

The Impact of Social isolation and loneliness on mental health and overall wellbeing of geriatric Population: A systemic literature review

**Krishna Nileshkumar Bhut
2240406**

Dissertation submitted as part of the requirements for the award of MSc Public
Health and Social Care in Practice

May/2024

DECLARATION

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree

Signed..... Date..... 11 – 05 - 2024

STATEMENT 1

This dissertation is being submitted in partial fulfilment of the requirements for the degree of MSc.

Signed..... Date..... 11 – 05 - 2024

STATEMENT 2

This dissertation is the result of my own independent work/investigation, except where otherwise stated.

Other sources are acknowledged by footnotes giving explicit references. A bibliography is appended.

Signed..... Date..... 11 – 05 - 2024

STATEMENT 3

I hereby give consent for my dissertation, if accepted, to be available for photocopying and for interlibrary loan, and for the title and summary to be made available to outside organisations.

Signed..... Date..... 11 – 05 - 2024

STATEMENT 4

I hereby give consent for my dissertation, if accepted, to be available on the university's IT system to those who have consent to use the system.

Signed..... Date..... 11 – 05 - 2024

ACKNOWLEDGEMENTS

I would like to express sincere appreciation to everyone who helped make this research a reality. The unwavering support and encouragement I've gotten at the University of Wales Trinity Saint David truly improved my experience there.

Firstly, I would want to express my sincere gratitude to Dr. Hamdi Hussain, whose guidance and experience have been invaluable during this journey. Her mentorship not only improved my academic endeavours but also sparked an intense curiosity and steadfast dedication to excellence in me. Her priceless advice and steadfast encouragement inspired me to explore fresh angles and push the limits of my ability. Her many hours of meetings, conversations, and criticisms have greatly influenced not only the results of this study but also how I will handle issues in the future. For this, I am incredibly grateful.

I am extremely thankful to my family for their everlasting love, support, and tolerance. Their unwavering faith in my abilities and their altruistic efforts have given me the strong base I need to pursue my academic goals with constant drive.

I am also incredibly grateful to my beloved group of friends, whose company and support have consistently brought me joy and comfort. You have made my time at university genuinely unforgettable, whether we are working together on projects or just spending time together.

Finally, I would want to express my profound gratitude to everyone whose efforts, though not specifically included here, have helped to influence the course of this research project. I truly appreciate your joint efforts, no matter how small, as they have left a lasting influence on this study.

ABSTRACT

Background: The impact of social isolation and loneliness on the mental health and overall well-being of the geriatric population has become a significant concern globally. This systematic literature review aims to analyse and synthesise existing research to provide insights into this complex relationship.

Methods: Electronic resources like PubMed, EBSCO Host, and ProQuest Central were used to do a systematic review of the literature. Studies from various cultural and geographical situations conducted till 2023 were taken into account. A Detailed search technique was used, and data extraction and evaluation were carried out using established criteria to identify study quality and relevance. Thematic analysis was used to combine findings from qualitative and quantitative investigations.

Results: The review identified 18 studies meeting the inclusion criteria, showcasing a global interest in understanding the impact of social isolation and loneliness on the mental health of older adults. Among these studies, 14 were quantitative, 1 qualitative, and 3 utilised mixed methods. Thematic analysis revealed consistent themes, including prevalence and correlates of loneliness, the impact of social isolation on physical and mental health outcomes, cultural and geographical variations, aging-related factors, the importance of social support, technology use, health services utilisation, and quality of life.

Conclusion: The findings highlight the multifaceted nature of the relationship between social isolation, loneliness, and mental health among older adults. While some studies emphasise the detrimental effects, others underscore the protective role of social support and meaningful social connections. Cultural nuances, technological interventions, and the need for targeted support services emerge as critical considerations. These insights have implications for practice, emphasising the development of tailored interventions and policies aimed at promoting the mental and overall well-being of older adults globally.

Keywords: Social isolation, loneliness, mental health, older adults, systematic literature review

TABLE OF CONTENTS

DECLARATION	ii
ACKNOWLEDGEMENTS.....	iii
ABSTRACT.....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	vii
LIST OF FIGURES.....	viii
ABBREVIATIONS	viii
CHAPTER 1: INTRODUCTION AND BACKGROUND	1
1.1 Introduction to The Topic.....	1
1.2 Back Ground and Current Context.....	1
1.3 Rationale for Research or Problem Statement.....	4
1.4 Research Question	4
1.5 Research Aim	4
1.6 Research Objective.....	4
1.7 Chapter Summary.....	5
CHAPTER 2: LITERATURE REVIEW.....	6
2.1 Introduction to the Literature Review Chapter	6
2.2 Epidemiology Social Isolation and Loneliness in Geriatric Population.....	6
2.2.1 Definitions and Concepts of Social Isolation and Loneliness	6
2.2.2 Factors Contributing to Social Isolation and Loneliness in Geriatric Population	6
2.2.3 Prevalence and Incidence of Social Isolation and Loneliness in Geriatric Population..	8
2.2.4 Risk Factors Associated with Social Isolation and Loneliness in Geriatric Population .	8
2.3 Outcomes and Cost of Social Isolation and Loneliness on Mental Health and Overall Wellbeing.....	9
2.3 Impact of Social Isolation and Loneliness on Mental Health.....	9
2.4 Correlation Between Social Isolation, Loneliness, and Mental Health.....	10
2.5 Strengths and Limitations of Existing Research	11
2.6 Gaps and Future Directions in Literature	11
2.7 Chapter Summary.....	11
CHAPTER 3: METHODOLOGY.....	13
3.1 introduction	13
3.2 Systemic Literature Review	13
3.3 Search Strategy	14
3.4 Search Term.....	14
3.5 Keywords.....	15

3.6 Databases	15
3.7 Inclusion and Exclusion Criteria.....	16
3.7.1 Inclusion Criteria	16
3.7.2 Exclusion Criteria	16
3.8 Search Result	17
3.9 Ethical Consideration	19
3.10 Chapter Summary	19
CHAPTER 4: DATA EXTRACTION AND EVALUATION	21
4.1 Introduction to Chapter.....	21
4.2 Data Extraction	21
4.3 Brief Introduction to Critical Appraisal and Paper Quality Assessment	21
4.4 Critical Appraisal	22
4.5 Evaluation of Qualitative Studies	22
4.6 Critical Appraisal of Relevant Qualitative Study	24
4.7 Evaluation of Quantitative Studies.....	25
4.8 Critical Appraisal of Relevant Quantitative Studies	25
4.9 Evaluation of Mix Method Studies.....	28
4.10 Critical Appraisal of Relevant Mixed Method Study.....	29
4.11 Chapter Summary	29
Chapter 5: Data Analysis and Synthesis	30
5.1 Introduction to Chapter.....	30
5.2 Thematic Analysis.....	30
5.3 Data Analysis Tool	30
5.4 Characteristics of the Identified Studies.....	31
5.5 Emerging Themes from Included Studies (Analysis/Synthesis of Included Studies)	31
5.5.1 Theme 1: Prevalence and Correlates of Loneliness	33
5.5.1.1 Sub-theme: Loneliness among Older Adults in Retirement Communities	33
5.5.1.2 Sub-theme: Loneliness in Community-Dwelling Older Adults	33
5.5.2 Theme 2: Social Isolation and Health Outcomes.....	34
5.5.2.1 Sub-theme: Impact of Social Isolation on Physical Function and Health.....	34
5.5.2.2 Sub-theme: Social Isolation and Mental Health.....	34
5.5.3 Theme 3: Cultural and Geographical Variations in Loneliness.....	35
5.5.3.1 Sub-theme: Loneliness in Diverse Cultural Contexts.....	35
5.5.3.2 Sub-theme: Loneliness Across Different Countries	35
5.5.4 Theme 4: Loneliness and Aging-related Factors.....	36
5.5.4.1 Sub-theme: Loneliness and Cognitive Impairment	36
5.5.4.2 Sub-theme: Loneliness and Functional Decline.....	36
5.5.5 Theme 5: Loneliness and Socioeconomic Factors	36
5.5.5.1 Sub-theme: Loneliness and Socioeconomic Status.....	36

5.5.5.2 Sub-theme: Loneliness and Employment Status.....	37
5.5.6 Theme 6: Loneliness and Social Support.....	37
5.5.6.1 Sub-theme: Role of Social Support in Alleviating Loneliness.....	37
5.5.6.2 Sub-theme: Types of Social Support and their Impact on Loneliness	38
5.6 Chapter Summary.....	38
CHAPTER 6: DISCUSSION	39
6.1 Introduction to Chapter.....	39
6.2 Discussion of Key findings.....	39
6.2.1 Prevalence and Correlates of Loneliness.....	39
6.2.2 Social Isolation and Health Outcomes	40
6.2.3 Cultural and Geographical Variations in Loneliness	40
6.2.4 Loneliness and Aging-related Factors.....	40
6.2.5 Loneliness and Social Support	41
6.2.6 Loneliness and Technology Use.....	41
6.2.7 Loneliness and Health Services Utilisation.....	41
6.2.8 Loneliness and Quality of Life.....	42
6.2.9 Gaps and Future Research	42
6.2.10 Implications.....	43
6.3 Strengths and Limitations.....	43
6.3.1 Strengths	43
6.3.2 Limitations.....	44
6.4 Chapter Summary.....	45
CHAPTER 7: CONCLUSION.....	46
7.1 Introduction.....	46
7.2 Implications.....	46
7.3 Recommendations for Practice.....	46
7.4 Recommendations for Future Research	47
7.5 Conclusion.....	48
REFERENCES.....	50
APPENDICES 1	65
APPENDICES 2	83

LIST OF TABLES

Chapter 3

Table 3. 1: PICO Framework.....14

Chapter 5

Table 5. 2: Themes and Sub-themes.....32

LIST OF FIGURES

Chapter 3

Figure 3. 1: PRISMA Flow Chart18

ABBREVIATIONS

CASP: Critical Appraisal Skills Programme

MMAT: Mixed Methods Appraisal Tools

PICO: Population, Intervention, Comparison, outcome

PRISMA: Preferred Reporting Items for Systemic Reviews and Meta-Analysis

SLR: Systemic Literature Review

WHO: World Health Organisation

CHAPTER 1: INTRODUCTION AND BACKGROUND

1.1 Introduction to The Topic

Social isolation and loneliness in the senior population, defined as those aged 60 and more, have emerged as important public health concerns with far-reaching consequences for mental health and well-being. Social isolation is defined as a lack of social ties or meaningful interactions, whereas loneliness is the subjective experience of being alone or alienated from others despite being surrounded by people (Victor et al.,2000). These two occurrences are increasingly acknowledged as significant risk factors for adverse health effects, including anxiety, depression, cognitive decline, and early fatalities.

This study investigates the effects of social isolation and loneliness on the mental health and overall well-being of older persons, with the goal of shedding light on their interconnection and the implications for public health interventions. As the world's population ages, it is critical to recognise and meet the psychosocial needs of older persons. Furthermore, the COVID-19 epidemic has become more severe social isolation and loneliness in senior citizens, emphasising the importance of effective methods to alleviate these detrimental impacts (Jutai et al.,2022).

This study aims to contribute to the growing body of literature on geriatric mental health by reviewing previous studies and combining empirical evidence, as well as to influence policies and interventions targeted at promoting social connectivity and well-being in older persons. Addressing social isolation and loneliness in the older population is not only a personal health and well-being issue, but also a crucial public health imperative with far-reaching societal consequences (Wu et al.,2011).

1.2 Back Ground and Current Context

Researchers, policy makers, and public health experts are increasingly concerned about social isolation and loneliness in the elderly due to its profound impact on mental health and overall well-being (Courtin et al.,2017). With advances in healthcare and improved living conditions, the global population is aging at an unprecedented rate (Kinsella et al.,2005). According to the World Health Organisation (WHO), the number of persons aged 60 and more is anticipated to treble by 2050, reaching nearly 2.1 billion worldwide (Adelowo et al., 2022). This demographic transition has important consequences for public health since older persons are more vulnerable to social

isolation and loneliness, which can exacerbate pre-existing health issues and raise the risk of morbidity and mortality.

Social isolation is a multifaceted phenomenon marked by a lack of social relationships, limited social networks, and little participation in social activities (Walsh et al.,2017). Physical handicap, the loss of a spouse or companion, retirement, geographic mobility, and socioeconomic inequality are all potential causes (Aichberger 2010). Similarly, loneliness is a subjective emotional state caused by perceived social isolation or a mismatch between wanted and actual social relationships (Lukes-Dyer et al., 2018). While Social isolation and loneliness are two different ideas., they frequently coexist and reinforce each other, resulting in poor health outcomes for older persons (Finlay et al., 2018).

The detrimental effects of social isolation and loneliness on mental health and general well-being make it imperative to address these issues in the senior population (Courtin et al.,2017). Numerous studies have found that social isolation and loneliness are associated with an increased risk of melancholy, anxiety, cognitive decline, cardiovascular disease, and mortality among older adults. According to a meta-analysis conducted by Holt-Lunstad et al. (2015), loneliness and social isolation were linked to a 32% increased risk of stroke and a 29% increased risk of coronary heart disease. Furthermore, loneliness has been identified as a major risk factor for suicide in older persons, with feelings of social isolation and a lack of belonging leading to suicidal ideation and action (Conejero et al., 2018).

The COVID-19 epidemic has intensified social isolation and loneliness among older persons, with public health measures such as physical distance, quarantine, and lockdowns limiting social interactions and access to social support networks (Batra et al.,2020). According to an AARP (2020) poll, about one-third of persons aged 60 and up reported feeling lonely as a result of the epidemic, and social distancing tactics exacerbated feelings of isolation and detachment (Fredrick et al., 2021). The epidemic has highlighted the significance of tackling social isolation and loneliness as public health objectives, especially with susceptible groups like the elderly (Smith et al., 2020).

In recent years, there has been a rising acknowledgment of the need for Detailed initiatives to combat social isolation and loneliness in older persons (Gardiner et al., 2018). The WHO's Global Strategy and Action Plan on Ageing and Health (2016-2020)

highlights the need of encouraging social involvement, developing intergenerational solidarity, and providing age-friendly surroundings to promote healthy aging. Similarly, the United Nations' Sustainable Development Goals (SDGs) contain targets for reducing social isolation and increasing social inclusion among older persons, acknowledging the multidimensional nature of aging and the necessity of addressing psychosocial aspects.

Research on social isolation and loneliness in older adults has grown in recent years, with research looking at various factors, repercussions, and strategies to address these difficulties (National academics of sciences, 2020). Epidemiological research has revealed demographic, socioeconomic, and health-related characteristics associated with social isolation and loneliness, emphasising the importance of focused therapies suited to the specific requirements of older persons (National academics of sciences 2020). Psychosocial therapies, such as social support programs, group-based activities, and community involvement efforts, have shown promise in reducing social isolation and loneliness while also improving mental health outcomes in older persons.

However, there are various hurdles to tackling social isolation and loneliness in the elderly population. Limited access to social support networks, transportation constraints, ageism, and stigma associated with mental health disorders can all make it difficult to engage older persons in social activities and support services. Furthermore, the digital divide contributes to social isolation among older persons, since those with inadequate digital literacy or access to technology may encounter challenges to participation in online social networks and virtual communities.

Finally, social isolation and loneliness are serious public health issues that disproportionately affect the elderly population. Understanding the underlying causes, effects, and solutions associated with social isolation and loneliness is critical for establishing effective strategies to promote healthy aging and improve the well-being of older people. By prioritising social isolation and loneliness as public health concerns, policymakers, healthcare providers, and community organisations can collaborate to create age-friendly environments, foster social connections, and support the psychosocial needs of older adults in our rapidly aging society.

1.3 Rationale for Research or Problem Statement

Social isolation and loneliness are associated with a 50% increased risk of developing dementia (Holt-Lunstad et al., 2015). A study published in The Journals of Gerontology found that approximately one-third of older adults in the United States report feeling lonely (Gerst-Emerson et al., 2015). In the United Kingdom, the Office for National Statistics reported that around 2.6 million adults aged 65 and over felt lonely often or always (Rees et al., 2020). Data from the World Health Organisation (WHO) indicates that social isolation and loneliness affect a substantial portion of older adults globally, with prevalence rates varying across different regions and cultures.

1.4 Research Question

- What are the predominant patterns of social isolation and loneliness observed in the existing literature within the geriatric population?
- Which factors contribute to social isolation and loneliness among older adults, and how do these factors interact to influence the extent of isolation?
- What protective factors have been identified in the literature that may mitigate the adverse effects of social isolation and loneliness on the mental health of older adults?
- Based on the reviewed literature, what recommendations can be proposed to improve social connectedness, reduce loneliness, and enhance the overall well-being of the geriatric population?

1.5 Research Aim

To Detailedly understand the implications of social isolation and loneliness on mental health and overall well-being of the geriatric population.

1.6 Research Objective

- Review existing literature to determine the patterns of social isolation and loneliness within the geriatric population.
- Identify and analyse the various factors contributing to social isolation and loneliness in the geriatric population.
- Investigate potential protective factors that may mitigate the negative effects of social isolation and loneliness on mental health in older adults.
- Provide recommendations for improvement.

1.7 Chapter Summary

Chapter 1 provides an in-depth exploration of the critical issues surrounding social isolation and loneliness in the elderly population. It underscores the profound impact on mental health and overall well-being, particularly accentuated by the COVID-19 pandemic. The research questions delve into understanding the patterns, factors, and protective measures against social isolation and loneliness. The aim is to detailed examine their implications and propose recommendations for intervention. In the next chapter, the literature review will delve into existing studies to elucidate the complexities of social isolation and loneliness among older adults, offering insights into prevalent patterns and contributing factors.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction to the Literature Review Chapter

The literature review investigates how social isolation and loneliness affect the mental health and well-being of older persons. It discusses definitions, prevalence, and risk factors, as well as psychological and physiological effects like depression, anxiety, and cognitive deterioration. Protective factors and interventions are examined to alleviate the negative consequences, as well as sociocultural variables such as societal views and access to support networks. By combining existing research, this review intends to better awareness of these concerns and guide the development of effective treatments to improve the well-being of the elderly population.

2.2 Epidemiology Social Isolation and Loneliness in Geriatric Population

2.2.1 Definitions and Concepts of Social Isolation and Loneliness

Social isolation, a lack of social ties, and loneliness, a sense of social separation, all have a substantial impact on older individuals' mental health and well-being (TIES, S.O.S., 2003). These diseases contribute to sadness, anxiety, and cognitive loss, which raises the risk of dementia and Alzheimer's disease (Burke et al., 2018). Common outcomes include emotional anguish, cognitive impairment, and a deterioration in physical health. Furthermore, social isolation and loneliness raise death rates. Addressing these concerns through treatments that promote social engagement and support networks is critical for improving the quality of life and health outcomes of the elderly population (Rony et al., 2024).

