

**Intergenerational Interactions and the Psychological Health of Internet Users in
Later Life**

Shi Ting Lau

DClinPsy Thesis (Volume 1), 2022

University College London

UCL Doctorate in Clinical Psychology

Thesis Declaration Form

I confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Signature:

Name: Shi Ting Lau

Date: 1 July 2022

Overview

Intergenerational interactions have the potential to benefit older adults psychologically and remains an area warranting further investigation. The growing prevalence of internet use and intergenerational programmes has increased the opportunities for accessing intergenerational interactions in the familial and non-familial settings respectively. This thesis sought to elucidate older adults' experiences of intergenerational interactions in both realms.

Part 1 comprises a systematic review considering the impact of internet-mediated familial intergenerational contact on older adults' psychological health. Based on the 20 included studies, the five broad areas related to remote familial intergenerational contact are: social connections and isolation, broader psychological well-being, sense of self and meaning, emotions and safety. Owing to limitations of the literature and the review, these findings are preliminary and merit further research.

Part 2 comprises an empirical qualitative study exploring older internet users' experiences of non-familial intergenerational interactions and intergenerational programmes, with a focus on their psychological well-being. Semi-structured interviews were conducted and analysed inductively in a process guided by the reflexive thematic analysis approach. Findings illustrated that participants were able to form social connections, reconnect with their younger selves, fulfil their passion for learning, contribute to others and occupy their time meaningfully through intergenerational programmes. Future research should continue to study factors influencing the usefulness of intergenerational programmes for this increasingly heterogeneous population.

Part 3 comprises a critical appraisal of issues related to this research process. Reflections about conducting qualitative research and research more generally will be discussed, with an emphasis on subjectivity and practicality.

Impact Statement

Intergenerational programmes (IPs), and by extension intergenerational interactions, have garnered interest in recent years due to the psychological benefits they are purported to bring for older adults. However, there remains much work to be done in understanding the experiences and effects of IPs due to methodological limitations of existing studies and a possible lack of attention to context and changes in society, one of which is internet use.

Despite the increasing relevance of internet use among older adults and the possibilities it offers for familial intergenerational interactions, there do not appear to be any reviews looking at the relationship between internet-mediated familial intergenerational connections and the psychological health of older adults. Part 1 of the thesis aimed to extend the literature by exploring and drawing attention to this area. Findings from the review suggest that digitally mediated intergenerational familial interactions are related to a range of psychological benefits, perhaps the most obvious being greater social connectedness and decreased loneliness. However, the more important contribution from this review may be its highlighting the lack of methodologically sound research looking specifically at the experience and effects of internet-mediated intergenerational family interactions, which prompted several suggestions for future research. With more conclusive evidence, findings can be practically applied to improve lives of older adults, e.g. in informing clinical or policy decisions that encourage older adults to access the internet for this purpose.

The internet allows families to maintain contact despite being geographically separated, and could be an important change and contextual factor. However, there have not been any known studies exploring the experiences of IPs among older internet users, a gap that part 2 of

the thesis aimed to explore. The current findings add to and corroborate with existing literature about older adult well-being and psychological benefits of IPs, and suggest that IPs can benefit and remain relevant even for older internet users who are actively engaged in life. Greater confidence in the benefits of IPs from cumulative research could potentially inform decisions about these programmes, that would provide options for older adults to meet their diverse needs and better their lives. The researcher also aims to share the summarised findings with organisations that assisted in recruitment and are involved in facilitating IPs. This study may also be a reminder to pay more attention to the context within which IPs and their participants exist, so as to provide a more nuanced understanding of the experiences of and benefits from these programmes.

Part 3 of the thesis contains reflections gleaned through the process of completing the above-mentioned studies. It is hoped that the discussion about qualitative research from the perspective of a novice qualitative researcher can provide insights for fellow researchers, and also deepen the appreciation for the unique contributions of qualitative research.

