		
White	0.015	2.023 (1.146, 3.570) *
Non-White		
Urban	0.575	0.950 (0.794, 1.136)
Rural		

CI = Confidence Intervals at 95%

*** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$