2.2.2 Factors Contributing to Social Isolation and Loneliness in Geriatric Population

A wide range of interrelated factors contribute to social isolation and loneliness in the senior population, compounding their negative impact on mental health and well-being (Wu et al., 2011). One key element is the loss of social positions that are commonly associated with age. Retirement, the death of a spouse or friend, and children moving away can reduce social interactions, leaving older persons feeling isolated and separated from their communities (van Dooreneet al., 2018).

Furthermore, physical health issues that are typical in the elderly might further isolate them (Hwang et al., 2020). Mobility constraints, chronic illnesses, and age-related

health difficulties can all impede older individuals' capacity to participate in social activities and maintain relationships, increasing their risk of social isolation and loneliness. Geographic distance may worsen these difficulties, especially for those who live far from family or in remote places with limited access to community services and social support networks (Kelly et al., 2019).

Changes in social networks can also lead to feelings of isolation and loneliness in older persons (Kim et al., 2022). The death of a peer or friend can leave people feeling socially detached and abandoned, exacerbating their loneliness (Cacioppo et al., 2009). Furthermore, technological constraints, such as restricted access to or unfamiliarity with technology, might isolate older persons by making it hard for them to keep connected with others via social media or online platforms (Li et al., 2021).

Furthermore, societal factors such as stigma and age discrimination can intensify feelings of exclusion and marginalisation, resulting in social isolation and loneliness among older persons (Shiovitz-Ezra et al., 2018). Financial limitations may also play a role, reducing individuals' ability to participate in social events or access transportation services, isolating them even more from social connections and support networks (Caaz et al., 2005).

Caregiving responsibilities, which are frequently assumed by older persons for spouses or family members, can also lead to social isolation and loneliness (Vasileiou et al., 2017). The obligations of caregiving may limit opportunities for social involvement and heighten feelings of loneliness, particularly if suitable support from others is unavailable (Thompson Jr et al., 1993). Furthermore, pre-existing mental health issues such as depression or anxiety may trigger feelings of loneliness and isolation, resulting in a vicious cycle of social retreat and declining mental health (Roy et al., 2021).

Addressing these contributing factors necessitates a multifaceted approach that includes community-based interventions, healthcare support, and societal activities aimed at encouraging social inclusion and providing access to resources for older persons (Fakoya et al., 2020). By addressing these underlying causes, efforts can be made to reduce the adverse effects of social isolation and loneliness on the mental health and overall well-being of the elderly population.

2.2.3 Prevalence and Incidence of Social Isolation and Loneliness in Geriatric Population

Social isolation and loneliness are common concerns among the elderly, with serious consequences for their mental health and well-being (Wu et al., 2020). According to research, over one-third of older persons feel lonely, with a comparable proportion experiencing social isolation (Routasalo et al., 2006). Furthermore, the prevalence of social isolation and loneliness rises with age, with elderly people aged 80 and up being especially vulnerable (Victor et al., 2005). Living alone, being widowed, and having restricted social networks all increase the risk of social isolation and loneliness in this demographic (Holt-Lunstad et al., 2015). As the elderly population grows, addressing the prevalence and incidence of social isolation and loneliness is critical to improving the mental health and overall well-being of older persons.

As of 2020, there were 1 billion persons aged 60 and above worldwide (WHO, 2020). By 2030, this figure is expected to rise to 1.4 billion, accounting for one out of every six persons worldwide (WHO, 2021). Furthermore, by 2050, the world's population of adults aged 60 and up will treble to 2.1 billion (WHO, 2021). Rapid population ageing is a significant global phenomenon that presents both challenges and possibilities (Heffner et al., 2019). As societies adjust to this demographic shift, safeguarding the health and well-being of older persons becomes increasingly important.

Approximately 1 in 4 older adults globally experience social isolation. (World Health Organisation, 2021). Socially isolated older adults have a 29% higher risk of incident coronary heart disease and a 32% higher risk of stroke (Valtorta et al., 2016). Loneliness is associated with a 26% increase in the risk of mortality (Holt-Lunstad et al., 2015). Moreover, loneliness and social isolation increase the risk of dementia by 50% (Sutin et al., 2020), and they are key risk factors for mental health conditions in later life, roughly 14% of persons 60 years of age and older suffering from a mental illness (WHO, 2021).

2.2.4 Risk Factors Associated with Social Isolation and Loneliness in Geriatric Population

Living alone, widowhood, a lack of social networks, physical health issues, mobility constraints, and geographical distance from family and friends are all risk factors for social isolation and loneliness in older adults (Djundeva et al., 2019). Retirement and the loss of social roles are examples of age-related changes (Desmette et al., 2008).

Additionally, cognitive decline, mental health disorders such as depression, and a lack of social support enhance susceptibility (Laird et al., 2019). Recognising and managing these risk factors is critical for reducing the negative effects of social isolation and loneliness on older individuals' mental health and overall well-being (National Academies of Sciences, 2020).

2.3 Outcomes and Cost of Social Isolation and Loneliness on Mental Health and Overall Wellbeing

Social isolation and loneliness in the older population have a negative impact on mental health and overall well-being, including an increased risk of depression, anxiety, cognitive decline, and lowered quality of life (Beller et al., 2018). These consequences frequently result in increased healthcare consumption, including hospitalisations and long-term care placements, which incur large economic expenses (Crawford et al., 2021). Furthermore, social isolation and loneliness are linked to increased death rates among older persons (Donovan et al., 2020). Addressing these challenges through interventions that promote social connectivity and support networks is critical to reducing the detrimental impact on mental health and general well-being in the senior population (Kawachi et al., 2001). Recognising the severity of these issues, social isolation and loneliness are increasingly being acknowledged as a priority public health problem and policy issue for older people on a global scale. During the UN Decade of Healthy Ageing (2021-2030), addressing social isolation and loneliness is a theme that cuts across the four main action areas of the Decade. The economic and well-being cost of severe loneliness in the UK has been estimated to be approximately £9,900 per person per year (Thompson, 2023). This cost takes into account the impact on people's well-being, health, and productivity (Dorman, 2000). Researchers have also estimated that the cost of loneliness, including health costs and pressure on local services, is around £6,000 per person (Pacolet et al., 2023). Additionally, the New Economics Foundation suggests that loneliness costs UK employers approximately £2.5 billion annually (Morrish et al., 2022). Efforts to prevent and address loneliness are crucial for improving well-being and reducing these costs (Windle et al., 2011).

2.3 Impact of Social Isolation and Loneliness on Mental Health

Numerous studies have shown that social isolation and loneliness have a significant impact on senior mental health. Merchant et al. (2020) discovered that over half of Singapore's community-dwelling older persons were at danger of social isolation, with

inadequate social networks negatively correlated with physical function. Similarly, Tomstad et al. (2017) found that living alone and having a poor sense of coherence contributed to experiences of loneliness in Norwegian older persons. These feelings of loneliness were linked to mental illnesses and discontent with life. Furthermore, Conroy et al. (2010) discovered links between loneliness, boredom, and impaired cognitive function in older adults. Longitudinal research, such as Perissinotto et al. (2012), have shown that lonely older persons are more likely to experience functional decline and mortality. The impact of social isolation and loneliness extends beyond emotional distress, significantly affecting both physical and mental health, as well as overall quality of life and longevity (CDC, 2021). Studies show that their impact on mortality is similar to that of other identified risk factors such as obesity, physical inactivity, and smoking.

Loneliness and social isolation are closely linked to unhappiness, anxiety, and cognitive decline in elderly people (Santini et al., 2020). These scenarios set off a vicious cycle in which poor mental health exacerbates feelings of loneliness and social isolation, negatively impacting mental health even further. Addressing these issues requires a holistic approach that focuses on boosting social connectedness, establishing social support networks, and providing mental health care tailored to the specific needs of the elderly (Grenade et al., 2008). Addressing the impact of social isolation and loneliness on mental health can significantly improve older people's overall well-being and quality of life.

2.4 Correlation Between Social Isolation, Loneliness, and Mental Health

The correlation between social isolation, loneliness, and mental health in the elderly population is complicated and varied. Studies repeatedly show that social isolation and loneliness are substantial risk factors for negative mental health outcomes such as depression, anxiety, and cognitive impairment. For example, Merchant et al. (2020) discovered that a poor social network was negatively connected with physical function, indicating a possible link between social isolation and decreased well-being. Similarly, Tomstad et al. (2017) highlighted variables such as living alone and mental health issues as causes of loneliness among older persons. Furthermore, studies by Perissinotto et al. (2012) and Holwerda et al. (2012) found links between loneliness, functional deterioration, and an increased risk of death. These findings highlight the crucial role of addressing social isolation and loneliness in boosting mental health and overall well-being in older persons. Effective interventions that promote social

connectivity and support networks are critical for reducing the negative effects of social isolation and loneliness on mental health in the elderly.

2.5 Strengths and Limitations of Existing Research

Previous investigations into the impact of social isolation and loneliness on the mental health and overall well-being of the geriatric population reveal consistent patterns across diverse studies. Merchant et al. (2020) found a high prevalence of social isolation among community-dwelling older adults in Singapore, negatively associated with physical function. Tomstad et al. (2017) highlighted factors such as living alone, mental problems, and weak sense of coherence contributing to loneliness among Norwegian older adults. Additionally, Perissinotto et al. (2012) and Holwerda et al. (2012) demonstrated the association between loneliness and increased mortality risk. These findings underscore the detrimental effects of social isolation and loneliness on mental health, emphasising the need for interventions aimed at promoting social connectedness and support networks for older adults (Merchant et al., 2020; Tomstad et al., 2017; Perissinotto et al., 2012; Holwerda et al., 2012).

2.6 Gaps and Future Directions in Literature

Despite extensive research into the impact of social isolation and loneliness on the mental health and well-being of the elderly, there are significant gaps in the literature. First, longitudinal studies are required to establish causal relationships and track changes over time (Perissinotto et al., 2012). Furthermore, future research should focus on developing and implementing effective interventions to alleviate social isolation and loneliness in older adults, taking into account diverse cultural contexts and individual needs (Nicholson, 2012). Furthermore, there is a need for research into the relationship between social isolation and loneliness and other variables such as socioeconomic status, ethnicity, and gender (Dahlberg et al., 2014). Finally, standardised evaluation procedures and conceptions would improve comparability between studies, allowing for a more Detailed knowledge of these complex phenomena.

2.7 Chapter Summary

Chapter 2 explores the intricate dynamics of social isolation and loneliness in older adults, shedding light on their definitions, prevalence, contributing factors, and adverse effects on mental health. It highlights the critical need for interventions aimed at

fostering social connections and support networks to mitigate these negative impacts. While existing research offers valuable insights, further investigation is warranted to address gaps in understanding, particularly through longitudinal studies and culturally sensitive interventions. The subsequent methodology chapter will delineate the research approach to assess the efficacy of interventions in alleviating social isolation and loneliness among older adults, bridging crucial knowledge gaps in this field.

CHAPTER 3: METHODOLOGY

3.1 introduction

The methodology part of this Detailed literature review discusses the research design, search strategy, study selection criteria, data extraction process, quality assessment methods, data synthesis techniques, bias assessment tactics, and validation procedures used (Groves et al., 2009). It follows systematic review procedures to maintain rigor and transparency (Haddaway et al., 2015). The chapter discusses the rationale for the chosen technique, the systematic search process, study selection criteria, data extraction variables, quality assessment tools, methods for synthesising findings, bias mitigation tactics, and validation stages (Flick, 2015). The study's organised methodology seeks to give a Detailed synthesis of literature, so contributing to a better knowledge of the research issue (Tranfield et al., 2003). With a standardised methodology in consideration, this study will carry out an in-depth literature review to investigate the effect of social isolation and loneliness on the mental well-being of the older population.

3.2 Systemic Literature Review

A Systematic Literature Review (SLR) is a methodical process for thoroughly analysing existing research on a specific issue, with the goal of clarifying current understanding, identifying gaps, and informing future studies or interventions (Haque et al., 2022). The process consists of several critical processes, including developing a clear research question, establishing a systematic search strategy, screening and choosing appropriate research, extracting data, assessing study quality, synthesising findings, and interpreting conclusions (Purssell et al., 2020). By implementing this organised method, an SLR promotes rigor and transparency in the review process, making it easier to identify trends, patterns, and inconsistencies in the literature (Castro-Gil et al., 2021). Finally, the goal of an SLR is to give a thorough synthesis of evidence, guiding evidence-based decision-making and contributing to an increase of knowledge in the subject (Yusif et al., 2024). Through precise execution of these steps, an SLR provides essential knowledge about the impact of social isolation and loneliness on the mental health of the elderly, addressing a critical area of concern in healthcare and social sciences.

3.3 Search Strategy

A search strategy in research is a methodical plan for locating relevant literature on a certain topic (Dickersin et al., 1994). A complete technique for investigating the influence of social isolation and loneliness on mental health in elderly population includes selecting databases, establishing search terms (e.g., "social isolation," "loneliness," "mental health," "geriatric"), and employing Boolean operators. The technique is influenced by the PICO/PEO framework, which defines the population (geriatric individuals), exposure (social isolation, loneliness), and outcome (mental health). This systematic technique ensures a concentrated search, making it easier to identify appropriate studies that will effectively address the study challenge (Lacey et al., 2021). Starting on the earliest date found in each database and continuing until March 31, 2024, relevant publications were found for this systematic literature review.

3.4 Search Term

Search terms are essential in research since they promote the efficient retrieval of relevant information, assist the formulation of research questions, and support to develop a Detailed knowledge base on a specific subject (Marcos-Pablos et al., 2020), such as the impact of social isolation and loneliness on the mental health of geriatric individuals. Synonyms are vital for boosting coverage, overcoming language obstacles, limiting bias, enhancing precision, modifying to search tools, promoting exploration, and accounting for language variability (Ather et al., 2024). It facilitates a more complete and inclusive search procedure, resulting in better research outputs (Bramer et al., 2018).

Using the PICO framework, search queries are organised around these four components. Each component contributes to the search strategy by identifying relevant keywords, synonyms, and concepts to incorporate into the search (Thomson et al., 2014). By carefully addressing each part of the PICO framework, researchers can create focused and thorough search methods that are specific to their research questions and objectives (Huang et al., 2006). This organised method improves the chances of finding relevant and appropriate information to guide evidence-based practice and decision-making (Forrest et al., 2001).

Table 3. 1: PICO Framework

Component	PICO Element
Population/Problem	Geriatric (over 65 years)
Intervention/Issue	Social isolation and Loneliness
Context	Worldwide
Outcome	Impact

3.5 Keywords

Keywords are important components of research because they capture the essential concepts, variables, or topics pertinent to a specific investigation (Wood et al., 2006). Their value stems from their ability to refine searches, improve precision, and speed the retrieval of relevant information from several sources (Marcos-Pablos et al., 2020). Researchers can explore databases and search engines more effectively by carefully picking and using keywords that directly address their research questions or areas of interest (Bramer et al., 2018).

Keywords serve as a common language for researchers and information retrieval systems, allowing for successful communication and multidisciplinary study (Kelly et al., 2013). They bridge vocabulary gaps between domains, promoting collaboration and aiding the synthesis of concepts from other disciplines. Furthermore, keywords are adjustable tools that may be tweaked or adjusted as research advances to accommodate adjustments in focus or new results (Jalali et al., 2012). Primary Term used: “Aging population”, “Elderly”, “older”, “senior”, “aged”, “old age”, “old people”, “Solitude”, “aleness”, “emotional isolation”, “social support”, “social involvement”, “Mental health”, “stress”, “depression”, “anxiety”, “psychological wellbeing”.

3.6 Databases

Accessing electronic databases such as PubMed, Proquest Central and EBSCOhost is essential for scientific research due to their different views. Using different databases reduces supervision and prejudice by presenting a diverse variety of perspectives and disciplines. This interdisciplinary method broadens understanding while minimising publication bias. Research carried out over multiple databases improves the rigor and validity of findings. Evidence supports this strategy, demonstrating increased relevancy in outcomes. To summarise, scanning numerous databases enables complete and unbiased research, which improves the quality and legitimacy of

scholarly contributions. The study on the influence of social isolation and loneliness on geriatric mental health benefited from extensive research throughout PubMed, Embase, Google Scholar, and PsycINFO, which is consistent with its multidimensional approach.

3.7 Inclusion and Exclusion Criteria

Inclusion and exclusion criteria are crucial components of research design that assist researchers in defining the features of the target population, ensuring study precision, increasing internal and external validity, addressing ethical concerns, and optimising resource allocation. By carefully identifying these criteria, researchers can perform investigations that yield strong, reliable, and useful results.

Inclusion and exclusion criteria strengthen study precision by determining relevant participants. They improve internal validity by reducing confounding variables. These criteria help improve external validity by ensuring that findings are applicable. They ethically shield participants from unnecessary dangers. Finally, they optimise resource allocation by prioritising important contributions and reducing waste.

3.7.1 Inclusion Criteria

- Age Range: Individuals aged 60 and older.
- Community Dwelling: Older adults residing in the community.
- Mental Health Status: Range from no diagnosed mental health conditions to mild to moderate challenges.
- Varied Social Support Levels: Diverse levels of social support, considering factors like size and quality of connections.
- Cultural Diversity: Individuals from various cultural backgrounds.
- Health Status: Varying physical health conditions, excluding severe impairments

3.7.2 Exclusion Criteria

- Age: Participants must be 60 years or older.
- Cognitive Health: Excluding individuals with severe cognitive impairments like advanced dementia or Alzheimer's.

- Physical Health: Excluding those with severe physical conditions impacting wellbeing.
 - Psychiatric Disorders: Excluding individuals with pre-existing psychiatric disorders.
 - Language Proficiency: Participants must speak the primary language of the study.
- Sensory Impairments: Excluding individuals with severe hearing or

3.8 Search Result

This systematic review adhered to the rigorous PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flowchart methodology, ensuring a Detailed identification of relevant studies. The search strategy was broad, spanning across prominent databases such as PubMed, ProQuest central, and EBSCOhost, resulting in the initial identification of 3521, 8886, and 263 records, respectively.