Table of Contents

Acknowledgements.....	9
Part 1: Literature Review.....	11
Abstract.....	12
Introduction.....	13
Method.....	15
Results.....	18
Discussion.....	40
References.....	51
Part 2: Empirical Paper.....	61
Abstract.....	62
Introduction.....	63
Method.....	67
Results.....	73
Discussion.....	94
References.....	105
Part 3: Critical Appraisal.....	116
References.....	128
Appendices.....	130

List of Tables

Part 1: Literature Review

Table 1.1 Summary of Qualitative Studies (n = 12)	22
Table 1.2 Quality Appraisal: Studies Using Qualitative and Mixed Methods Approaches.....	29
Table 1.3 Summary of Quantitative (n = 6) and Mixed Methods Studies (n = 2).....	30
Table 1.4 Quality Appraisal: Studies Using Quantitative Approaches.....	39

Part 2: Empirical Paper

Table 2.1 Sample Characteristics	75
Table 2.2 Participants' Internet Use	78
Table 2.3 Functions of the Internet	78
Table 2.4 Participants' Experiences of IP	79
Table 2.5 Overview of Themes and Sub-themes	83

List of Figures

Part 1: Literature Review

Figure 1.1 PRISMA Flowchart Detailing Search Procedures	19
---	----

Acknowledgements

In the words of a friend (who probably got these from someone else), 'success comes slowly and then all at once'. This thesis had indeed felt like that and been a bit of an emotional rollercoaster, and I say this almost begrudgingly with the awareness of how my expectations, anxieties and procrastination had contributed substantially to this. The process was made even more challenging in the face of other demands in the DClInPsy and life that were also constantly clamouring for headspace, time and effort. While I still don't have answers to the self-doubting thoughts that often plagued me and can imagine things that could possibly have been done earlier and better, I think I have worked hard with the support from many people.

I am grateful for my participants and how they had been generous with their time and effort. It was a joy meeting each individual, and I am both honoured and humbled to hear about their experiences and attitudes. The conversations had been rewarding on both academic and personal levels, and I am glad to have had the opportunity to laugh along with them and also learn from them. I would also like to express my appreciation to the organisations and individuals who had graciously helped me in my research recruitment, despite it not having any direct benefits for them.

I am deeply indebted to my research supervisor Dr Georgina Charlesworth, for her guidance, understanding, patience, and calm reassurance to keep me grounded in overwhelming moments, and also for reading drafts and responding to emails very efficiently especially when we were nearing the deadline. It was my first time working on a systematic review and qualitative study, and I benefited from Georgina's pragmatic approach and vast

knowledge about research. I also appreciate the checking in and support from my course tutor Dr Kristina Soon in this journey.

Last but not least, I am thankful for my family and friends who journeyed with me through my ups and downs, and for believing in me even and especially when I questioned myself. I would not have been able to pursue this doctorate if not for the support, including financially, from my family. Special mention goes to:

- My mother, who probably felt helpless in the waves of my despondence, but nevertheless expressed her concern in the constant reminders to care for my basic needs (including ingesting a myriad of different supplements) which she would have otherwise tended to if I was at home.
- And to Jun Yi (my family in London) and Diyanah, for all the times we laughed and lamented together while being on the same boat, and for trying to keep each other sane while also sitting with moments of madness.

Part 1: Literature Review

Internet-mediated Familial Intergenerational Interactions and the Psychological Health of Internet Users in Later Life

Abstract

Aims: The purpose of the study was to review research on the impact of internet-mediated familial intergenerational contact on the psychological health of older people.

Method: A literature search was conducted in PsycInfo, MEDLINE, Web of Science Core Collection and Scopus, and followed by backward and forward citation searches. After conducting screening based on the inclusion and exclusion criteria, data were extracted from the selected studies and synthesised narratively. The quality of the included articles was assessed using the Mixed Methods Appraisal Tool.

Results: The review included twenty studies which varied widely in their sample characteristics and study designs. The aspects of psychological health related to remote intergenerational familial contact can be grouped into five areas: social connections and isolation, broader psychological well-being, sense of self and meaning, emotions and safety. However, these findings were not consistent and varied depending on factors such as social circumstances, internet activities and proficiency. Moreover, the studies presented with several methodological issues limiting the validity of the review.

Conclusions: Older adults can potentially experience a range of psychological benefits from internet-mediated familial intergenerational interactions. However, there is a need for more research to better understand these effects and their nuances.

Introduction

The proportion of older adults worldwide is expected to almost double between 2015 and 2050 owing to various factors contributing to an ageing population (World Health Organization, 2017). Certain circumstances common in older adulthood, e.g. having more physical health issues, have the potential to impact on older adults' psychological health (World Health Organization, 2017). It becomes ever more important to consider ways to maintain and bolster the psychological health of older adults, given the increase in lifespan and numbers of older adults. Within the scope of this paper, psychological health comprises both the absence of difficulties (e.g. mental health symptoms) and indicators of positive functioning (e.g. life satisfaction). This is consistent with the World Health Organization's definition of mental health as being 'more than the absence of mental disorders', and their emphasis both on addressing mental illness and promoting mental well-being (World Health Organization, 2018). Studies have alluded to the complex relationship between well-being and distress, which are related but not just on opposite ends of the same spectrum (Rafanelli et al., 2000; Ruini et al., 2003; Winefield et al., 2012), thus justifying the need to measure both aspects when looking at psychological health.

Intergenerational interactions within the family context may be a way to enhance older adults' psychological health. Studies have shown that living with adult children or even having them close by is positively associated with better physical and psychological health outcomes especially for those without partners (Lee & Kim, 2022; van der Pers et al., 2015). Frequent interaction with children can also result in higher life satisfaction and is negatively associated with depressive symptomatology (Chai & Jun, 2017; Xie et al., 2020). In addition, there is some

evidence that grandparent-grandchild interactions are associated with improvements in older adults' psychological health, such as lowered risks of depression (Drury et al., 2017; Tsai et al., 2013). However, it is important to note that the effects of intergenerational familial interactions are not straightforward and can be complicated by various factors such as conflict regarding roles (Breheny et al., 2013; Girardin et al., 2018; Schwarz et al., 2010). Despite the potential benefits of familial intergenerational interactions, changes in family composition and living arrangements can deprive individuals of these opportunities. There is an increasing trend of older adults living alone, especially for women and in developed countries (Kinsella & Velkoff, 2002). Studies conducted in the United Kingdom and the Netherlands also demonstrated the increase in physical distance between older adults and their children, which is moderated by factors such as education and ethnicity (Chan & Ermisch, 2015; Kalmijn, 2021).

A significant societal change in recent years is the increasing prevalence of technology and internet use. While this may not be as pronounced compared to younger generations, there is also an observed increase of older adult internet users in recent years (Age UK, 2016; Office for National Statistics, 2019). Having access to technology and the internet allows for older adults to keep in contact with their families despite the geographical distance (Freeman et al., 2020; Juste et al., 2015; Karacan, 2020; Khvorostianov, 2016). In addition to effects on the frequency of interactions, internet and technology use may also affect the quality of older adults' familial relationships. Momtaz et al. (2018) illustrated that older adults' technology use is positively associated with the quality of the relationships with their grandchildren.

The impact of internet use on the psychological health of older adults has been examined in various studies. There is some evidence that internet use may prevent loneliness in

older adults (Cotten et al., 2013; Sum et al., 2008). Heo et al. (2015) further demonstrated that increased social support and reduced loneliness can partially explain the relationship between frequent internet use and greater life satisfaction. Internet use has also been shown to reduce the risk of depression in older adults (Cotten et al., 2014). However, the effects of internet use may depend on various factors, including the type of internet activity (Stevic et al., 2021; Sum et al., 2008). For instance, Sum et al. (2008) showed that loneliness is negatively associated with using the internet to maintain existing social connections, but positively associated with using it to meet new people.