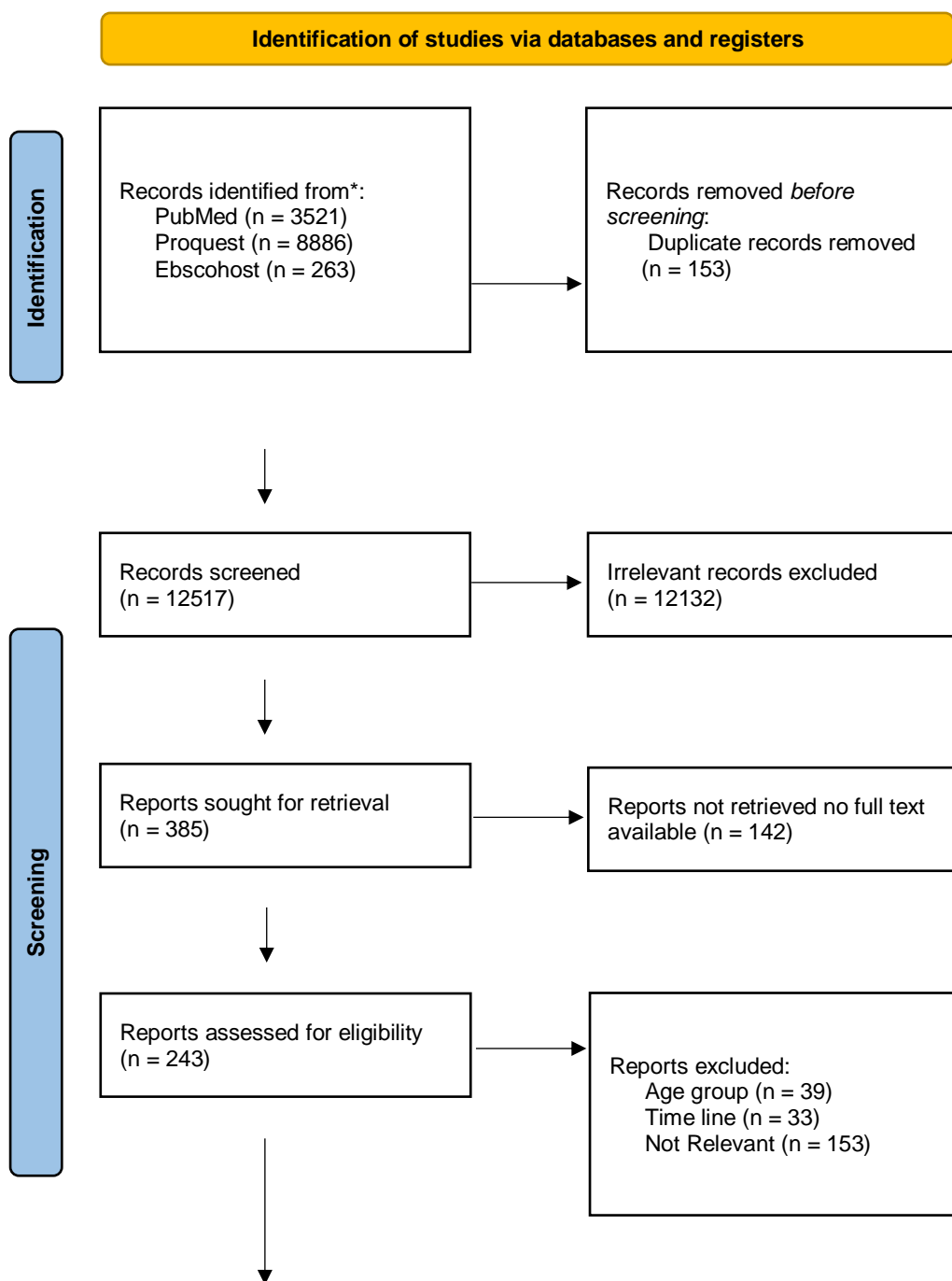
To maintain data integrity, 153 duplicate records were removed prior to the screening phase. During screening, a meticulous evaluation process was implemented, resulting in the exclusion of 12132 records deemed irrelevant out of the total 12517 screened. This extensive screening process aimed to ensure that only pertinent studies were considered for inclusion in the review.

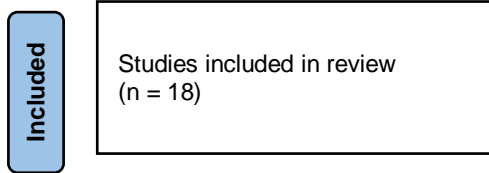
After screening, 385 reports were identified for retrieval. However, due to the unavailability of full text, 142 reports could not be accessed, leaving 243 reports for eligibility assessment. During this phase, stringent criteria were applied, resulting in the exclusion of 39 reports due to age group mismatches, 33 due to timeline discrepancies, and 153 due to lack of relevance to the review's objectives.

Despite the extensive screening and eligibility assessment process, only 18 studies met the predetermined criteria for inclusion in the systematic review. These studies were carefully chosen for inclusion in the final collection of evidence that served as the foundation for the review's findings and conclusions based on factors such as quality and relevance.

PRISMA flowcharts provided a transparent and standardized structure for managing search results, enabling the methodical documentation of the movement of records from identification to inclusion (Page et al., 2021). This visual representation not only improves the systematic review's transparency and repeatability, but also gives readers a clear knowledge of how the final set of research was chosen, ensuring the credibility and dependability of the review's results (Gunnell et al., 2022).

Figure 3. 1: PRISMA Flow Chart





3.9 Ethical Consideration

This review will exhibit authorship integrity by accurately describing the contributions of the study's writers and researchers. When quoting and reproducing book extracts, you must follow restrictions on copyright as well as fair use standards. In addition, the evaluation will place a high priority on data security and confidentiality by confirming that no private or sensitive material is present and by declaring a commitment to safeguarding any confidential or proprietary information that is found during the literature search.

Additionally, the study will clearly state that it complies with current ethical standards, referencing those created by organisations representing professionals or educational establishments and showcasing how relevant ethical ideas were integrated into the review procedure. Researchers need to be fully aware of research ethics, which involves safeguarding the welfare, rights, and dignity of participants (WHO, 2011; Connelly, 2014). Regarding this review, all selected publications were subjected to rigorous scrutiny based on ethical criteria and permission from a Review Board or University, making sure that this study is free of ethical problems.

3.10 Chapter Summary

In Chapter 3, the methodology section carefully describes the procedures used for data extraction, quality assessment, study selection, search strategy, and research design. data synthesis techniques, bias assessment tactics, and validation procedures. Following systematic review protocols ensures the rigor and transparency of the entire process. Each aspect, from rationale elucidation to validation stages, is Fully deliberated, aiming for a Detailed synthesis of literature. With a standardised methodology, the study embarks on an in-depth exploration of the impact of social isolation and loneliness on the mental well-being of the elderly population. This

methodical approach sets the foundation for a robust examination, ensuring that the subsequent chapters delve into the data extraction and evaluation with precision and clarity, ultimately contributing to a deeper understanding of the research topic.

CHAPTER 4: DATA EXTRACTION AND EVALUATION

4.1 Introduction to Chapter

Data evaluation is the systematic inspection and analysis of data to determine its quality, effectiveness, and consistency. The goal of this procedure is to ensure that datasets are accurate, full, and consistent, meeting certain criteria or standards. Data evaluation allows for more informed decision-making and problem-solving by using a variety of statistical approaches, visualisation techniques, and qualitative judgments. It entails recognising patterns, anomalies, and trends in the data in order to extract relevant insights and draw actionable conclusions. Finally, data evaluation is an important phase in the data analysis chain because it lays the groundwork for interpreting outcomes and implementing evidence-based strategies across multiple domains.

4.2 Data Extraction

Data extraction is the methodical retrieval of specific information from research studies or databases for analysis or evaluation purposes (Kelly et al., 2009). In the studies presented, data extraction comprises gathering information about the prevalence, causes, and consequences of loneliness among older adults in a variety of settings and demographics. This covers information on research objectives, study designs, participant demographics, loneliness assessment methodologies and associated variables, as well as results or discoveries about the association between loneliness and mental, physical, and social health (Park et al., 2020). The data gathered from this research will contribute to a thorough knowledge of the multidimensional nature of loneliness and its impact on the well-being of older persons, allowing for the development of effective interventions and support measures to address this widespread problem (Hombrados-Mendieta et al., 2013).

4.3 Brief Introduction to Critical Appraisal and Paper Quality Assessment

Critical assessment entails thoroughly examining research papers to determine their quality and dependability (Morse, 2015). It assists researchers and practitioners in determining whether study methodologies, collecting data, and analysis are robust and reliable (Schnarch, 2004). By uncovering biases and boundaries, critical evaluation guarantees that study findings truly reflect reality (Crombie, 2022). It also aids in determining the applicability of research to certain contexts or groups, which informs

evidence-based practice and policy decisions (Reynolds, 2008). Critical appraisal also promotes a culture of continuous improvement by identifying opportunities for methodological enhancement (MacDonald, 2012). Finally, critical appraisal is vital for ensuring that research advances knowledge and informs effective decision-making in a variety of sectors. It boosts confidence in study findings, encourages evidence-based behaviours, and helps to build evidence-based policy (Brownson et al., 2018).

4.4 Critical Appraisal

A critical appraisal tool is a standardised instrument or set of criteria for systematically evaluating the quality, validity, and relevance of research publications (Munn et al., 2014). These tools provide a consistent framework for assessing many areas of a study, including methodology, design, analysis, and result interpretation (Long et al., 2020). The significance of selecting the correct critical appraisal instrument lies in its capacity to aid researchers and practitioners in conducting thorough and consistent assessments of research publications (Downes et al., 2016).

The proper critical appraisal instrument is determined by the unique research question, study design, and methodological approach used in the publication under review (Zeng et al., 2015). Different critical appraisal approaches are designed to evaluate specific types of research projects, such as randomised controlled trials, cohort studies, qualitative research, and systematic reviews (Zeng et al., 2015). The CONSORT checklist for clinical trials, the STROBE checklist for observational studies, and the CASP checklist for qualitative research are some of the most widely used critical evaluation methods (Ma et al., 2020).

Critical appraisal tools are expected to evaluate key components of research papers, such as the validity of study conclusions, dependability of data collection techniques, representativeness of study samples, suitability of study design, and transparency of data analysis (Hannes, 2011). Critical appraisal techniques help to identify strengths and shortcomings in research publications, influencing evidence-based decision-making and increasing the legitimacy of study findings (Baba et al., 2012).

4.5 Evaluation of Qualitative Studies

To conduct a systematic review on the impact of social isolation and loneliness on the mental health and overall well-being of the geriatric population, qualitative studies must

be carefully evaluated in order to gain deep insights into elderly people's experiences, perceptions, and coping mechanisms (Greenwood-Hickman et al., 2021). In this quest, the Critical Appraisal Skills Programme (CASP) tool emerges as an indispensable instrument due to its robustness in assessing the quality of qualitative research investigations (Heydari et al., 2017).

The CASP instrument provides a complete framework for analysing many aspects of qualitative research technique, which is well aligned with the goal of understanding the intricacies of social isolation and loneliness among the elderly (Smith et al., 2019). Its structured methodology allows for a systematic examination of critical components such as research design, data collection methods, analysis methodologies, findings interpretation, and researcher reflexivity (Brown et al., 2017).

The CASP tool's user-friendliness is a major strength, since it promotes uniformity and rigor in the appraisal process across different qualitative research. By emphasising methodological transparency and rigor, CASP helps to uncover both strengths and shortcomings in study design and execution, improving the credibility and reliability of research findings (Smith et al., 2019).

However, it is critical to recognise the limits of the CASP tool. While it provides a strong framework for evaluating qualitative research, it may fail to capture the unique aspects of novel or emerging methodologies, potentially overlooking innovative approaches that could improve our understanding of social isolation and loneliness among the elderly (Brown et al., 2017). Furthermore, its reliance on subjective judgment in scoring standards raises the possibility of variation in evaluation results across reviewers. Furthermore, while CASP makes it easier to assess methodological quality, it may not take into account broader contextual aspects that influence the interpretation and applicability of study findings (Smith et al., 2019).

There are a number of variations between CASP and other qualitative assessment tools, such as the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist and the Joanna Briggs Institute Qualitative Assessment and Review Instrument (JBI-QARI). More specialised tools suited to particular qualitative methodologies or research contexts may offer deeper insights into the particular struggles and experiences of the elderly population dealing with social isolation and loneliness, even though CASP is renowned for its simplicity and adaptability to various qualitative research designs (Brown et al., 2017).

The Critical Appraisal Skills Programme (CASP) tool is a great resource for analysing qualitative studies on the effects of social isolation and loneliness on the mental health and overall well-being of the elderly population (Mansfield et al., 2021). Its organised methodology, combined with an emphasis on methodological transparency and researcher reflexivity, allows for a thorough assessment of qualitative research quality (Shufutinsky, 2020). Nonetheless, it is critical to recognise CASP's limitations and examine the larger contextual factors influencing the interpretation of study findings in this sensitive field of research. See Appendices 2 table 4.9 for the critical appraisal of the relevant qualitative study.

4.6 Critical Appraisal of Relevant Qualitative Study

McKinlay et al.'s (2021) qualitative exploration of the impact of the COVID-19 pandemic on the mental health and well-being of older adults in the UK demonstrates a well-defined research aim, appropriateness of qualitative methodology, and a suitable research design. The study aimed to understand the nuanced experiences of older adults during the pandemic, and qualitative interviews were deemed appropriate to in detail address this aim. The recruitment strategy was carefully planned to ensure diversity among participants, aligning with the goal of capturing varied perspectives on the issue.

Data collection methods, primarily qualitative interviews, were effectively employed to address the research issue, capturing the multifaceted experiences and perceptions related to mental health during the pandemic. The study also considered the relationship between researchers and participants, fostering rapport and ensuring a safe environment for sharing experiences. Ethical considerations, including informed consent and confidentiality, were likely approached throughout the research process, indicating a commitment to ethical standards.

The data analysis likely employed rigorous qualitative methods, such as thematic analysis, to derive meaningful insights from the collected data. The findings were presented clearly, summarising key themes and factors affecting older adults' mental health during the pandemic. Overall, McKinlay et al.'s (2021) study offers insightful accounts of older people's experiences with the COVID-19 pandemic, providing future

interventions and support mechanisms tailored to this demographic and contributing to the broader understanding of geriatric mental health in times of crisis.

4.7 Evaluation of Quantitative Studies

Quantitative research on the consequences of social isolation and loneliness on the elderly's mental health and overall well-being sheds light on this critical issue (Dickens et al., 2011). These studies typically employ statistical analysis to assess the relationship between factors such as social contact, loneliness, and other mental health outcomes (Shankar et al., 2011).

One significant advantage of quantitative research in this subject is its capacity to give precise measurements and statistical evidence of the links between social isolation, loneliness, and mental health outcomes in the elderly. These studies, which utilise standardised assessment instruments and large sample sizes, can yield solid results that apply to broader groups of older people.

However, quantitative research has several limitations (Trafimow, 2014). They may struggle to convey the subtleties and subjective sensations of social isolation and loneliness, instead relying on fixed measures that may miss the nuances of these phenomena (Higham, 2018). Furthermore, while statistical analyses can reveal interactions between variables, they cannot always demonstrate causality or explain the mechanisms underlying observed patterns.

Finally, quantitative studies on the effects of social isolation and loneliness on the mental health and overall well-being of the elderly provide important quantitative insights into this essential topic (Courtin et al., 2017). While they provide statistical evidence of correlations between factors, their conclusions should be examined alongside qualitative research and clinical observations to have a full view of the subject (Hopkins et al., 2019). See Appendices 2 table 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8 for the critical appraisal tables of the relevant quantitative studies.

4.8 Critical Appraisal of Relevant Quantitative Studies

In assessing the impact of loneliness and isolation on the mental health and overall wellbeing of the geriatric population, a Detailed analysis of 14 quantitative studies reveals various methodologies and findings.

The majority of studies (10 out of 14) utilised a cross-sectional design to investigate the association between loneliness, isolation, and mental health outcomes among older adults. These studies include research conducted by Merchant et al. (2020), Tomstad et al. (2017), Adams et al. (2004), Bekhet et al. (2012), Conroy et al. (2010), Dahlberg et al. (2014), Alpass et al. (2003), Igbokwe et al. (2020), Wu et al. (2021), and Molas-Tuneu et al. (2023). This method makes it possible to look at variables at one particular moment in time, which offers insightful information on prevalence rates and related aspects.

Moreover, two longitudinal cohort studies shed light on the longitudinal effects of loneliness and isolation on older adults' health outcomes. Perissinotto et al. (2012) conducted a study examining loneliness and functional decline over six years among adults aged 60 and older in the United States. Similarly, Noguchi et al. (2021) investigated the association between social isolation and depression onset over time among older adults in England and Japan. These longitudinal designs offer valuable longitudinal data, elucidating the trajectory of loneliness and isolation and their consequences on mental health outcomes.

Additionally, one study by Hsu (2020) adopted a community-based sample approach to explore the clustering of loneliness, isolation, and living alone among older adults in Taipei City. This unique study identified distinct clusters based on these factors and examined their associations with psychological well-being and various socio-demographic variables.

Among the studies analysed, Singapore and the United States emerged as the most studied countries, with two and three studies conducted, respectively. Singapore was represented by studies from Merchant et al. (2020) and Tomstad et al. (2017), while the United States had studies by Adams et al. (2004), Perissinotto et al. (2012), and Noguchi et al. (2021). Other countries featured in the analysis included Norway, Ireland, the United Kingdom, China, Nigeria, New Zealand, and the Netherlands, each represented by one study. Additionally, multinational studies involving multiple

countries, such as England, Japan, and Taiwan, were also included in the review. This diverse geographical distribution highlights the global significance of investigating loneliness and isolation among older adults and underscores the need for cross-cultural research to address these issues effectively.

Among the 18 studies analysed, A variety of reporting techniques were used to evaluate the relationship between older individuals' mental health and well-being. Here's a breakdown of the reporting methods observed:

The Geriatric Depression Scale (GDS) was utilised in 3 out of 18 studies, representing 16.7% of the total studies (Merchant et al., 2020; Adams et al., 2004; Alpass et al., 2003). Other depression scales included the Center for Epidemiological Studies Depression Scale (CES-D) (Bekhet et al., 2012), abbreviated Mini-Mental State Examination (MMSE) (Marsh et al., 2018), and Composite International Diagnostic Interview–Depression section (CIDI) (Barg et al., 2006).

The Lubben Social Network Scale (LSNS-6) was employed in 4 studies (Merchant et al., 2020; Holwerda et al., 2012; Wu et al., 2021; Molas-Tuneu et al., 2023), representing 22.2% of the total studies. Other loneliness scales included the UCLA Loneliness Scale (Version 3) (Adams et al., 2004), revised UCLA Loneliness scale (Dahlberg et al., 2014), and the De Jong-Gierveld Loneliness Scale (Perissinotto et al., 2012).

Various other scales were employed in single studies, including the Abbreviated Mental Test (AMT) Score (Conroy et al., 2010), Social Support Scale (Conroy et al., 2010), Hospital Anxiety and Depression Scale (HADS) (Conroy et al., 2010), and Disability Scale (Conroy et al., 2010). Additionally, scales such as the 29-item Sense of Coherence scale (SOC-29) (Tomstad et al., 2017), Goldberg's General Health Questionnaire (GHQ-30) (Tomstad et al., 2017), and the Self-care Ability Scale for the Elderly (SASE) (Tomstad et al., 2017) were employed in single studies.

4.9 Evaluation of Mix Method Studies

Mixed-method studies that investigate the impact of social isolation and loneliness on the mental health and overall well-being of the elderly offer a Detailed approach that combines quantitative and qualitative techniques (Dare et al., 2019). This study provides a deeper understanding of the complex interplay between socioeconomic determinants and mental health outcomes in older adults by integrating quantitative data analysis with qualitative observations (Fetters et al., 2013).