There appears to be some studies examining the general impact of internet use on the health of older adults, and also how older adults have been able to use the internet to maintain their connections with family and friends. However, there is much less focus on the specific intersection of these two topics, i.e. the relationship between internet-mediated familial intergenerational connections and the psychological health of older adults. This can be relevant given that some studies have shown that the effects of internet use can vary depending on the type of internet activity (Stevic et al., 2021; Sum et al., 2008). Thus, this systematic review aimed to address the question: what is the impact on psychological health for older adults who use the internet for familial intergenerational contact?

Method

Search Strategy

The search was conducted in November 2021 in the following electronic databases: PsycInfo, MEDLINE, Web of Science Core Collection and Scopus, using keywords that captured

the four main concepts of 'internet', 'older adults', 'psychological health' and 'intergenerational'. An expert search filter was also consulted to generate search terms related to 'older adults' (Wolters Kluwer Health, 2021). A list of terms and subject headings used in the search are included in Appendix A.

Inclusion and Exclusion Criteria

Studies were included if: (a) participants included older adults who used the internet for intergenerational familial contact (including with children), (b) there was reference to how internet use for intergenerational familial contact is related to psychological health, and (c) these were empirical studies published in peer-reviewed journals. The broader outcome of psychological health was used to provide a more comprehensive picture and also to address the expected scarcity of studies, and was intended to encompass both difficulties (e.g. depression symptoms) and indicators of positive functioning (e.g. life satisfaction). Age was not used as a criterion as the life stage of 'older adults' can be defined differently due to various factors, e.g. varying retirement age in different countries.

Studies were excluded if: (a) they looked only at physical health or cognitive functioning, (b) there is no mention of internet being used for intergenerational familial contact, (c) they were meta-analyses, systematic reviews, literature reviews, editorials, book chapters, conference proceedings, and (d) they were not written in English. There were no restrictions placed on cultural context, location or year of publication.

Study Selection

The search results were exported and organised in EndNote. After eliminating duplicate records, the title and abstract of the articles were screened for suitability based on the inclusion

and exclusion criteria. The full texts of the remaining articles were reviewed and this eventually resulted in an initial list of selected articles, which an advisor checked through. Using this list of initial articles, Web of Science was used to conduct forward and backward citation searches, and the results were screened for articles eligible for inclusion. While the review was mainly conducted by one researcher due to resource limitations, an advisor was consulted throughout the process.

Data Extraction and Synthesis

Data was extracted from the selected studies for the following information: author(s), year of publication, study location, study design, sample characteristics (including sample size and demographic factors), study aims, measures of psychological health (when applicable) and key findings. Considering the varied nature of the included studies, the findings of the review were synthesised narratively where themes were generated based on patterns observed across the individual studies. Specifically, the main findings were extracted from the included studies, and keywords were highlighted to aid the clustering of these findings into broader groups or themes. The synthesis process was largely inductive, but was likely also influenced by the researcher's understanding of psychological health based on her clinical experience and engagement with the literature. An advisor's inputs were also considered to ensure the coherence of the synthesis and resulting themes.

Quality Assessment

The Mixed Methods Appraisal Tool (MMAT) (Hong et al., 2019) was used to assess the quality of the studies in the review, as it can be used for empirical studies based on qualitative, quantitative and mixed methods approaches. It consists of two screening questions that