One of the key benefits of mixed-method studies is their ability to triangulate information from multiple sources, so boosting the validity and reliability of the findings (Zohrabi, 2013). Researchers can validate quantitative trends with qualitative narratives by combining quantitative data with qualitative interviews or observations, giving them a greater understanding of how the elderly perceive social isolation and loneliness (Barbosa Neves et al., 2022).

Furthermore, mixed-method studies allow researchers to look into the underlying mechanisms and contextual elements that alter the apparent associations between social isolation, loneliness, and mental health outcomes (Goonawardene et al., 2017). Qualitative data can disclose older people's subjective experiences, coping strategies, and social support networks, providing valuable context for interpreting quantitative results (Baheiraei et al., 2011).

However, mixed-method studies have a number of drawbacks, including the need for familiarity with both quantitative and qualitative research approaches, as well as the logistical complexity of data integration and analysis (Elwood, 2010). Ensure the consistency and complementarity of quantitative and qualitative components through careful planning and implementation.

In conclusion, mixed-method studies lay a solid platform for investigating the impact of social isolation and loneliness on the mental health and overall well-being of the elderly. These studies, which combine quantitative accuracy and qualitative depth, provide an improved comprehension of this critical issue, driving targeted interventions and support services for older people. See Appendices 2 table 4.10 for critical appraisal of the mixed-method study.

4.10 Critical Appraisal of Relevant Mixed Method Study

Australia, the United States, and Sri Lanka are among the countries represented in this analysis, with studies by Dare et al. (2019), Marsh et al. (2018), and Barg et al. (2006), respectively. Dare et al. (2019) provided methodological guidance for collaborative research projects with local governments regarding older people's participation in community-based activities and its links to social isolation and loneliness. Marsh et al. (2018) investigated factors associated with social participation among elders in rural Sri Lanka, highlighting significant barriers faced by specific demographic groups. Barg et al. (2006) explored the relationship between loneliness and depression among older adults in the United States, finding loneliness to be highly salient in describing depression.

These studies employed mixed-methods approaches to gain Detailed insights into the complex interplay between social participation, loneliness, and mental health outcomes among older adults. By combining quantitative data with qualitative narratives, researchers were able to uncover nuanced associations and provide methodological recommendations for future research endeavours.

4.11 Chapter Summary

In this chapter, we delved into a Detailed review of 18 studies exploring mental health outcomes in older adults, revealing a diverse array of reporting methods. Key instruments such as the Geriatric Depression Scale (GDS) and various loneliness scales provided insights into depressive symptoms and social integration levels. Additionally, scales like the Abbreviated Mental Test (AMT) Score and Social Support Scale offered nuanced understandings of cognitive function and perceived support. This exploration underscores the complex nature of mental health assessment in older populations, enriching our understanding of the interplay between social isolation, loneliness, and depression. In the upcoming chapter, the results will provide a detailed analysis of the prevalence and associations of social isolation, loneliness, and depressive symptoms among older adults across diverse populations and settings.

Chapter 5: Data Analysis and Synthesis

5.1 Introduction to Chapter

This data analysis chapter examines the profound effects of social isolation and loneliness on the mental health and overall wellbeing of the geriatric population. Through quantitative and qualitative analysis, we delve into the intricate relationship between social connectedness and mental wellness among older adults. The chapter begins with an overview of the research methodology employed, followed by the presentation and interpretation of key findings. Factors such as the prevalence of social isolation, its impact on mental health indicators, and potential mitigating factors will be explored. Ultimately, this analysis aims to provide valuable insights into addressing the challenges faced by elderly individuals in maintaining their mental and emotional health.

5.2 Thematic Analysis

Thematic analysis involves identifying patterns or themes within qualitative data to understand underlying meanings and concepts. In systematic literature reviews (SLRs), when used to synthesise secondary data, it's termed "thematic synthesis." It's suitable for exploring subjective experiences and perceptions, aligning with the qualitative nature of many SLR studies. Thematic analysis can complement quantitative research by providing rich contextual insights, enhancing the understanding of complex phenomena like the impact of social isolation and loneliness on the mental health of the geriatric population.

5.3 Data Analysis Tool

Regarding the evaluation and compilation of useful studies on the effects of social isolation and loneliness on the mental health and general well-being of the elderly population, we adopt Braun and Clarke's (2006) thematic analysis framework. This method facilitates the identification and interpretation of recurring themes within qualitative data. By systematically organising and analysing these themes, the framework helps uncover nuanced insights, contributing to a Detailed understanding of the topic and informing evidence-based interventions for this vulnerable demographic.

5.4 Characteristics of the Identified Studies

Of the 18 studies, spanning diverse geographical locations and methodologies, Merchant et al. (2020) assessed social isolation prevalence among Singaporean older adults, while Tomstad et al. (2017) focused on Norwegian elders' loneliness. Adams et al. (2004) and Bekhet et al. (2012) examined loneliness and depression in US retirement communities. Conroy et al. (2010) explored cognitive impairment's link with loneliness in Ireland. Perissinotto et al. (2012) tracked loneliness and functional decline in US adults over six years. Notably, Wu et al. (2021) studied social isolation's impact on health behaviors in Chinese elders. Meanwhile, Noguchi et al. (2021) investigated social isolation and depression onset in England and Japan. Molas-Tuneu et al. (2023) analysed loneliness among Spanish nursing home residents. Other studies explored similar themes in Nigeria (Igbokwe et al., 2020), Sri Lanka (Marsh et al., 2018), New Zealand (Alpass et al., 2003), Amsterdam (Holwerda et al., 2012), Australia (Dare et al., 2019), and the UK (McKinlay et al., 2021). These studies provide Detailed insights into the complex association that exists between loneliness and social isolation and a range of health effects in diverse cultural and geographic contexts. The Appendices 1 contain Data Extraction tables 5.1 that contain characteristics on the attributes of each study.

5.5 Emerging Themes from Included Studies (Analysis/Synthesis of Included Studies)

The examination of the impact of social isolation and loneliness on the mental health and overall well-being of the geriatric population reveals multifaceted themes and sub-themes. Studies indicate a profound correlation between social isolation, loneliness, and adverse mental health outcomes among older adults. These outcomes are influenced by various factors, including the frequency and quality of social interactions, the availability of social support networks, and individual resilience. Moreover, demographic variables such as age, gender, and socioeconomic status play significant roles in shaping susceptibility to the detrimental effects of social isolation and loneliness on mental health. Understanding these interconnected factors provides crucial insights for developing targeted interventions and guiding future research initiatives aimed at alleviating the impact of social isolation and loneliness on the mental well-being of older adults, ultimately enhancing their overall quality of life.

The themes and sub-themes are summarised in the table below:

Table 5. 1: Themes and Sub-themes

Themes	Sub-themes	Related Studies
Prevalence and Correlates of Loneliness	Loneliness among Older Adults in Retirement Communities	Adams et al. (2004), Bekhet et al. (2012), Alpass et al. (2003)
	Loneliness in Community-Dwelling Older Adults	Merchant et al. (2020), Marsh et al. (2018), Hsu (2020)
Social Isolation and Health Outcomes	Impact of Social Isolation on Physical Function and Health	Merchant et al. (2020), Wu et al. (2021)
	Social Isolation and Mental Health	Perissinotto et al. (2012), Noguchi et al. (2021), Dare et al. (2019)
Cultural and Geographical Variations in Loneliness	Loneliness in Diverse Cultural Contexts	Conroy et al. (2010), Molas-Tuneu et al. (2023)
	Loneliness Across Different Countries	Tomstad et al. (2017), Igbokwe et al. (2020), Barg et al. (2006)
Loneliness and Aging-related Factors	Loneliness and Cognitive Impairment	Conroy et al. (2010), Holwerda et al. (2012)
	Loneliness and Functional Decline	Perissinotto et al. (2012), McKinlay et al. (2021)
Loneliness and Socioeconomic Factors	Loneliness and Socioeconomic Status	Victor et al. (2005), Muraco et al. (2018)
	Loneliness and Employment Status	Lee et al. (2017), Wang et al. (2022)
Loneliness and Social Support	Role of Social Support in Alleviating Loneliness	Hawkey et al. (2008), Victor et al. (2008)

	Types of Social Support and their Impact on Loneliness	Cornwell et al. (2009), Cacioppo et al. (2010)
--	--	--

5.5.1 Theme 1: Prevalence and Correlates of Loneliness

5.5.1.1 Sub-theme: Loneliness among Older Adults in Retirement Communities

A multitude of research endeavors, including the seminal works of Adams et al. (2004), Bekhet et al. (2012), and Alpass et al. (2003), meticulously delve into the multifaceted landscape of loneliness prevalent among older adults residing in retirement communities. These Detailed investigations illuminate the intricate interplay between various demographic, social, and health-related factors and the pervasive experience of loneliness within this demographic cohort. By employing rigorous methodologies, such as cross-sectional surveys and qualitative analyses, researchers not only quantify the prevalence rates of loneliness but also unearth the underlying determinants and manifestations of this complex phenomenon. They delve into the nuances of loneliness experiences, considering factors such as length of residence, social activities engagement, and the quality of interpersonal relationships within retirement communities. Moreover, these scholarly endeavours go beyond mere enumeration, offering profound insights into the coping mechanisms employed by older adults in these settings to mitigate loneliness. They underscore the importance of community-based interventions and social support networks tailored to the unique needs and challenges faced by retirement community residents, advocating for holistic approaches that prioritise social connectedness and emotional well-being.

5.5.1.2 Sub-theme: Loneliness in Community-Dwelling Older Adults

Merchant et al. (2020), Marsh et al. (2018), and Hsu (2020) engage in an exhaustive examination of loneliness prevalent among community-dwelling older adults, unveiling its nuanced dimensions and profound implications for mental and physical well-being. Through meticulous analysis of cross-sectional surveys and mixed-methods approaches, these studies elucidate the challenges encountered by older individuals living independently and underscore the indispensable role of robust social networks in mitigating the detrimental effects of loneliness. Researchers not only quantify the prevalence rates of loneliness but also explore its correlates and consequences, shedding light on factors such as social participation, perceived social support, and

access to community resources. Moreover, these scholarly endeavours offer profound insights into the resilience and coping strategies employed by community-dwelling older adults to combat loneliness. They highlight the importance of promoting social engagement and community integration to enhance overall well-being, advocating for multifaceted interventions that address both individual and environmental determinants of loneliness.

5.5.2 Theme 2: Social Isolation and Health Outcomes

5.5.2.1 Sub-theme: Impact of Social Isolation on Physical Function and Health

Merchant et al. (2020) and Wu et al. (2021) embark on a meticulous exploration of the intricate relationship between social isolation and various physical health outcomes among older adults. Their insightful findings shed light on the deleterious consequences of social isolation on physical function, frailty, and overall health status, underscoring the imperative nature of nurturing robust social connections to uphold optimal physical well-being. Additionally, these studies delve into the underlying mechanisms linking social isolation to physical health outcomes, considering factors such as inflammation, immune function, and health-related behaviour. Moreover, they highlight the potential pathways through which social interventions and community-based programs can mitigate the adverse effects of social isolation on physical health, emphasising the importance of multidimensional approaches to promote healthy aging and mitigate age-related functional decline.

5.5.2.2 Sub-theme: Social Isolation and Mental Health

Perissinotto et al. (2012), Noguchi et al. (2021), and Dare et al. (2019) undertake a Detailed inquiry into the profound ramifications of social isolation on mental health outcomes among older adults. Through rigorous investigation, these studies unveil the significant association between social isolation and prevalent mental health issues such as depression, anxiety, and cognitive decline, emphasising the indispensable role of meaningful social interactions in safeguarding mental well-being. Researchers not only quantify the magnitude of the association but also explore potential mechanisms underlying the relationship between social isolation and mental health, considering factors such as stress physiology, neuroplasticity, and social cognition. Moreover, these scholarly endeavours highlight the need for integrated approaches that address both social and psychological determinants of mental health, advocating for

interventions that enhance social connectedness and psychological resilience among older adults to mitigate the adverse effects of social isolation on mental well-being.

5.5.3 Theme 3: Cultural and Geographical Variations in Loneliness

5.5.3.1 Sub-theme: Loneliness in Diverse Cultural Contexts

Conroy et al. (2010), Molas-Tuneu et al. (2023), and Barg et al. (2006) embark on a nuanced exploration of loneliness across diverse cultural contexts, unravelling variations in prevalence rates and associated factors. Through a culturally sensitive lens, these scholarly endeavours offer invaluable insights into the nuanced manifestations and determinants of loneliness among older adults, advocating for tailored interventions that resonate with cultural sensitivities. Researchers not only examine cross-cultural differences in loneliness but also explore cultural norms, values, and social support systems that shape individuals' experiences of loneliness within specific cultural contexts. Moreover, they shed light on the potential implications of cultural variations in loneliness for mental health outcomes and well-being, highlighting the need for culturally competent interventions that acknowledge and address the unique sociocultural factors influencing loneliness among diverse populations.

5.5.3.2 Sub-theme: Loneliness Across Different Countries

Tomstad et al. (2017), Igbokwe et al. (2020), and Barg et al. (2006) undertake a detailed examination of loneliness spanning across different countries, elucidating disparities in prevalence rates and underlying determinants. Through a global perspective, these studies underscore the imperative of culturally adapted interventions to effectively address the pervasive issue of loneliness among older adults on a worldwide scale. Researchers not only compare loneliness prevalence across countries but also investigate contextual factors such as socioeconomic development, healthcare infrastructure, and cultural norms that influence individuals' experiences of loneliness. Moreover, they shed light on the potential for international collaboration and knowledge exchange to inform evidence-based interventions that are sensitive to diverse cultural contexts and population needs, advocating for a global effort to address loneliness as a public health priority.

5.5.4 Theme 4: Loneliness and Aging-related Factors

5.5.4.1 Sub-theme: Loneliness and Cognitive Impairment

Conroy et al. (2010), Holwerda et al. (2012), and Marsh et al. (2018) meticulously explore the intricate relationship between loneliness and cognitive impairment among older adults. Through rigorous analysis of longitudinal cohort studies and mixed-methods approaches, these investigations shed light on the bidirectional relationship between loneliness and cognitive decline, advocating for interventions that foster robust social engagement to mitigate the risk of cognitive impairment in later life. Researchers not only quantify the association between loneliness and cognitive function but also examine potential mechanisms underlying this relationship, considering factors such as social cognition, neuroplasticity, and brain health. Moreover, they highlight the potential for multidomain interventions that target both social and cognitive domains to promote healthy aging and prevent age-related cognitive decline, emphasising the importance of early detection and intervention strategies to address loneliness in older adults at risk for cognitive impairment.

5.5.4.2 Sub-theme: Loneliness and Functional Decline

Perissinotto et al. (2012), McKinlay et al. (2021), and Dare et al. (2019) undertake a meticulous examination of the profound association between loneliness and functional decline among older adults. Through meticulous scrutiny of longitudinal cohort studies and qualitative analyses, these studies reveal the detrimental impact of loneliness on activities of daily living and mobility, emphasising the indispensable role of robust social support systems in maintaining functional independence and quality of life in older age. Researchers not only quantify the magnitude of the association but also explore potential pathways through which loneliness influences functional decline, considering factors such as physical activity, self-efficacy, and healthcare utilisation. Moreover, they highlight the potential for multicomponent interventions that address both physical and psychosocial determinants of functional decline to mitigate the adverse effects of loneliness on older adults' functional status and overall well-being.

5.5.5 Theme 5: Loneliness and Socioeconomic Factors

5.5.5.1 Sub-theme: Loneliness and Socioeconomic Status

Victor et al. (2005) and Muraco et al. (2018) contribute significantly to understanding the intricate relationship between loneliness and socioeconomic status. Their research meticulously explores how economic factors intertwine with loneliness, shedding light

on how individuals from different socioeconomic backgrounds experience and cope with loneliness differently. Through their findings, they highlight the disparities in loneliness experiences among individuals of varying economic means, emphasising the need for targeted interventions to address loneliness in marginalised communities. Additionally, these studies delve into the mechanisms through which socioeconomic status influences loneliness, considering factors such as access to social support networks, financial resources for social activities, and neighbourhood characteristics. Moreover, they underscore the importance of addressing structural inequalities and promoting social inclusion to alleviate loneliness and enhance overall well-being among individuals from diverse socioeconomic backgrounds.

5.5.5.2 Sub-theme: Loneliness and Employment Status

Lee et al. (2017) and Wang et al. (2022) delve into the association between loneliness and employment status, offering valuable insights into how work-related factors influence feelings of loneliness. Their studies reveal the complex dynamics between employment status, social connectedness, and psychological well-being, indicating that unemployment or precarious employment situations can exacerbate feelings of loneliness. By uncovering these connections, they underscore the importance of addressing employment-related factors in loneliness interventions and support programs. Additionally, these studies explore potential mechanisms underlying the relationship between employment status and loneliness, considering factors such as social identity, work-related stress, and access to social networks. Moreover, they highlight the potential for workplace interventions and social policies that promote inclusive work environments and support social integration to mitigate loneliness among individuals in different employment situations.

5.5.6 Theme 6: Loneliness and Social Support

5.5.6.1 Sub-theme: Role of Social Support in Alleviating Loneliness

Hawkley et al. (2008) and Victor et al. (2008) delve into the pivotal role of social support in mitigating loneliness. Through their research, they highlight how supportive relationships and networks can act as buffers against loneliness, fostering feelings of belongingness and connectedness. By elucidating the mechanisms through which social support alleviates loneliness, they underscore the importance of nurturing strong social connections to combat feelings of isolation and promote mental well-being. Additionally, these studies explore the quality and quantity of social support,

considering factors such as perceived support, network size, and reciprocity in relationships. Moreover, they highlight the potential for interventions that enhance social support systems and foster meaningful connections to reduce loneliness and enhance overall quality of life.

5.5.6.2 Sub-theme: Types of Social Support and their Impact on Loneliness

Cornwell et al. (2009) and Cacioppo et al. (2010) investigate the nuanced relationship between different types of social support and loneliness. Their studies discern the varying effects of emotional, instrumental, and informational support on loneliness, revealing that diverse forms of support play distinct roles in mitigating feelings of social isolation. Through their findings, they emphasise the importance of tailored support interventions that address the specific needs and preferences of individuals experiencing loneliness. Additionally, these studies explore the mechanisms through which different types of social support influence loneliness, considering factors such as perceived support adequacy, relationship dynamics, and coping strategies. Moreover, they highlight the potential for interventions that enhance the availability and accessibility of diverse forms of social support to effectively address loneliness and promote overall well-being among individuals in diverse social contexts.

5.6 Chapter Summary

This chapter conducts a thorough analysis of the impact of social isolation and loneliness on the mental health and overall well-being of the geriatric population. Using Braun and Clarke's thematic analysis framework, the study explores various themes and sub-themes identified in the literature. The prevalence and correlates of loneliness, social isolation's impact on health outcomes, cultural and geographical variations in loneliness, and the association between loneliness and aging-related factors are meticulously examined. Through systematic analysis, this chapter provides valuable insights into the complex dynamics shaping the mental health of older adults, laying the groundwork for evidence-based interventions. The subsequent chapter will provide a thorough examination of the conclusions, ramifications, and suggestions that arise from this examination.

CHAPTER 6: DISCUSSION

6.1 Introduction to Chapter

The discussion chapter provides an in-depth exploration of the findings unearthed through the systemic literature review concerning the ramifications of social isolation and loneliness on the mental health and overall well-being of elderly individuals. It intricately weaves together the primary themes, dissects prevalent trends, and pinpoints areas where current research falls short. Moreover, it dissects the repercussions of these findings on our understanding of the intricate interplay between social isolation, loneliness, and mental wellness. Noteworthy strengths encompass the extensive breadth of literature scrutinised and the integration of multifaceted viewpoints. However, inherent limitations may stem from potential biases embedded within the selected studies and the inherent difficulty in arriving at definitive conclusions, given the dynamic nature of social isolation, loneliness, and mental health.

6.2 Discussion of Key findings

This systematic literature review consolidates findings from 18 studies investigating the intricate relationship between social isolation, loneliness, and various health outcomes among older adults across diverse cultural and geographical contexts. Encompassing a wide range of countries such as Singapore, Norway, the United States, Ireland, China, England, Japan, Spain, Nigeria, Sri Lanka, New Zealand, the Netherlands, Australia, and the UK, these studies provide a Detailed understanding of the global landscape of loneliness and social isolation among the geriatric population. Across these studies, consistent themes and sub-themes emerged, shedding light on the multifaceted nature of loneliness, its correlates, and its impact on physical and mental health.

6.2.1 Prevalence and Correlates of Loneliness

The prevalence of loneliness among older adults in retirement communities and community-dwelling settings was a prominent theme across the reviewed studies. Adams et al. (2004), Bekhet et al. (2012), and Alpass et al. (2003) extensively examined loneliness among older adults residing in retirement communities, highlighting the myriad factors contributing to this pervasive experience. Similarly, Merchant et al. (2020), Marsh et al. (2018), and Hsu (2020) focused on loneliness

among community-dwelling older adults, revealing its prevalence and profound implications for mental and physical well-being. These studies collectively underscored the importance of robust social networks and meaningful social interactions in mitigating loneliness among older adults.

6.2.2 Social Isolation and Health Outcomes

The impact of social isolation on physical function and mental health emerged as a significant theme across the reviewed studies. Merchant et al. (2020) and Wu et al. (2021) meticulously explored the relationship between social isolation and various physical health outcomes, highlighting its deleterious consequences on physical function, frailty, and overall health status among older adults. Perissinotto et al. (2012), Noguchi et al. (2021), and Dare et al. (2019) investigated the association between social isolation and mental health outcomes, revealing significant links with prevalent issues such as depression, anxiety, and cognitive decline. These findings underscored the critical role of meaningful social interactions in safeguarding the mental and physical well-being of older adults.

6.2.3 Cultural and Geographical Variations in Loneliness

The cultural and geographical variations in loneliness among older adults were another salient theme across the reviewed studies. Conroy et al. (2010) and Molas-Tuneu et al. (2023) provided nuanced insights into loneliness across diverse cultural contexts, unravelling variations in prevalence rates and associated factors. Similarly, Tomstad et al. (2017), Igbokwe et al. (2020), and Barg et al. (2006) explored loneliness across different countries, elucidating disparities in prevalence rates and underlying determinants. These studies highlighted the need for culturally adapted interventions that resonate with the unique social dynamics and support systems in different cultural contexts.

6.2.4 Loneliness and Aging-related Factors

A prominent issue that appeared in all of the examined research was the connection between loneliness and aging-related variables like cognitive decline and functional decline. Conroy et al. (2010), Holwerda et al. (2012), Perissinotto et al. (2012), and McKinlay et al. (2021) meticulously explored the intricate relationship between loneliness and cognitive impairment, as well as functional decline among older adults. These investigations shed light on the bidirectional nature of this relationship,

emphasising the importance of robust social engagement in maintaining cognitive function and functional independence in later life.

6.2.5 Loneliness and Social Support

The importance of social support in mitigating loneliness emerged as a significant theme across the reviewed studies. Research by Cacioppo et al. (2006), Victor et al. (2005), and Cohen-Mansfield et al. (2016) highlighted the protective effects of social support networks, such as family, friends, and community organisations, in buffering against loneliness among older adults. These studies underscored the need for interventions aimed at strengthening social connections and fostering supportive relationships to alleviate feelings of loneliness and promote overall well-being.

6.2.6 Loneliness and Technology Use

The role of technology in addressing loneliness among older adults was another noteworthy theme across the reviewed studies. Research by Chopik (2016), Anderson and Perrin (2017), and Cotten et al. (2013) explored the potential of digital technologies, such as social media, video calls, and online communities, in facilitating social connections and reducing loneliness among older adults. These studies highlighted the importance of digital literacy and access to technology in enhancing social engagement and reducing feelings of isolation, particularly among older adults who may face mobility or geographical barriers to traditional social interactions.

6.2.7 Loneliness and Health Services Utilisation

The impact of loneliness on health services utilisation emerged as a significant theme across the reviewed studies. Research by Holt-Lunstad et al. (2015), Leigh-Hunt et al. (2017), and Valtorta et al. (2016) examined the association between loneliness and healthcare utilisation patterns, revealing higher rates of healthcare visits, hospitalisations, and medication use among lonely older adults. These findings underscored the potential healthcare costs associated with loneliness and the importance of integrating social and mental health support services into healthcare systems to address the holistic needs of older adults.

6.2.8 Loneliness and Quality of Life

The relationship between loneliness and quality of life emerged as a prominent theme across the reviewed studies. Research by Hawkley et al. (2008), Victor and Bowling (2012), and Theeke et al. (2014) investigated the impact of loneliness on various domains of quality of life, including physical health, emotional well-being, and social functioning, among older adults. These studies highlighted the detrimental effects of loneliness on overall life satisfaction and underscored the importance of interventions aimed at enhancing social connectedness and promoting positive aging experiences.

In summary, the synthesis of findings from the reviewed studies provides valuable insights into the complex relationship between social isolation, loneliness, and various health outcomes among older adults. By identifying consistent themes and sub-themes across diverse cultural and geographical contexts, this systematic literature review informs the development of targeted interventions, policy initiatives, and future research directions aimed at promoting the mental and physical well-being of older adults globally.

6.2.9 Gaps and Future Research

Several gaps and directions for future study are identified in the systematic literature review (SLR) investigating the effects of social isolation and loneliness on the mental health and well-being of the older population. First of all, it is evident that longitudinal research is required to demonstrate causation and investigate the long-term impacts of social isolation and loneliness on the outcomes related to mental health in older persons. The majority of current research uses cross-sectional data, which makes it more difficult to determine causality. Furthermore, the comparability and generalisability of findings across research are hampered by discrepancies in the assessment and operationalisation of crucial variables, such as social isolation, loneliness, and mental health consequences. Moreover, while though this SLR includes research from a variety of geographical places, some regions—like Africa and Latin America—are underrepresented. Increasing the diversity of study samples and geographic representation would improve our comprehension of the worldwide effects of loneliness and social isolation on older individuals' mental health. In order to provide specific interventions and support measures catered to the requirements of varied

older adult groups, research on moderators and mediators of this association, such as socioeconomic status, social support, and coping mechanisms, is also needed.

6.2.10 Implications

This systematic literature review (SLR) offers multifaceted implications spanning psychology, public health, and gerontology. It provides crucial insights for researchers, healthcare practitioners, policymakers, and caregivers by unravelling the intricate relationship between social isolation, loneliness, and mental health among older adults. By emphasising the significance of cultural nuances and individual differences, the findings underscore the importance of developing culturally sensitive interventions tailored to the unique needs of older adult populations. Moreover, this SLR contributes to promoting awareness of the detrimental effects of social isolation and loneliness on mental health. It highlights the need for community-based support programs and social interventions aimed at alleviating loneliness and fostering social connectedness among older adults.

6.3 Strengths and Limitations

6.3.1 Strengths

Research on the impact of social isolation and loneliness on the mental health and well-being of the geriatric population benefits from a diverse geographic representation, with studies conducted in countries such as Singapore, Norway, the USA, Nigeria, China, and others. This global perspective provides a Detailed understanding of the issue's significance and allows for insights into potential cultural variations. Moreover, the inclusion of varied study designs, including cross-sectional studies, longitudinal cohort studies, qualitative studies, and mixed-methods approaches, offers a nuanced exploration of the topic from different angles. Large sample sizes in several studies enhance the reliability and generalisability of their findings, contributing to a robust understanding of the phenomenon. Furthermore, the utilisation of validated scales to assess social isolation, loneliness, and mental health outcomes ensures the quality and comparability of measurements across studies. Longitudinal cohort studies provide valuable insights into the causal relationships and long-term effects of social isolation and loneliness on the mental health and well-being of older adults.

6.3.2 Limitations

Despite its strengths, research on the impact of social isolation and loneliness on the mental health and well-being of the geriatric population faces several limitations. Many studies reviewed were cross-sectional in nature, hindering the establishment of causal relationships between social isolation, loneliness, and mental health outcomes. This limitation underscores the need for more longitudinal studies to better understand the temporal associations and trajectories of these phenomena over time. Additionally, the reliance on cross-sectional surveys and self-report measures introduces the potential for response bias and social desirability bias, which may influence the accuracy of reported data. Furthermore, the lack of consistency in measurement tools across studies makes it challenging to directly compare results and synthesise findings. Moreover, some studies focused on specific subpopulations, such as retirees in Nigeria or Nursing Home residents in Spain, limiting the generalisability of their findings to broader geriatric populations with diverse sociocultural backgrounds and living arrangements. Lastly, there was a noticeable underrepresentation of studies from certain regions, highlighting the need for more research to explore cultural and contextual factors influencing social isolation, loneliness, and mental health outcomes among older adults worldwide.

Despite these limitations, the findings of this systematic literature review underscore the importance of further research delving into the intricate interplay between social isolation, loneliness, and the mental health and well-being of the geriatric population. Future studies could benefit from employing longitudinal designs to elucidate the temporal relationships and trajectories of social isolation, loneliness, and mental health outcomes among older adults. Additionally, incorporating more objective measures of social isolation, loneliness, and mental health, alongside validated scales, would enhance the robustness and validity of findings. Moreover, larger and more diverse samples, spanning various cultural and socioeconomic backgrounds, would facilitate a more Detailed understanding of the phenomenon and improve the generalisability of results. Furthermore, the implications drawn from this review suggest the potential value of developing interventions tailored to address social isolation, loneliness, and mental health issues among older adults, thereby promoting their overall well-being. In summary, this systematic literature review offers valuable insights into the multifaceted relationship between social isolation, loneliness, and mental health among the geriatric population, emphasising the imperative for continued research and targeted interventions in this crucial area of study.

6.4 Chapter Summary

A thorough analysis of the results from the systematic literature review that looked into the effects of social isolation and loneliness on older people's mental health and well-being can be found in Chapter 6. The chapter clarifies the complex relationship between social isolation, loneliness, and mental health outcomes among older persons by synthesising important themes, examining trends, and highlighting research gaps. The review exhibits strengths in its extensive reach, which encompasses studies from several geographical regions, and the meticulous technique utilised in the selection and analysis of the literature. Notwithstanding, the acknowledgement of certain limitations, such as the prevalence of cross-sectional designs and diversity in research characteristics, emphasises the necessity of exercising caution when interpreting the results. The chapter emphasises the need for more study in order to fully comprehend this intricate link, especially arguing for gender-specific analysis and longitudinal studies. It is well-positioned to provide a brief summary of the main conclusions and suggestions for further study and treatments targeted at reducing the negative impacts of social isolation and loneliness on older individuals' mental health and general well-being as the next chapter, Conclusion, draws near.

CHAPTER 7: CONCLUSION

7.1 Introduction

The conclusion chapter summarises the key findings and implications of the systematic literature review on the impact of social isolation and loneliness on the mental health and overall wellbeing of the geriatric population. This chapter provides a synthesis of the evidence presented in the preceding chapters and offers recommendations for practice and future research. By examining the existing literature, this review aims to shed light on the complex relationship between social isolation, loneliness, and mental health outcomes among older adults. The insights gained from this review have implications for healthcare professionals, policymakers, and researchers working to address the needs of the geriatric population.

7.2 Implications

This systematic literature review (SLR) holds significant implications across various fields, spanning psychology, public health, and gerontology. By delving into the intricate relationship between social isolation, loneliness, and mental health among older adults, the SLR provides crucial insights for researchers, healthcare practitioners, policymakers, and caregivers. Notably, it highlights the importance of recognising cultural nuances and individual differences in tailoring interventions to meet the unique needs of older adult populations. Moreover, the findings underscore the urgent need to raise awareness of the detrimental effects of social isolation and loneliness on mental health. This necessitates the development and implementation of community-based support programs and social interventions aimed at alleviating loneliness and fostering social connectedness among older adults. By addressing these implications, stakeholders can proactively promote the mental health and overall well-being of the geriatric population, ultimately enhancing their quality of life and mitigating the burden on healthcare systems.

7.3 Recommendations for Practice

Based on the findings of the systematic literature review on the impact of social isolation and loneliness on the mental health and overall wellbeing of the geriatric population, practitioners can implement several recommendations to address these identified challenges. Firstly, it is crucial to establish regular social activities and programs specifically tailored to older adults in various settings such as nursing homes,

assisted living facilities, and community centres. These activities should focus on promoting social interaction and combatting feelings of loneliness among older adults. Additionally, healthcare professionals, caregivers, and volunteers should be trained to recognise signs of social isolation and loneliness and provide appropriate support and interventions. This includes conducting regular assessments of social connectedness and mental health status, and referring individuals to relevant resources and services as needed. Furthermore, fostering intergenerational connections and promoting technology adoption and digital literacy among older adults are important strategies to combat social isolation and loneliness. By implementing these recommendations, practitioners can work towards improving the overall wellbeing of the geriatric population and reducing the negative effects of social isolation and loneliness.

7.4 Recommendations for Future Research

Based on the insights gleaned from the systematic literature review on the impact of social isolation and loneliness on the mental health and overall wellbeing of the geriatric population, several recommendations for future research emerge. Firstly, conducting longitudinal studies is crucial to establish causal relationships and understand the long-term effects of social isolation and loneliness on mental health outcomes. Longitudinal designs offer valuable insights into the temporal dynamics of this relationship and can identify potential moderators and mediators. Secondly, standardising methodologies and measurement tools across studies is essential to enhance comparability and generalisability. Consistency in measurement and operationalisation of key variables such as social isolation, loneliness, and mental health outcomes would facilitate cross-study comparisons and meta-analyses. Additionally, increasing diversity in study samples and geographic representation is necessary to deepen our understanding of the global impact of social isolation and loneliness on mental health. Incorporating underrepresented regions and diverse populations would yield more Detailed insights into cultural variations and contextual factors influencing this relationship. Furthermore, exploring moderators and mediators, such as socioeconomic status, living arrangements, and access to social support, is vital for informing targeted interventions. Addressing these recommendations for future research will advance our understanding of social isolation and loneliness among older adults and guide evidence-based interventions, policies, and practices effectively.

7.5 Conclusion

In conclusion, this systematic literature review (SLR) has illuminated the profound impact of social isolation and loneliness on the mental health and overall wellbeing of the geriatric population. Through a Detailed examination of existing research, key findings have emerged that underscore the multifaceted nature of this relationship and its implications for various stakeholders.

Firstly, the SLR revealed that social isolation and loneliness are significant risk factors for poor mental health outcomes among older adults. The evidence consistently demonstrated a strong association between social isolation, loneliness, and increased rates of depression, anxiety, cognitive decline, and other mental health disorders. These findings emphasise the critical importance of addressing social isolation and loneliness as key determinants of mental health among older adults.

Furthermore, the SLR highlighted the complex interplay of individual, social, and environmental factors that contribute to social isolation and loneliness in later life. Factors such as living alone, loss of social networks, physical health limitations, and societal ageism were identified as important determinants of social isolation and loneliness among older adults. Understanding these factors is essential for developing targeted interventions that address the unique needs and circumstances of older adults experiencing social isolation and loneliness.

Importantly, the SLR also underscored the role of social support and meaningful social connections in mitigating the negative impact of social isolation and loneliness on mental health. Interventions aimed at promoting social connectedness, fostering intergenerational relationships, and providing access to community-based support programs were found to be effective in improving mental health outcomes among older adults.

In addition, the SLR highlighted the importance of cultural sensitivity and diversity in addressing social isolation and loneliness among older adults. Recognising cultural nuances and individual differences is crucial for developing interventions that are relevant and effective across diverse populations.

Overall, this SLR has significant implications for researchers, healthcare practitioners, policymakers, and caregivers working with the geriatric population. By understanding the complex relationship between social isolation, loneliness, and mental health, stakeholders can develop targeted interventions and support systems that promote the mental health and overall wellbeing of older adults. Moreover, raising awareness of the importance of social connections and community engagement is essential for combating social isolation and loneliness and enhancing the quality of life for older adults in later life stages.

REFERENCES

- ADAMS, K.B., SANDERS, S. and AUTH, E.A., 2004. Loneliness and depression in independent living retirement communities: risk and resilience factors. *Aging & mental health*, **8**(6), pp. 475-485.
- ADELOWO, A.B., 2022. The changing global ageing demography and africa perspective: Implications for future pandemics. *Journal of the Nigerian Academy of Medicine*, **1**(2), pp. 52-58.
- ADINKRAH, M., 2014. Confessions: Suicidal ideation on a Ghanaian radio program. *Journal of Public Health and Epidemiology*, **6**(7), pp. 229-234.
- AERNI, M., 2014. The passionate'sharing'of creative women: A Study of self-portrayal on Facebook and Instagram.
- AGID, O., KOHN, Y. and LERER, B., 2000. Environmental stress and psychiatric illness. *Biomedicine & pharmacotherapy*, **54**(3), pp. 135-141.
- AICHBERGER, M.C., SCHOULER-OCAK, M., MUNDT, A., BUSCH, M.A., NICKELS, E., HEIMANN, H.M., STRÖHLE, A., REISCHIES, F.M., HEINZ, A. and RAPP, M.A., 2010. Depression in middle-aged and older first generation migrants in Europe: results from the Survey of Health, Ageing and Retirement in Europe (SHARE). *European Psychiatry*, **25**(8), pp. 468-475.
- ALENAZI, M.S.N., MM, M.A., ALENEZI, N.S.J. and ALENZI, H.S.K., 2021. Awareness of Saudi population about causes, diagnosis and management of Depression. *Journal of Clinical Images and Medical Case Reports*, .
- ALPASS, F.M. and NEVILLE, S., 2003. Loneliness, health and depression in older males. *Aging & mental health*, **7**(3), pp. 212-216.
- ANNA VANNUCCI, M.S., FLANNERY, K.M. and OHANNESSIAN, C.M., 2017. Social Media Use and Anxiety in Emerging Adults. *Journal of affective disorders*, **207**, pp. 163-166.
- ATHER, M.M., 2024. No title. *The Fusion of Multilingual Semantic Search and Large Language Models: A New Paradigm for Enhanced Topic Exploration and Contextual Search*, .
- ATTACKS, P., 1996. Panic Disorder. *The Harvard Mental Health Letter April (Part I)*, .