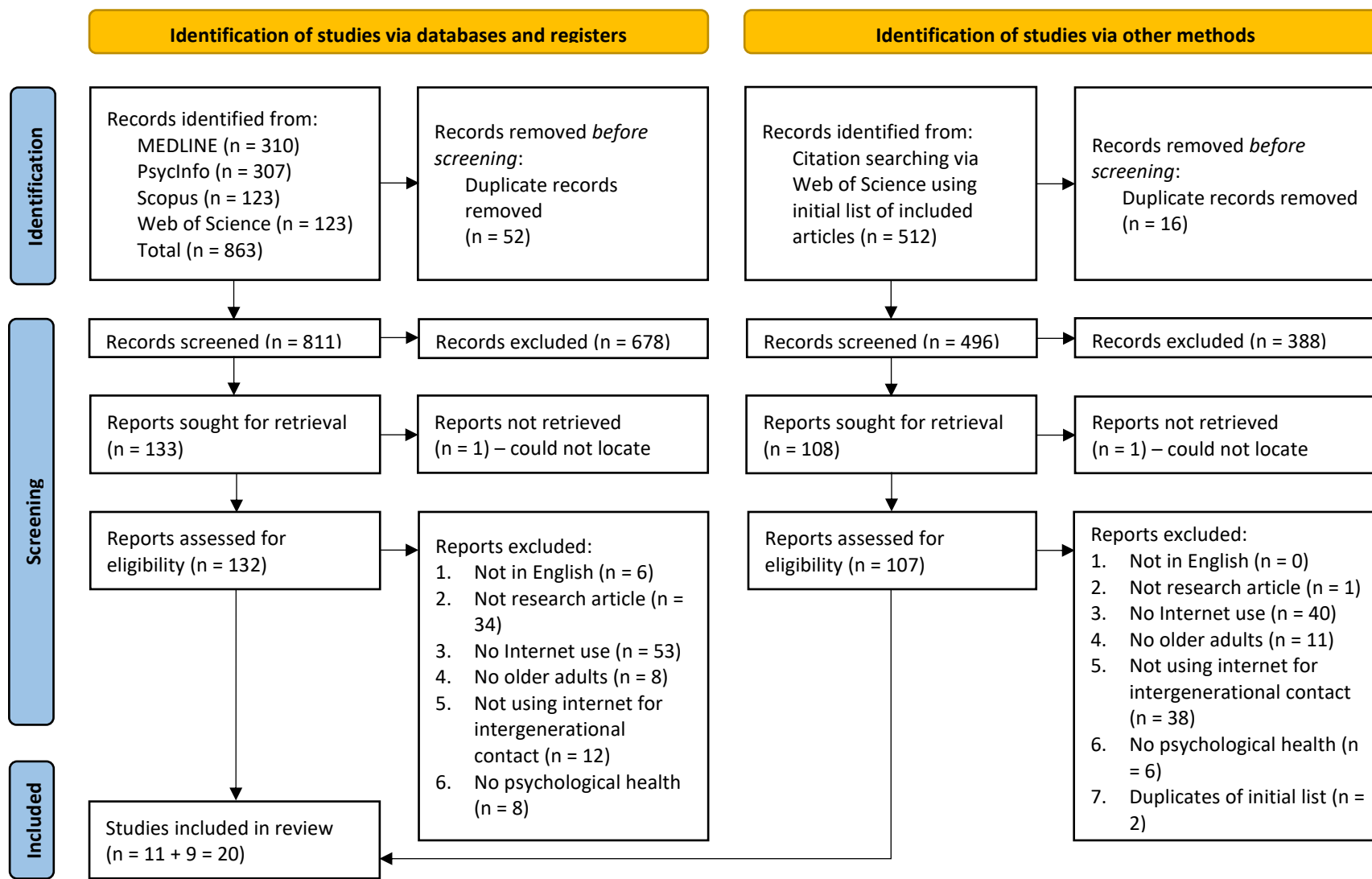
determine if a study is empirical and can be assessed with the MMAT, and also subsequent questions specific to different study designs. Responses comprise 'Yes', 'No' and 'Can't tell'. Individual ratings are not intended to be tallied but to be presented as a whole, in order to provide a better understanding of the nature of the studies. The results of the quality assessment did not have any implications on study inclusion, but were used as a context within which to integrate and interpret the findings of the review.

Results

The initial database search generated 863 initial records. After removing the duplicates, screening of titles and abstracts and reviewing of full texts led to an initial list of 11 articles that were included in the review. The 512 records from the backward and forward citation searches for these 11 articles were subjected to an identical screening and reviewing process, and this eventually resulted in the inclusion of nine additional articles. The search procedures, including the number of articles involved in each step, are further detailed in Figure 1.1 using a PRISMA flowchart (Page et al., 2021).