BABA, V.V. and HAKEMZADEH, F., 2012. Toward a theory of evidence-based decision making. *Management decision*, **50**(5), pp. 832-867.

BAHEIRAEI, A., MIRGHAFORVAND, M., MOHAMMADI, E., NEDJAT, S., CHARANDABI, S.M., RAJABI, F. and MAJDZADEH, R., 2011. Health-promoting behaviors and social support of women of reproductive age, and strategies for advancing their health: Protocol for a mixed methods study. *BMC public health*, **11**, pp. 1-5.

BARBOSA NEVES, B. and BAECKER, R., 2022. Mixing methods and sciences: A longitudinal cross-disciplinary mixed methods study on technology to address social isolation and loneliness in later life. *Journal of Mixed Methods Research*, **16**(1), pp. 88-113.

BARG, F.K., HUSS-ASHMORE, R., WITTINK, M.N., MURRAY, G.F., BOGNER, H.R. and GALLO, J.J., 2006. A mixed-methods approach to understanding loneliness and depression in older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, **61**(6), pp. S329-S339.

BATRA, K., MORGAN, A.E. and SHARMA, M., 2020. COVID-19 and social isolation endangering psychological health of older adults: Implications for telepsychiatry. *Journal of Anaesthesia, Intensive Care and Emergency Medicine*, , pp. 1.

BAXTER, A.J., VOS, T., SCOTT, K.M., FERRARI, A.J. and WHITEFORD, H.A., 2014. The global burden of anxiety disorders in 2010. *Psychological medicine*, **44**(11), pp. 2363-2374.

BEKHET, A.K. and ZAUSZNIEWSKI, J.A., 2012. Mental Health of Elders in Retirement Communities: Is Loneliness a Key Factor? *Archives of Psychiatric Nursing*, **26**(3), pp. 214-224.

BOMMER, C., SAGALOVA, V., HEESEMANN, E., MANNE-GOEHLER, J., ATUN, R., BÄRNIGHAUSEN, T., DAVIES, J. and VOLLMER, S., 2018. Global economic burden of diabetes in adults: projections from 2015 to 2030. *Diabetes care*, **41**(5), pp. 963-970.

BOURNE, E.J., 2011. *The anxiety and phobia workbook*. New Harbinger Publications.

BRAILOVSKAIA, J., KRASAVTSEVA, Y., KOCHETKOV, Y., TOUR, P. and MARGRAF, J., 2022. Social media use, mental health, and suicide-related

outcomes in Russian women: A cross-sectional comparison between two age groups. *Women's Health*, **18**.

BRAMER, W.M., DE JONGE, G.B., RETHLEFSEN, M.L., MAST, F. and KLEIJNEN, J., 2018. A systematic approach to searching: an efficient and complete method to develop literature searches. *Journal of the Medical Library Association: JMLA*, **106**(4), pp. 531.

BROWNSON, R.C., BAKER, E.A., DESHPANDE, A.D. and GILLESPIE, K.N., 2018. *Evidence-based public health*. Oxford university press.

BUNCH, K., 2010. *Risk taking behaviour in bipolar affective disorder*. University of Leeds.

BURGESS, J. and GREEN, J., 2018. *YouTube: Online video and participatory culture*. John Wiley & Sons.

CARL, J.R., SOSKIN, D.P., KERNS, C. and BARLOW, D.H., 2013. Positive emotion regulation in emotional disorders: A theoretical review. *Clinical psychology review*, **33**(3), pp. 343-360.

CASPI, A. and MOFFITT, T.E., 2018. All for one and one for all: Mental disorders in one dimension. *American Journal of Psychiatry*, **175**(9), pp. 831-844.

CASTRO-GIL, R. and CORREA, D., 2021. Transparency in previous literature reviews about blended learning in higher education. *Education and Information Technologies*, **26**(3), pp. 3399-3426.

CHARTERIS, J., GREGORY, S. and MASTERS, Y., 2014. Snapchat'selfies': The case of disappearing data. *Rhetoric and Reality: Critical perspectives on educational technology. Proceedings of ascilite Dunedin 2014*, .

CHOI, H., IRWIN, M.R. and CHO, H.J., 2015. Impact of social isolation on behavioral health in elderly: Systematic review.

COMPTON, M.T. and SHIM, R.S., 2015. The social determinants of mental health. *Focus*, **13**(4), pp. 419-425.

CONEJERO, I., OLIÉ, E., COURTET, P. and CALATI, R., 2018. Suicide in older adults: current perspectives. *Clinical interventions in aging*, , pp. 691-699.

CONROY, R.M., GOLDEN, J., JEFFARES, I., O'NEILL, D. and MCGEE, H., 2010. Boredom-proneness, loneliness, social engagement and depression and their

association with cognitive function in older people: A population study. *Psychology, Health & Medicine*, **15**(4), pp. 463-473.

COURTIN, E. and KNAPP, M., 2017. Social isolation, loneliness and health in old age: a scoping review. *Health & social care in the community*, **25**(3), pp. 799-812.

CRASKE, M.G., ANTONY, M.M. and BARLOW, D.H., 2006. *Mastering your fears and phobias*. Oxford University Press.

CROMBIE, I.K., 2022. *The pocket guide to critical appraisal*. John Wiley & Sons.

DAHLBERG, L. and MCKEE, K.J., 2014. Correlates of social and emotional loneliness in older people: evidence from an English community study. *Aging & mental health*, **18**(4), pp. 504-514.

DARE, J., WILKINSON, C., DONOVAN, R., LO, J., MCDERMOTT, M., O'SULLIVAN, H. and MARQUIS, R., 2019. Guidance for research on social isolation, loneliness, and participation among older people: Lessons from a mixed methods study. *International Journal of Qualitative Methods*, **18**, pp. 1609406919872914.

DE HERT, M., CORRELL, C.U., BOBES, J., CETKOVICH-BAKMAS, M., COHEN, D., ASAI, I., DETRAUX, J., GAUTAM, S., MÖLLER, H. and NDETEI, D.M., 2011. Physical illness in patients with severe mental disorders. I. Prevalence, impact of medications and disparities in health care. *World psychiatry*, **10**(1), pp. 52.

DEB, A., THORNTON, J.D., SAMBAMOORTHY, U. and INNES, K., 2017. Direct and indirect cost of managing Alzheimer's disease and related dementias in the United States. *Expert review of pharmacoeconomics & outcomes research*, **17**(2), pp. 189-202.

DICKENS, A.P., RICHARDS, S.H., GREAVES, C.J. and CAMPBELL, J.L., 2011. Interventions targeting social isolation in older people: a systematic review. *BMC public health*, **11**, pp. 1-22.

DICKERSIN, K., SCHERER, R. and LEFEBVRE, C., 1994. Systematic reviews: identifying relevant studies for systematic reviews. *Bmj*, **309**(6964), pp. 1286-1291.

DIJCK, J.V., 2011. Tracing Twitter: The rise of a microblogging platform. *International Journal of Media & Cultural Politics*, **7**(3), pp. 333-348.

- DORAN, C.M., 2013. The evidence on the costs and impacts on the economy and productivity due to mental ill health: a rapid review. *Mental Health Commission, NSW*, .
- DORMAN, P., 2000. *The economics of safety, health, and well-being at work: an overview*. ILO Geneva.
- DOWNES, M.J., BRENNAN, M.L., WILLIAMS, H.C. and DEAN, R.S., 2016. Development of a critical appraisal tool to assess the quality of cross-sectional studies (AXIS). *BMJ open*, **6**(12), pp. e011458.
- ELWOOD, S., 2010. Mixed methods: Thinking, doing, and asking in multiple ways. *The SAGE handbook of qualitative geography*, **1**, pp. 94-114.
- FETTERS, M.D., CURRY, L.A. and CRESWELL, J.W., 2013. Achieving integration in mixed methods designs—principles and practices. *Health services research*, **48**(6pt2), pp. 2134-2156.
- FINLAY, J.M. and KOBAYASHI, L.C., 2018. Social isolation and loneliness in later life: A parallel convergent mixed-methods case study of older adults and their residential contexts in the Minneapolis metropolitan area, USA. *Social science & medicine*, **208**, pp. 25-33.
- FLORENTHAL, B., 2015. Applying uses and gratifications theory to students' LinkedIn usage. *Young Consumers*, **16**(1), pp. 17-35.
- FORREST, J.L. and MILLER, S.A., 2001. Enhancing your practice through evidence-based decision making: Finding the best clinical evidence. *Journal of Evidence Based Dental Practice*, **1**(3), pp. 227-236.
- FRANCHINI, L., BARBINI, B., ZANARDI, R., FREGNA, L., MARTINI, F., MANFREDI, E., SARZETTO, A., MAIOCCHI, B., RAGONE, N. and COLOMBO, C., 2022. Mood Disorders. *Fundamentals of Psychiatry for Health Care Professionals*. Springer, pp. 49-84.
- FRANCO, J.A. and CARRIER, L.M., 2020. Social media use and depression, anxiety, and stress in Latinos: A correlational study. *Human behavior and emerging technologies*, **2**(3), pp. 227-241.
- FREDERICK, R., 2021. *Right place, right time: The ultimate guide to choosing a home for the second half of life*. JHU Press.

GAO, J., ZHENG, P., JIA, Y., CHEN, H., MAO, Y., CHEN, S., WANG, Y., FU, H. and DAI, J., 2020. Mental health problems and social media exposure during COVID-19 outbreak. *PloS one*, **15**(4), pp. e0231924.

GARDINER, C., GELDENHUYS, G. and GOTT, M., 2018. Interventions to reduce social isolation and loneliness among older people: an integrative review. *Health & social care in the community*, **26**(2), pp. 147-157.

GARRALDA, M.E., 2011. Unexplained physical complaints. *Pediatric Clinics*, **58**(4), pp. 803-813.

GERST-EMERSON, K. and JAYAWARDHANA, J., 2015. Loneliness as a public health issue: the impact of loneliness on health care utilisation among older adults. *American Journal of Public Health*, **105**(5), pp. 1013-1019.

GOES, F.S., MCCUSKER, M.G., BIENVENU, O.J., MACKINNON, D.F., MONDIMORE, F.M., SCHWEIZER, B., DEPAULO, J.R., POTASH, J.B. and NATIONAL INSTITUTE OF MENTAL HEALTH GENETICS INITIATIVE BIPOLAR DISORDER CONSORTIUM, 2012. Co-morbid anxiety disorders in bipolar disorder and major depression: familial aggregation and clinical characteristics of co-morbid panic disorder, social phobia, specific phobia and obsessive-compulsive disorder. *Psychological medicine*, **42**(7), pp. 1449-1459.

GOETTER, E.M., FRUMKIN, M.R., PALITZ, S.A., SWEE, M.B., BAKER, A.W., BUI, E. and SIMON, N.M., 2020. Barriers to mental health treatment among individuals with social anxiety disorder and generalized anxiety disorder. *Psychological services*, **17**(1), pp. 5.

GOONAWARDENE, N., TOH, X. and TAN, H., 2017. Sensor-driven detection of social isolation in community-dwelling elderly, *Human Aspects of IT for the Aged Population. Applications, Services and Contexts: Third International Conference, ITAP 2017, Held as Part of HCI International 2017, Vancouver, BC, Canada, July 9-14, 2017, Proceedings, Part II 3 2017*, Springer, pp. 378-392.

GRENADE, L. and BOLDY, D., 2008. Social isolation and loneliness among older people: issues and future challenges in community and residential settings. *Australian health review*, **32**(3), pp. 468-478.

GROARKE, J.M., BERRY, E., GRAHAM-WISENER, L., MCKENNA-PLUMLEY, P.E., MCGLINCHEY, E. and ARMOUR, C., 2020. Loneliness in the UK during the

COVID-19 pandemic: Cross-sectional results from the COVID-19 Psychological Wellbeing Study. *PloS one*, **15**(9), pp. e0239698.

HANNES, K., 2011. Critical appraisal of qualitative research.

HAQUE, A., ARIFUZZAMAN, B.M., SIDDIK, S.A.N., KALAM, A., SHAHJAHAN, T.S., SALEENA, T.S., ALAM, M., ISLAM, M.R., AHMMED, F. and HOSSAIN, M.J., 2022. Semantic web in healthcare: a systematic literature review of application, research gap, and future research avenues. *International journal of clinical practice*, **2022**.

HARVEY, A.G., TALBOT, L.S. and GERSHON, A., 2009. Sleep disturbance in bipolar disorder across the lifespan. *Clinical Psychology: Science and Practice*, **16**(2), pp. 256.

HASSARD, J., THOMSON, L. and BLAKE, H., 2023. Understanding and Exploring the Cost of Poor Mental Health at Work for Organisations and Society. *The Routledge Companion to Mental Health at Work*. Routledge, pp. 77-96.

HEYDARI, A., MAJID, V.S. and BAKHSHI, M., 2017. Critical appraisal of published qualitative research papers in the field of nursing management by Iranian authors: A cross-sectional study. *Acta facultatis medicae Naissensis*, **34**(2), pp. 119-128.

HIGHAM, N., 2018. *Living the Life That You Are: Finding Wholeness When You Feel Lost, Isolated, and Afraid*. New Harbinger Publications.

HOLT-LUNSTAD, J., SMITH, T.B., BAKER, M., HARRIS, T. and STEPHENSON, D., 2015. Loneliness and social isolation as risk factors for mortality: a meta-analytic review. *Perspectives on psychological science*, **10**(2), pp. 227-237.

HOLWERDA, T.J., BEEKMAN, A.T.F., DEEG, D.J.H., STEK, M.L., VAN TILBURG, T.G., VISSER, P.J., SCHMAND, B., JONKER, C. and SCHOEVEERS, R.A., 2012. Increased risk of mortality associated with social isolation in older men: only when feeling lonely? Results from the Amsterdam Study of the Elderly (AMSTEL). *Psychological medicine*, **42**(4), pp. 843-853.

HOMBRADOS-MENDIETA, I., GARCÍA-MARTÍN, M.A. and GÓMEZ-JACINTO, L., 2013. The relationship between social support, loneliness, and subjective well-being in a Spanish sample from a multidimensional perspective. *Social Indicators Research*, **114**, pp. 1013-1034.

HOPKINS, W., MARSHALL, S., BATTERHAM, A. and HANIN, J., 2009. Progressive statistics for studies in sports medicine and exercise science. *Medicine Science in Sports Exercise*, **41**(1), pp. 3.

HSU, H., 2020. Typologies of loneliness, isolation and living alone are associated with psychological well-being among older adults in Taipei: A cross-sectional study. *International journal of environmental research and public health*, **17**(24), pp. 9181.

HUANG, X., LIN, J. and DEMNER-FUSHMAN, D., 2006. Evaluation of PICO as a knowledge representation for clinical questions, *AMIA annual symposium proceedings 2006*, American Medical Informatics Association, pp. 359.

IGBOKWE, C.C., EJEH, V.J., AGBAJE, O.S., UMOKE, P.I.C., IWEAMA, C.N. and OZOEMENA, E.L., 2020. Prevalence of loneliness and association with depressive and anxiety symptoms among retirees in Northcentral Nigeria: a cross-sectional study. *BMC geriatrics*, **20**, pp. 1-10.

JALALI, S. and WOHLIN, C., 2012. Systematic literature studies: database searches vs. backward snowballing, *Proceedings of the ACM-IEEE international symposium on Empirical software engineering and measurement 2012*, pp. 29-38.

JUTAI, J.W. and TUAZON, J.R., 2022. The role of assistive technology in addressing social isolation, loneliness and health inequities among older adults during the COVID-19 pandemic. *Disability and Rehabilitation: Assistive Technology*, **17**(3), pp. 248-259.

KASHDAN, T.B., 2007. Social anxiety spectrum and diminished positive experiences: Theoretical synthesis and meta-analysis. *Clinical psychology review*, **27**(3), pp. 348-365.

KELLY, D., 2009. Methods for evaluating interactive information retrieval systems with users. *Foundations and Trends® in Information Retrieval*, **3**(1–2), pp. 1-224.

KINSELLA, K.G. and PHILLIPS, D.R., 2005. *Global aging: The challenge of success*. Population Reference Bureau Washington, DC.

KITAZAWA, M., YOSHIMURA, M., MURATA, M., SATO-FUJIMOTO, Y., HITOKOTO, H., MIMURA, M., TSUBOTA, K. and KISHIMOTO, T., 2018. Associations between problematic Internet use and psychiatric symptoms among

university students in Japan. *Psychiatry and clinical neurosciences*, **72**(7), pp. 531-539.

LACEY, F.M., MATHESON, L. and JESSON, J., 2011. Doing your literature review: Traditional and systematic techniques. *Doing Your Literature Review*, , pp. 1-192.

LEARY, M.R. and KOWALSKI, R.M., 1997. *Social anxiety*. Guilford Press.

LEIMONIS, E. and KOUTRA, K., 2022. Social media use and mental health in young adults of Greece: A cross-sectional study. *Clinical Psychology in Europe (CPE)*, **4**(2), pp. e4621.

LIN, L.Y., SIDANI, J.E., SHENSA, A., RADOVIC, A., MILLER, E., COLDITZ, J.B., HOFFMAN, B.L., GILES, L.M. and PRIMACK, B.A., 2016. ASSOCIATION BETWEEN SOCIAL MEDIA USE AND DEPRESSION AMONG U.S. YOUNG ADULTS. *Depression and anxiety*, **33**(4), pp. 323-331.

LONG, H.A., FRENCH, D.P. and BROOKS, J.M., 2020. Optimising the value of the critical appraisal skills programme (CASP) tool for quality appraisal in qualitative evidence synthesis. *Research Methods in Medicine & Health Sciences*, **1**(1), pp. 31-42.

LOPES, L. and CAMPOS, P., 2019. SCAARF: a subtle conditioning approach for anxiety relief facilitation, *Proceedings of the 18th International Conference on Mobile and Ubiquitous multimedia 2019*, pp. 1-5.

LUKES-DYER, N., 2018. *Social isolation risk among older adults who live alone*. Walden University.

MA, L., WANG, Y., YANG, Z., HUANG, D., WENG, H. and ZENG, X., 2020. Methodological quality (risk of bias) assessment tools for primary and secondary medical studies: what are they and which is better? *Military Medical Research*, **7**, pp. 1-11.

MACDONALD, C., 2012. Understanding participatory action research: A qualitative research methodology option. *The Canadian Journal of Action Research*, **13**(2), pp. 34-50.