Figure 1.1

PRISMA Flowchart Detailing Search Procedures



Study Characteristics

Twenty articles met the criteria for inclusion in the current review.

Geographical Location

There was a wide range in terms of the study locations – Argentina (1), Australia (1), Canada (2), China (2), France (1), Israel (1), Italy (2), the Netherlands (1), Philippines (1), Turkey (1), the United Kingdom (1), the United States (3) and multiple countries (3).

Study Design

Though the study designs were varied, most studies were cross-sectional (17) and looked at existing internet use (14), i.e. were not interventions. Studies with qualitative components formed the majority (n = 12). A number of studies included both quantitative and qualitative components i.e. mixed methods. However, most studies were classified as either quantitative or qualitative for the purposes of this review, which only accessed the components relevant to the review question. There were only two mixed methods studies (Neves et al., 2019; Neves et al., 2018). The qualitative and quantitative findings diverged in both studies, but there were no attempts to reconcile or address these discrepancies thus affecting the studies' quality. The MMAT findings and data extracted for these two studies are included in Tables 1.2 and 1.3 respectively.

Sample Characteristics

There were differences across studies in terms of their samples and the types of information reported. For instance, some studies chose to report the range of participants' age while others reported the mean, and the age of participants ranged from 50 to 99 while the average age ranged from 65 to 87.2. Other commonly reported demographic information

included gender, marital status and highest level of education attained. These were included in Tables 1.1 and 1.3 if specified within the articles, together with other relevant characteristics mentioned such as functioning and living status. Most studies had samples consisting mainly of females, older adults who were not married (including single and widowed) and who completed at least secondary education or high school. There was a mix in terms of the level of functioning (e.g. frail vs. independent) and their living situation (e.g. living alone or in care homes).

Study Focus

Participants in all the studies saw the internet as an important tool to keep in touch with their intergenerational family members (children and grandchildren), but also usually used the internet for other purposes such as contacting friends or looking up information. Often, the reported benefits on their psychological health were not explicitly attributed to specific internet activities. Due to paucity of research looking specifically at the psychological impact of remote familial intergenerational interactions, these generically mentioned psychological benefits were also included in the current review. The aspects of psychological health that were impacted by or related to remote intergenerational familial contact can be grouped into five main areas: social connections and isolation (n = 19), including social support, loneliness, isolation and belongingness; general psychological well-being (n = 6) e.g. quality of life, life satisfaction and subjective well-being; sense of self and meaning (n = 9) e.g. self-esteem, agency and generativity, emotions (n = 6) and safety (n = 2).

Table 1.1*Summary of Qualitative Studies (n = 12)*

Author(s) (Year) [Country]	Study design	Sample characteristics	Aims of study	Relevant findings
Caliandro, Garavaglia, Sturiale & Di Leva (2021) [Italy]	Grounded theory, cross-sectional	n = 30 Age 62 -76, mean 70.4 Female 33.3% Married 80% High school 56.7%, university 16.7%	Investigate how older adults use smartphones to connect with family and others	Older adults mainly used smartphones to access WhatsApp and Facebook to maintain and strengthen family bonds. Direct continuous communication allowed 'augmented co-presence' with children and enabled older adults living alone to feel safe. Smartphone use facilitated more face-to-face rather than virtual interactions with grandchildren.
Casanova et al. (2021) [Italy]	Content analysis, intervention	n = 39 Age 79 – 84 Others: good physical and mental health	Explore attitudes of oldest-old towards social networking sites after a training course	Older adults mainly used social networking sites (SNS) to contact people they already know, including intergenerational familial members. SNS were a way to support older adults' social lives and prevent loneliness especially if they live alone, and also a source of entertainment. However, participants were wary about the downsides of SNS use, such as excessive use and scams.
Castillo, Garcia, Abalos & Locsin (2021) [Philippines]	Hermeneutic phenomenological approach, cross-sectional	n = 8 Age 62 – 71 Female 75% Married 0% Others: living alone	Describe the meaning of experience of older adults living alone and using social media during Covid-19 pandemic	Older adults who were isolated during the Covid-19 pandemic used social media to communicate with family and friends including the younger generation. Older adults felt connected and a sense of belongingness, such as when families were updated about their lives. They also experienced comfort, joy, gratitude, and meaning. Social media use allowed participants to reminisce, engage in the present and be hopeful about the future. Participants were also empowered in expressing their opinions and supporting others. However, social media use can lead to older adults missing out on time and other

Author(s) (Year) [Country]	Study design	Sample characteristics	Aims of study	Relevant findings
				opportunities, and was used to distance themselves from certain relationships that were deemed unhelpful.
Chaumon, Michel, Bernard, & Croisile (2014) [France]	Thematic discourse analysis, longitudinal, intervention	n = 17 Age mean 87 Female 88.2% Married 5.9% Others: residential home care unit	Examine whether ICT can bring psychosocial benefits for very elderly people in residential home care units	Older adults used information and communication technologies (ICT) to connect with families. These had a positive impact on older adults' quality of life through enhancing social connections, self-esteem, sense of autonomy and hope. However, technology use was not helpful for individuals whose families did not respond to their emails, and emphasised their social isolation.
Karacan (2020) [Turkey]	Thematic analysis, cross-sectional	n = 34 Age 50 – 89, mean 68.8 Married 79.4% Others: migrants, post-employment	Explore vulnerability patterns of German retirees relocating to a low-cost destination, and the role of social networks especially remote intergenerational familial support	Elderly German migrants sought emotional support by using ICT to regularly contact children and grandchildren in Germany. This included the use of Skype, WhatsApp, and Facebook to facilitate calls and sharing of photos. This allowed for a sense of belonging and 'being there' by facilitating involvement in family events and occasions.
Khvorostianov, Elias & Nimrod (2012) [Israel]	Cross-sectional	n = 32 Age 69 – 89, mean 76 Female 46.9% University 90.6% Others: migrants, poor neighbourhoods and only relying on	Explore how internet use may facilitate coping with challenges of migration in later life	Internet use by older adult immigrants enabled them to cope with challenges of both ageing and immigration, due to the positive impact on their self-worth and quality of life. Amongst other uses, participants also used the internet to maintain and extend their social networks, which can prevent loneliness and social isolation. In fact, the main reason for initiating internet use was to keep in contact with children and grandchildren. It also allowed older

Author(s) (Year) [Country]	Study design	Sample characteristics	Aims of study	Relevant findings
		social security allowance		adults to experience generativity, e.g. creating a family website to educate grandchildren about family history.
Marston, Genoe, Freeman, Kulczycki & Musselwhite (2019) [Canada & U.K.]	Grounded theory, cross-sectional	n = 37 Age 67 – 89, mean 77.4 Female 67.6% Married 11.4%	Investigate experiences, including barriers, and impact of ICT on older adults in rural and urban living	Older adults used technology and social media to stay in contact with children and grandchildren through video calls, text messages and sharing photographs and videos, especially in rural areas. This allowed for reduced social isolation. However, participants also had negative experiences with social media, e.g. conflict with child, due to lack of understanding of its use.
McCabe, Dawson, Douglas & Barry (2021) [U.K.]	Cross-sectional	n = 10 Age 60 – 80	Investigate factors influencing technology use by older people to facilitate new forms of social connection	The internet enabled older people to have intergenerational familial interactions that are informal and longer in duration, and video calls allowed for closer connections than phone calls. Being in closer contact allowed older adults to have a greater sense of independence when their children do not need to physically visit.
Nimrod (2020) [International]	Thematic analysis, cross-sectional	n = 184 Age 65 – 88, mean 71.1 Female 100% Married 47.3% High school 20.1% University 39.1% Others: grandmothers	Explore how ICT use helps older adults remain engaged in valued life activities and maintain subjective well-being through lens of the Selective Optimisation with Compensation model	ICT had positive effects on older adults' well-being through supporting engagement in strategies detailed in the Selective Optimization with Compensation model. Many participants had friends and family living far away but were most bothered by their distance from young grandchildren, which they compensated for through the internet and especially video calls. Lower costs and visual feed enabled more frequent and better communication. While older adults thought that internet cannot replace physical contact, it enables them to connect with their social networks. This then allows for 'a sense of continuity, facilitated the exchange of social support, and helped avoid feelings of loneliness'.