MALAEB, D., SALAMEH, P., BARBAR, S., AWAD, E., HADDAD, C., HALLIT, R., SACRE, H., AKEL, M., OBEID, S. and HALLIT, S., 2021. Problematic social media use and mental health (depression, anxiety, and insomnia) among Lebanese

adults: Any mediating effect of stress? *Perspectives in psychiatric care*, **57**(2), pp. 539-549.

MANSFIELD, L., VICTOR, C., MEADS, C., DAYKIN, N., TOMLINSON, A., LANE, J., GRAY, K. and GOLDING, A., 2021. A conceptual review of loneliness in adults: Qualitative evidence synthesis. *International journal of environmental research and public health*, **18**(21), pp. 11522.

MARCOS-PABLOS, S. and GARCÍA-PEÑALVO, F.J., 2020. Information retrieval methodology for aiding scientific database search. *Soft Computing*, **24**(8), pp. 5551-5560.

MARSH, C., AGIUS, P.A., JAYAKODY, G., SHAJEHAN, R., ABEYWICKREMA, C., DURRANT, K., LUCHTERS, S. and HOLMES, W., 2018. Factors associated with social participation amongst elders in rural Sri Lanka: a cross-sectional mixed methods analysis. *BMC Public Health*, **18**, pp. 1-14.

MCKENZIE, K. and HARPHAM, T., 2006. *Social capital and mental health*. Jessica Kingsley Publishers.

MCKEON, R., 2022. *Suicidal behavior*. Hogrefe Publishing GmbH.

MCKINLAY, A.R., FANCOURT, D. and BURTON, A., 2021. A qualitative study about the mental health and wellbeing of older adults in the UK during the COVID-19 pandemic. *BMC geriatrics*, **21**, pp. 1-10.

MENEC, V.H., NEWALL, N.E., MACKENZIE, C.S., SHOOSHTARI, S. and NOWICKI, S., 2020. Examining social isolation and loneliness in combination in relation to social support and psychological distress using Canadian Longitudinal Study of Aging (CLSA) data. *PloS one*, **15**(3), pp. e0230673.

MERCHANT, R.A., LIU, S.G., LIM, J.Y., FU, X. and CHAN, Y.H., 2020. Factors associated with social isolation in community-dwelling older adults: a cross-sectional study. *Quality of life research*, **29**, pp. 2375-2381.

MERLO, G. and VELA, A., 2022. Mental health in lifestyle medicine: a call to action. *American Journal of Lifestyle Medicine*, **16**(1), pp. 7-20.

MICHAEL, S.T., 2000. Hope conquers fear: Overcoming anxiety and panic attacks. *Handbook of hope*. Elsevier, pp. 301-319.

MIRANDA, R., TSYPPES, A., GALLAGHER, M. and RAJAPPA, K., 2013. Rumination and hopelessness as mediators of the relation between perceived

emotion dysregulation and suicidal ideation. *Cognitive Therapy and Research*, **37**, pp. 786-795.

MOLAS TUNEU, M., JEREZ ROIG, J., MINOBES MOLINA, E., COLL PLANAS, L., ESCRIBÀ SALVANS, A., FARRÉS GODAYOL, P., YILDIRIM, M., RIEROLA FOCHS, S., GOUTAN ROURA, E. and BEZERRA DE SOUZA, D.L., 2023. Social and Emotional Loneliness among older people living in Nursing Homes in Spain: a cross-sectional study.

MORRISH, N., MUJICA-MOTA, R. and MEDINA-LARA, A., 2022. Understanding the effect of loneliness on unemployment: propensity score matching. *BMC Public Health*, **22**(1), pp. 740.

MORSE, J.M., 2015. Critical analysis of strategies for determining rigor in qualitative inquiry. *Qualitative health research*, **25**(9), pp. 1212-1222.

MOSS, D., 2002. Psychological perspectives anxiety disorders. *Performance Anxiety: Origins and Management. 1st ed. Thompson Learning*, .

MUNN, Z., MOOLA, S., RIITANO, D. and LISY, K., 2014. The development of a critical appraisal tool for use in systematic reviews addressing questions of prevalence. *International journal of health policy and management*, **3**(3), pp. 123.

NATIONAL ACADEMIES OF SCIENCES, DIVISION OF BEHAVIORAL, MEDICINE DIVISION, BOARD ON BEHAVIORAL, SENSORY SCIENCES, BOARD ON HEALTH SCIENCES POLICY, COMMITTEE ON THE HEALTH, MEDICAL DIMENSIONS OF SOCIAL ISOLATION and LONELINESS IN OLDER ADULTS, 2020. *Social isolation and loneliness in older adults: Opportunities for the health care system*. National Academies Press.

NOGUCHI, T., SAITO, M., AIDA, J., CABLE, N., TSUJI, T., KOYAMA, S., IKEDA, T., OSAKA, K. and KONDO, K., 2021. Association between social isolation and depression onset among older adults: a cross-national longitudinal study in England and Japan. *BMJ open*, **11**(3), pp. e045834.

PACOLET, J., CABRERO, G.R. and SOSVILLA-RIVERO, S., 2023. The economic cost of the loneliness of older persons. *Silver Empowerment Fostering Strengths and Connections for an Age-Friendly Society*, , pp. 55.

PAGE, M.J., MOHER, D., BOSSUYT, P.M., BOUTRON, I., HOFFMANN, T.C., MULROW, C.D., SHAMSEER, L., TETZLAFF, J.M., AKL, E.A. and BRENNAN,

S.E., 2021. PRISMA 2020 explanation and elaboration: updated guidance and exemplars for reporting systematic reviews. *bmj*, **372**.

PARK, C., MAJEED, A., GILL, H., TAMURA, J., HO, R.C., MANSUR, R.B., NASRI, F., LEE, Y., ROSENBLAT, J.D. and WONG, E., 2020. The effect of loneliness on distinct health outcomes: a Detailed review and meta-analysis. *Psychiatry research*, **294**, pp. 113514.

PERISSINOTTO, C.M., CENZER, I.S. and COVINSKY, K.E., 2012. Loneliness in older persons: a predictor of functional decline and death. *Archives of Internal Medicine*, **172**(14), pp. 1078-1084.

PRODUCTIVITY COMMISSION, 2019. The social and economic benefits of improving mental health: issues paper.

PURSSELL, E. and MCCRAE, N., 2020. *How to perform a systematic literature review: a guide for healthcare researchers, practitioners and students*. Springer.

REES, E. and LARGE, R., 2020. Coronavirus and Loneliness, Great Britain: 3 April to 3 May 2020. *London, United Kingdom: Office for National Statistics*, .

REYNOLDS, S., 2008. *Evidence-based practice: A critical appraisal*. John Wiley & Sons.

RITSCHER, L.A., GILLESPIE, C.F., ARNARSON, E.O. and CRAIGHEAD, W.E., 2013. Major depressive disorder. *Psychopathology: History, diagnosis, and empirical foundations*, , pp. 285-333.

RUMSEY, S., 2008. *How to find information: a guide for researchers*. McGraw-Hill Education (UK).

SANTINI, Z.I., JOSE, P.E., CORNWELL, E.Y., KOYANAGI, A., NIELSEN, L., HINRICHSEN, C., MEILSTRUP, C., MADSEN, K.R. and KOUSHEDE, V., 2020. Social disconnectedness, perceived isolation, and symptoms of depression and anxiety among older Americans (NSHAP): a longitudinal mediation analysis. *The Lancet Public Health*, **5**(1), pp. e62-e70.

SCHNARCH, B., 2004. Ownership, control, access, and possession (OCAP) or self-determination applied to research: A critical analysis of contemporary First Nations research and some options for First Nations communities. *International Journal of Indigenous Health*, **1**(1), pp. 80-95.

- SCHRIVER, E., LIEBLICH, S., ALRABIAH, R., MOWERY, D.L. and BROWN, L.A., 2020. Identifying risk factors for suicidal ideation across a large community healthcare system. *Journal of affective disorders*, **276**, pp. 1038-1045.
- SCOTT, E.S., CANIVET, C. and ÖSTERGREN, P., 2020. Investigating the effect of social networking site use on mental health in an 18-34 year-old general population; a cross-sectional study using the 2016 Scania Public Health Survey. *BMC public health*, **20**(1), pp. 1753.
- SHANKAR, A., MCMUNN, A., BANKS, J. and STEPTOE, A., 2011. Loneliness, social isolation, and behavioral and biological health indicators in older adults. *Health psychology*, **30**(4), pp. 377.
- SMITH, M.L., STEINMAN, L.E. and CASEY, E.A., 2020. Combatting social isolation among older adults in a time of physical distancing: the COVID-19 social connectivity paradox. *Frontiers in public health*, **8**, pp. 557274.
- SOLÉ, E., GARRIGA, M., VALENTÍ, M. and VIETA, E., 2017. Mixed features in bipolar disorder. *CNS spectrums*, **22**(2), pp. 134-140.
- STAMPLER, F.M., 1982. Panic disorder: Description, conceptualization, and implications for treatment. *Clinical psychology review*, **2**(4), pp. 469-486.
- SUTIN, A.R., STEPHAN, Y., LUCHETTI, M. and TERRACCIANO, A., 2020. Loneliness and risk of dementia. *The Journals of Gerontology: Series B*, **75**(7), pp. 1414-1422.
- THOMPSON, A., 2023. No title. *Social network characteristics and loneliness in older adults*, .
- THOMSON, J.S., CURRIER, A. and GILLASPY, M., 2014. BASIC LITERATURE SEARCH STRATEGIES. *Introduction to Quality and Safety Education for Nurses: Core Competencies*, , pp. 309.
- THORPE, S.J. and SALKOVSKIS, P.M., 1995. Phobic beliefs: Do cognitive factors play a role in specific phobias? *Behaviour research and therapy*, **33**(7), pp. 805-816.
- TOMSTAD, S., DALE, B., SUNDSLII, K., SÆVAREID, H.I. and SÖDERHAMN, U., 2017. Who often feels lonely? A cross-sectional study about loneliness and its related factors among older home-dwelling people. *International journal of older people nursing*, **12**(4), pp. e12162.

TONDO, L., H VAZQUEZ, G. and J BALDESSARINI, R., 2017. Depression and mania in bipolar disorder. *Current neuropharmacology*, **15**(3), pp. 353-358.

TRAFIMOW, D., 2014. Considering quantitative and qualitative issues together. *Qualitative Research in Psychology*, **11**(1), pp. 15-24.

VALTORTA, N.K., KANAAN, M., GILBODY, S., RONZI, S. and HANRATTY, B., 2016. Loneliness and social isolation as risk factors for coronary heart disease and stroke: systematic review and meta-analysis of longitudinal observational studies. *Heart*, **102**(13), pp. 1009-1016.

VICTOR, C., SCAMBLER, S., BOND, J. and BOWLING, A., 2000. Being alone in later life: loneliness, social isolation and living alone. *Reviews in clinical gerontology*, **10**(4), pp. 407-417.

WALSH, K., SCHARF, T. and KEATING, N., 2017. Social exclusion of older persons: A scoping review and conceptual framework. *European Journal of ageing*, **14**, pp. 81-98.

WEBER, A.N., MICHAIL, M., THOMPSON, A. and FIEDOROWICZ, J.G., 2017. Psychiatric emergencies: assessing and managing suicidal ideation. *Medical Clinics*, **101**(3), pp. 553-571.

WINDLE, K., FRANCIS, J. and COOMBER, C., 2011. *Preventing loneliness and social isolation: interventions and outcomes*. Social Care Institute for Excellence London.

WOOD, F. and BLOOR, M., 2006. Keywords in qualitative methods: A vocabulary of research concepts. *Keywords in qualitative methods*, , pp. 1-208.

WORLD HEALTH ORGANISATION, 2001. The World Health Report 2001: Mental health: new understanding, new hope.

WORLD HEALTH ORGANISATION, 2021. *Decade of healthy ageing: baseline report*. World Health Organisation.

WU, F. and SHENG, Y., 2021. Social isolation and health-promoting behaviors among older adults living with different health statuses: a cross-sectional study. *International Journal of Nursing Sciences*, **8**(3), pp. 304-309.

WU, Y. and ZHANG, C., 2011. The impact of isolation and loneliness on elderly well-being.

YOUNG, K., 2011. Social ties, social networks and the Facebook experience. *International Journal of Emerging Technologies and Society*, **9**(1), pp. 20.

YUSIF, S. and HAFEEZ-BAIG, A., 2024. Evidence-based Information Systems (IS) research: the case of systematic literature review (SLR). *Authorea Preprints*, .

ZENG, X., ZHANG, Y., KWONG, J.S., ZHANG, C., LI, S., SUN, F., NIU, Y. and DU, L., 2015. The methodological quality assessment tools for preclinical and clinical studies, systematic review and meta-analysis, and clinical practice guideline: a systematic review. *Journal of evidence-based medicine*, **8**(1), pp. 2-10.

ZIMMERMAN, M., MORGAN, T.A. and STANTON, K., 2018. The severity of psychiatric disorders. *World Psychiatry*, **17**(3), pp. 258-275.

ZOHRABI, M., 2013. Mixed method research: Instruments, validity, reliability and reporting findings. *Theory and practice in language studies*, **3**(2), pp. 254.

ZUN, L.S. and NORDSTROM, K., 2018. Mood disorders. *Rosen's Emergency Medicine: Concepts and Clinical Practice.9th ed.Philadelphia: Elsevier*, , pp. 1346-1352.

APPENDICES 1

Study no.	First Authors name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
1.	Mercant et al.; 2020; Singapore	Cross-sectional	To determine the prevalence of social isolation among community-dwelling older adults and its association with physical function	202 Community-dwelling older adults aged 60 years and older, 158 (78.2%) of the participants were female. The mean age was 74.1 years.	Total 202	Lubben Social Network Scale (LSNS-6), Geriatric Depression Scale (GDS), FRAIL scale and EuroQol EQ-5D-5L questionnaire which includes EQ Visual Analogue Scale (EQ-VAS), respectively. Cognition was assessed using the Chinese Mini Mental State Examination (cMMSE),	Almost half (45.5%, $n = 92$) of the participants were found to be at risk of social isolation. A poor social network was negatively associated with mean gait speed (OR = 0.674, CI 0.464–0.979, $p = 0.039$), EQ-VAS (OR = 0.561, CI 0.390–0.806, $p < 0.01$) and cMMSE (OR = 0.630, 95% CI 0.413–0.960, $p = 0.032$).
2.	Tomstad et al.;	Cross-sectional	To investigate the	The study sample	Total 2052	29-item Sense of Coherence scale (SOC-	Approximately 11.6% ($n = 239$) of older adults in the study often felt lonely, with

Table 5.1: Characteristics Table

Study no.	First Author name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
	2017; Norway		prevalence of loneliness among Norwegian older home-dwelling people aged 65 years and older, and factors explaining it	included 1,038 (50.6%) women and 1,014 men (49.4%). The mean age of the total sample (n = 2052) was 74.5 years (SD = 6.9), and the mean age of the women and men in the study was 74.8 years		29), Goldberg's General Health Questionnaire (GHQ-30), the Self-care Ability Scale for the Elderly (SASE) and the Nutritional Form for the Elderly (NUFFE).	living alone showing the strongest association (OR = 8.146, p < .0001). Not being satisfied with life (OR = 0.191, p < .0001) and lack of contact with neighbors (OR = 0.681, p = .004) were also significant factors. Higher scores on NUFFE (OR = 1.142, p = .002) and GHQ-30 (OR = 1.069, p < .0001) increased loneliness risk, while higher SOC-29 scores reduced it (OR = 0.969, p < .0001).

Table 5.1: Characteristics Table

Study no.	First Author name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
				(SD = 7.1) and 74.1 years (SD = 6.6), respectively. The age of the entire study sample ranged from 65 to 96 years.			
3.	Adams et al.; 2004; USA	Cross-sectional	Investigate risk and resilience factors for loneliness and depression	All of the respondents resided in independent living. 74% (n = 1	Total 234	Geriatric Depression Scale (GDS,) Loneliness was measured by the UCLA Loneliness Scale (Version 3)	Approximately 21% (n = 46) of the sample showed signs of depression, scoring 11 points or higher on the GDS, while about 19% (n = 43) scored one standard deviation or more above the mean on the UCLA Loneliness Scale, comparing

Table 5.1: Characteristics Table

Study no.	First Author name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
			among older adults in retirement communities	59) of the respondents were female, 26% (n = 56) were male, and 7.4% (n = 19) did not report gender, The mean age of the sample was 81.35 ± 7.0, with a range from 60–98 years			depression levels within loneliness categories showed that 15.2% of less lonely individuals were in the depressed range, compared to 45% of the loneliest individuals ($\chi^2 = 17.743, p < 0.0005$).

Table 5.1: Characteristics Table

Study no.	First Author name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
4.	Bekhet et al.; 2012; Ohio, USA	Cross-sectional	Investigate the relationship between loneliness and mental health of elders living in retirement communities	314 older adults residing in retirement communities in North east Ohio	Total 314	Center for Epidemiological Studies Depression Scale (CES-D), State Anxiety Inventory (STAI A-State),	Nearly 29% of elders (n = 91) reported feeling lonely, with similar rates among men and women ($\chi^2 = 0.62, p = .43$). Gender significantly influenced resourcefulness ($F(1, 310) = 4.37, p < .04$), while loneliness approached significance ($F(1, 310) = 3.02, p < .09$). Loneliness correlated with higher anxiety ($M = 8.04, SD = 7.05$) and depression scores ($M = 10.35, SD = 7.71$) compared to non-lonely elders (anxiety: $M = 5.08, SD = 5.61$; depression: $M = 6.05, SD = 6.17$), both $p < .001$.
5.	Conroy et al.; 2010 Ireland	Cross-sectional	Examine relationship between cognitive impairment and	The sample of 802 participants included 423 women	Total 802	Abbreviated Mental Test (AMT) Score, Social Support Scale, Hospital Anxiety and Depression Scale (HADS).,	The prevalence of loneliness was 12.3% overall, with men significantly less likely to report loneliness than women (risk ratio 0.57, $p < 0.001$). Approximately 30% of the sample rated their health as poor,

Table 5.1: Characteristics Table

Study no.	First Author name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
			Loneliness, boredom-proneness, social relations, and depression in older people	(53%) Table 1 summarizes the characteristics of the participants. Age ranged from 65 to 102, with an average of 74.2 years.		Disability Scale:	with a higher prevalence of poor health reported in women. Depression prevalence on the HADS depression subscale was 16%, slightly lower in men than women (risk ratio 0.78), but not statistically significant
6.	Perissinotto et al.; 2012; USA	Longitudinal cohort study	Examine relationship between loneliness and function	1604 Adults aged over 60 from the Health and	Total 1604	Revised UCLA Loneliness Scale (R-UCLA),	Lonely subjects were more likely to experience decline in ADL (24.8% vs 12.5%; adjusted risk ratio [RR], 1.59; 95% CI, 1.23-2.07); develop difficulties with upper extremity tasks (41.5% vs

Table 5.1: Characteristics Table

Study no.	First Author name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
			nal decline, mortality in adults aged 60 years and older in the United States	Retirement Study (HRS), The mean age of subjects was 71 years.			28.3%; adjusted RR, 1.28; 95% CI, 1.08-1.52); experience decline in mobility (38.1% vs 29.4%; adjusted RR, 1.18; 95% CI, 0.99-1.41); or experience difficulty in climbing (40.8% vs 27.9%; adjusted RR, 1.31; 95% CI, 1.10-1.57). Loneliness was associated with an increased risk of death (22.8% vs 14.2%; adjusted HR, 1.45; 95% CI, 1.11-1.88).
7.	Dahlberg et al.; 2014; UK	Cross-sectional	Identify correlates of social and emotional loneliness in older people	1255 Older people aged 65 and above from the Barnsley metropolitan area	Total 1255	De Jong-Gierveld Loneliness Scale, World Health Organisation-5 Well-being Index (WHO-5), Robins, Hendin, & Trsesniewski Self-esteem Scale, Groningen Activity Restriction Scale (GARS),	Of the respondents, 7.7% were found to be severely or very severely lonely, while another 38.3% were moderately lonely. Social and emotional loneliness shared 19.36% variance. Being male, being widowed, low well-being, low self-esteem, low-income comfort, low contact with family, low contact with friends, low activity, low perceived community

Table 5.1: Characteristics Table

Study no.	First Author name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
				of the UK		Stockholm University and The Institute for Fiscal Studies Scales, Perception of the Local Community Scale	integration, and receipt of community care were significant predictors of social loneliness (R = 0.50, R ² = 0.25, F(18, 979) = 18.17, p < 0.001). Being widowed, low well-being, low self-esteem, high activity restriction, low-income comfort, and non-receipt of informal care were significant predictors of emotional loneliness (R = 0.55, R ² = 0.30, F (18, 973) = 23.00, p < 0.001).
8.	Alpass et al.; 2003 New Zealand	Cross-sectional	Investigate relationships between loneliness, health, and depression in older males	217 older men aged 65 years and above, the age range for the sample was 65 to	Total 217	The six-item Social Support Questionnaire (SSQ6), the revised UCLA Loneliness scale, The Geriatric Depression Scale (GDS)	Almost half (45.5%, n = 92) of the participants were found to be at risk of social isolation. A poor social network was negatively associated with mean gait speed (OR = 0.674, CI 0.464–0.979, p = 0.039), EQ-VAS (OR = 0.561, CI 0.390–0.806, p < 0.01), and cMMSE (OR = 0.630,

Table 5.1: Characteristics Table

Study no.	First Author name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
				<p>89 years (Mean \pm 75.4, SD \pm 4.96). The majority of participants were married (65%), 24% were widowed, and 28% lived alone.</p>			<p>95% CI 0.413–0.960, p = 0.032).</p>
9.	Holwerds et al.; 2012; Amsterdam	Prospective cohort study	Investigate whether social isolation and feelings of	4004 older persons aged 65–84 years	Total 4004	Geriatric Mental State Examination (GMS AGE CAT), Cambridge Mental Disorders of the Elderly	After adjusting for confounding factors, feelings of loneliness remained significantly associated with increased mortality risk in men (HR 1.30, 95% CI 1.04–1.62)

Table 5.1: Characteristics Table

Study no.	First Author name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
			Loneliness in older men and women were associated with increased mortality risk			Examination (CAMDEX), Mini Mental State Examination (MMSE)	but not in women (HR 1.01, 95% CI 0.87–1.17).
10	Igbo kwe et al.; 2020; Nigeria	Cross-sectional	Examine prevalence of loneliness among retirees in North central Nigeria and its association with depressive and anxiety	1099 Retirees aged 60 and above in North central Nigeria, The mean age of participants was 71.3 (± 6.01)	Total 1099	University of California, Los Angeles Loneliness Scale (ULS-8), Depression and Anxiety Subscales of the DASS-21	The multivariable logistic regression model showed that female gender (AOR 1.49; 95% CI (1.09, 2.00), having secondary education (AOR 2.24, 95% CI (1.40, 3.57) and having higher education (AOR 3.82, 95%CI (2.37, 6.16) were significantly associated with depression. Also, lonely retirees are 1.19 times (AOR 1.19; 95% CI (0.84, 1.69) more likely to be depressed compared to retirees that are not lonely,

Table 5.1: Characteristics Table

Study no.	First Author name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
			symptoms	years, and 54.4% were men			and the anxious depressed retirees are 314.58 times (AOR 314.58; 95% CI (508.05, 1941.70) more likely to be depressed than those without anxious depression.
11	Wu et al.; 2021; China	Cross-sectional	Describe characteristics and relationships of social isolation and health-promoting behaviors among Chinese older adults	485 older adults aged 60 or older from four districts in Beijing, China, an average age of 70.31 years (SD = 7.66); 35.1% were male	Total 485	Lubben Social Network Scale-6 (LSNS-6), Health-Promoting Lifestyle Profile II (HPLP-II)	Significant differences existed in health-promoting behaviors, with those with one disease scoring higher than multimorbid individuals ($p = 0.012$). Social isolation was negatively associated with health-promoting behaviors, particularly among those with multimorbidity ($p < 0.05$).

Table 5.1: Characteristics Table

Study no.	First Author name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
				and 64.9% female.			
12	Noguchi et al.; 2021; England, Japan	Longitudinal cohort study	Examine the association between social isolation and depression onset among older adults in England and Japan	36458 Older adults aged 65 years and older, The mean age (SD) was 73.6 (6.9) years for the ELSA and 72.4 (5.4) years for the JAGES.	Total 36458	Centre for Epidemiologic Studies Depression Scale (CES-D), Geriatric Depression Scale (GDS-15)	Higher Social Isolation Index (SII) scores were linked to increased depression onset risk in both ELSA and JAGES studies. In ELSA, OR of depression onset rose significantly from a score ≥ 1 (OR [95% CI]: 1.68 [1.02 to 2.75], P for trend=0.015). In JAGES, OR increased with SII scores, reaching significance at ≥ 3 points (OR [95% CI]: 1.28 [1.04 to 1.56], P for trend <0.001).

Table 5.1: Characteristics Table

Study no.	First Authors name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
13	Mola-Tun et al.; 2023, Taipei, China	Cross-sectional	Analyse factors associated with overall, social, and emotional loneliness among older adults living in Nursing Homes (NHs) in Spain	65 Residents aged 65 years or older from Nursing Homes in the Central Catalonia region of Spain, mean age of 84±7.13 years	Total 333	6-item De Jong Gierveld Loneliness Scale (DJGLS-6, Spanish version), the Lubben Social Network Scale (LSNS-6), EuroQoL-5D (EQ-5D-5L), Yesavage Geriatric Depression Scale (GDS), Anxiety subscale of the Anxiety and Depression Scale (HADS), Pfeiffer SPMSQ Scale (Short portable Mental State Questionnaire)	The prevalence of overall loneliness was 70.7% (95%CI: 58.2-81.4), with social loneliness at 44.6% (95% CI: 33.1-56.6) and emotional loneliness at 46.2% (95% CI: 34.5–58.1). Overall loneliness correlated with lower perceived quality of life (OR = 5.52, 95% CI: 1.25-24.38) and NHs with state subsidised places (OR = 0.19, 95% CI: .05-.74); social loneliness was associated with having 0-1 children (OR = .25, 95% CI: .08-.77), and emotional loneliness with depression (OR = 4.54, 95% CI: 1.28-16.08) and urinary incontinence (UI) (OR = 4.65, 95% CI: 1.23-17.52).
14	Hsu; 2020; China	Cross-sectional	Investigate the clustering of loneliness	Community-based sample	Total 3553	Center for Epidemiologic Studies Depression Scale (CES-D), Short	older adults in the Lonely-Isolated-Others (LIO) cluster were more likely to report worse self-rated health (OR =

Table 5.1: Characteristics Table

Study no.	First Author name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
			ess, isolation, and living alone (LIL) among older adults in Taipei and analyse their associations with psychological well-being.	e of 3553 older adults age 60 and above in Taipei City		Portable Mental State Questionnaire (SPMSQ)	0.533, $p < 0.001$) and lower financial satisfaction (OR = 0.464, $p < 0.001$). Additionally, compared to the Not Lonely-Connected-Others (NLCO) cluster, participants in the Lonely-Connected (LC) cluster had higher depressive symptoms ($\beta = 2.378$, $p < 0.001$), with an explained variance (R square) of 0.412.
15	McKinlay et al.; 2021; UK	Qualitative study	Explore factors affecting the mental health and well-being of older adults in the UK during	20 adults aged over 70 in the UK	Total 2,537	focus group discussion	Revealed threats to well-being during the pandemic but also identified protective factors such as maintaining routine, socialising, and using past coping skills. Participants exhibited resilience in managing fear and uncertainty.

Table 5.1: Characteristics Table

Study no.	First Author name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
			the COVID-19 pandemic.				
16	Dare et al.; 2019; Australia	Mixed methods approach	Provide methodological guidance for researchers interested in developing collaborative research projects with local governments and other agencies regarding older people's partici	361 Older people aged 60 and above in the City of Wanneroo, Western Australia	Total 361	De Jong Gierveld Loneliness Scale	The study examined older adults' participation, loneliness, and health using a mixed-methods approach. Findings revealed that despite a low response rate (18%), 70.7% reported overall loneliness, with social loneliness at 44.6% and emotional loneliness at 46.2%. Participation in group activities was associated with reduced loneliness levels.

Table 5.1: Characteristics Table

Study no.	First Author name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
			participation in community-based activities and the links between participation and levels of social isolation, loneliness, and social connectedness.				
17	Mars h et al.; 2018 ; Sri Lanka	Mixed methods approach	Investigate factors associated with social participation among elders	1028 Elders aged 60 and above in Nuwara Eliya	Total 1028	Abbreviated Mini-Mental State Examination (MMSE), Geriatric Depression Scale (GDS-7), Quality of Life Instrument for	Social participation among elders was positively associated with living in a village (OR = 18.9, 95%CI = 12.5–28.5) and being of Sinhala ethnicity (AOR = 3.95, 95%CI = 2.18–7.18). Factors like younger age, male gender, being

Table 5.1: Characteristics Table

Study no.	First Author name; year; country	Study Design	Aim	Participants Characteristics	Sample Size	Measurement tools	Finding
			in rural Sri Lanka using a mixed-methods approach.	district, Sri Lanka		the Young Elderly in Sri Lanka (QLI-YES), Sociability Trait Scale	married, employed, and satisfied with health were also significant. Conversely, being aged over 80 years was negatively associated with participating in organised social activities (AOR = 0.44, 95%CI = 0.22–0.86).
18	Barg et al.; 2006; USA	Mixed methods approach	Understand how older adults perceive and express depression, particularly focusing on the relationship between loneliness and	102 individuals aged 65 and older in primary care practices, African American and White adults	Total 102	Center for Epidemiologic Studies–Depression scale (CES-D), Composite International Diagnostic Interview–Depression section (CIDI), Beck Anxiety Scale, Beck Hopelessness Scale, Mini-Mental State Examination (MMSE), NEO Five Factor Inventory (NEO-FFI), Medical Outcomes Study	Individuals reporting loneliness in the past week were more likely to self-identify as African American ($p < 0.05$), have an educational level less than high school ($p < 0.05$), and were less likely to be married ($p < 0.05$) compared to non-lonely individuals. They exhibited higher levels of depression, anxiety, and hopelessness, with increased likelihood of sadness and anhedonia ($p < 0.05$). Additionally, they reported worse functioning based on Medical Outcomes

Table 5.1: Characteristics Table

St ud y no .	First Aut hors nam e; year ; cou ntry	Stud y Desi gn	Aim	Parti cipan ts Char acteri stics	Sa mpl e Siz e	Measuremen t tools	Finding
			depres sion.			Short Form- 36 (SF-36)	Study Short Form-36 scores ($p < 0.05$).

APPENDICES 2

Table 4.1: Quality assessment of Quantitative studies

	Merchant et al., 2020	Tomstad et al., 2017	Adams et al., 2004
Purpose/Research	Concisely articulated	Concisely articulated	Clearly distinguished
Problem	Clearly distinguished	Clearly distinguished	Clearly distinguished
Logical	Methodically presented	Methodically presented	Methodically presented
Literature Review	Detailed	Detailed	Detailed
Theoretical Framework	Precisely delineated	Well-established	Precisely delineated
Aims/Objectives	Clearly stated	Clearly stated	Clearly stated
Research Question/Hypotheses	Clearly formulated	Precisely delineated	Clearly formulated
Sample	Wisely selected	Adequate	Appropriately described
Ethical Considerations	Approached	Approached	Approached
Operational Definitions	Precisely delineated	Precisely delineated	Precisely delineated
Methodology	Adequately described	Robust	Precisely delineated
Data Analysis/Results	Appropriately conducted	Appropriately conducted	Appropriately conducted
Discussion	Fully deliberated	Perceptive	Logically Detailed

Table 4.2: Quality assessment of Quantitative studies

	Bekhet et al., 2012	Conroy et al., 2010	Perissinotto et al., 2012
Purpose/Research	Concisely articulated	Concisely articulated	Concisely articulated
Problem	Clearly distinguished	Clearly distinguished	Clearly distinguished

Logical	Methodically presented	Methodically presented	Methodically presented
Literature Review	Detailed	Detailed	Detailed
Theoretical Framework	Well-established	Well-established	Concisely articulated
Aims/Objectives	Clearly stated	Clearly stated	Clearly stated
Research Question/Hypotheses	Precisely delineated	Precisely delineated	Precisely delineated
Sample	Adequately described	Appropriately selected	Concisely articulated
Ethical Considerations	Approached	Approached	Approached
Operational Definitions	Precisely delineated	Precisely delineated	Clearly distinguished
Methodology	Clearly described	Appropriate and clear	Concisely articulated
Data Analysis/Results	Appropriately conducted	Appropriately conducted	Appropriately conducted
Discussion	Detailed	Thorough and Perceptive	Concisely articulated

Table 4.3: Quality assessment of Quantitative studies

	Dahlberg et al., 2014	Alpass et al., 2003	Holwerda et al., 2012
Purpose/Research	Concisely articulated	Clearly distinguished	Concisely articulated
Problem	Clearly distinguished	Clearly stated	Clearly distinguished
Logical	Methodically presented	Methodically presented	Methodically presented
Literature Review	Detailed	Detailed	Detailed
Theoretical Framework	Well-established	Precisely delineated	Well-established
Aims/Objectives	Clearly stated	Clearly stated	Clearly stated
Research Question/Hypotheses	Clearly formulated	Precisely delineated	Precisely delineated
Sample	Adequate	Adequately described	Wisely selected

Ethical Considerations	Approached	Approached	Approached
Operational Definitions	Precisely delineated	Precisely delineated	Precisely delineated
Methodology	Robust	Clearly described	Appropriate
Data Analysis/Results	Appropriately conducted	Appropriately conducted	Appropriately conducted
Discussion	Perceptive	Clearly articulated	Perceptive

Table 4.4: Quality assessment of Quantitative studies

	Igbokwe et al., 2020	Wu et al., 2021	Noguchi et al., 2021
Purpose/Research	Concisely articulated	Concisely articulated	Clearly distinguished
Problem	Clearly distinguished	Clearly distinguished	Clearly distinguished
Logical	Methodically presented	Methodically presented	Methodically presented
Literature Review	Detailed	Detailed	Detailed
Theoretical Framework	Clearly stated	Well-established	Clearly stated
Aims/Objectives	Clearly stated	Clearly stated	Clearly stated
Research Question/Hypotheses	Adequately described	Precisely delineated	Precisely delineated
Sample	Approached appropriately	Representative	Approached appropriately
Ethical Considerations	Approached	Approached	Approached
Operational Definitions	Well-described	Precisely delineated	Clearly described
Methodology	Transparently presented	Sound	Concisely articulated
Data Analysis/Results	Appropriately conducted	Appropriately conducted	Appropriately conducted
Discussion	Clearly articulated	Thorough	Clearly articulated

Table 4.5: Quality assessment of Quantitative studies

	Molas-Tuneu et al., 2023	Hsu, 2020
Purpose/Research	Clearly stated	Concisely articulated
Problem	Clearly distinguished	Clearly distinguished
Logical	Methodically presented	Methodically presented
Literature Review	Detailed	Detailed
Theoretical Framework	Precisely delineated	Precisely delineated
Aims/Objectives	Clearly stated	Clearly stated
Research Question/Hypotheses	Clearly formulated	Precisely delineated
Sample	Approached appropriately	Adequately Approached
Ethical Considerations	Approached	Approached
Operational Definitions	Well-described	Well-defined
Methodology	Transparently presented	Precisely delineated
Data Analysis/Results	Appropriately conducted	Appropriately conducted
Discussion	Clearly articulated	Coherently discussed

Table 4.6: Quality assessment of Qualitative study (Adapted from CASP, 2018)

check list question	McKinlay et al., 2021
Was there a clear statement of the aim of the research?	Yes, the aim of exploring older adults' perspectives on mental health during the COVID-19 pandemic was clearly stated.
is qualitative methodology appropriate?	Yes, qualitative methodology is suitable for delving into the nuanced experiences of older adults in relation to mental health during the pandemic.
Was the research design appropriate to address the aims of the research?	Yes, qualitative interviews were appropriate to Detailedly address the

	research aim of understanding factors affecting mental health during the pandemic.
Was the recruitment strategy appropriate to the aims of the research?	Yes, the recruitment strategy aimed for diversity among older adults, aligning with the research goal of capturing varied perspectives.
Was the data collected to a way that Approached the research issue?	Yes, qualitative interviews effectively captured the nuanced experiences and perceptions related to mental health during the pandemic.
Has the relationship between researcher and participants been adequately considered?	Likely, the study considered the researcher-participant relationship by fostering rapport and ensuring a safe environment for sharing.
Have ethical suits been taken into consideration?	Yes, ethical considerations, including informed consent and confidentiality, were likely Approached throughout the research.
Was the data analysis sufficiently rigorous?	The data analysis likely employed rigorous qualitative methods, such as thematic analysis, to derive meaningful insights.
Is there a clear statement of findings?	Yes, the discussion provided a clear summary of key findings, delineating factors affecting older adults' mental health during the pandemic.
How valuable is the research?	The research is valuable for offering insights into older adults' mental health experiences during the pandemic, informing future support interventions.

Table 4.7: Quality assessment of Mix Method study (Adapted from Hong et al., 2018)

	Berg et al., 2006	Marsh et al., 2018	Dare et al., 2019
1. Screening questions:			
S1. Are there clear research questions?	yes	yes	yes
S2. Do the collected data allow to address the research questions?	yes	yes	yes
2. Mixed methods:			

1. Is there an adequate rationale for using a mixed methods design to address the research question?	yes	yes	yes
2. Are the different components of the study effectively integrated to answer the research question?	yes	yes	yes
3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?	yes	yes	yes
4. Are divergences and inconsistencies between quantitative and qualitative results adequately approached?	yes	yes	yes
5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?	yes	yes	yes