Author(s) (Year) [Country]	Study design	Sample characteristics	Aims of study	Relevant findings
Osmanovic & Pecchioni (2016) [international]	Grounded theory, cross-sectional	n = 9 Age 59 – 71, mean 65 Female 66.7%	Examine habits, preferences, motivations and outcomes of intergenerational family gamers, and whether and how familial connections are facilitated	Older adult gamers mostly played free online social games, e.g. Candy Crush, and seemed to prefer collaborative gameplay. They usually played with their children or grandchildren, and games facilitate conversations that lead to other topics as well. Older adults experience fun, enjoyment and a break from day-to-day life through games, and also a sense of connection with younger family members.
Pisula et al. (2021) [Argentina]	Cross-sectional	n = 39 Age 67 to 76, mean 73 Female 82.1% Secondary education 41%, tertiary 26% Others: middle class, living alone	Explore mental health needs, support networks and coping strategies of isolated older adults during Covid-19 lockdown	To cope with isolation and negative emotions during Covid-19 lockdown, older adults relied on technology, e.g. video calls, to remain in contact with family and friends. Relatives, including children and grandchildren, provided for their needs, and doing things for their family in turn allowed older adults to occupy their time and feel motivated and useful. However, participants also had concerns about being worthless and burdening their families.
Vos, Boekel, Janssen, Leenders & Lujikx (2020) [Netherlands]	Grounded theory, cross-sectional	n = 14 Age 64 – 99 Female 57.1% Married 64% Middle education level 25%, high level 25% Others: receiving home care	Explore experiences and impact of changes in social networks on older adults	Older adults who age in place (live independently and in their own homes) had to navigate changes in their relationship with their children and grandchildren. Being connected through technology felt like a loss of freedom, but also allows older adults to feel less lonely as it allows quicker and easier access to children and grandchildren.

Qualitative Findings

Data extracted from the twelve qualitative studies are shown in Table 1.1, and data from the two mixed methods studies are included in Table 1.3.

Social Connectedness and Loneliness

Based on the studies that qualitatively examined the psychological effects of remote familial intergenerational interactions, there seemed to be evidence of this resulting in closer relationships, decreased isolation and loneliness, and a sense of connectedness and belongingness (Caliandro et al., 2021; Casanova et al., 2021; Castillo et al., 2021; Chaumon et al., 2014; Karacan, 2020; Khvorostianov et al., 2012; Marston et al., 2019; McCabe et al., 2021; Neves et al., 2019; Neves et al., 2018; Nimrod, 2020; Osmanovic & Pecchioni, 2016; Pisula et al., 2021; Vos et al., 2020). The internet allowed older adults to have better, longer and more frequent interactions with their younger family members than they would have otherwise, especially when using video calls.

General Psychological Well-being

The qualitative studies indicated that older adults experienced a better quality of life generally due to the positive impact remote intergenerational interactions had on other areas such as social connectedness and self-esteem (Chaumon et al., 2014; Khvorostianov et al., 2012). However, it should be noted that the findings by Chaumon et al. (2014) should be interpreted with some caution due to a lack of overall coherence in the study's design.

Sense of Self and Meaning

The qualitative findings illustrated that remote intergenerational interactions can both positively and negatively impact older adults' feelings towards themselves and their lives. Older

adults felt a greater sense of meaning, autonomy, self-worth and self-esteem (Castillo et al., 2021; Chaumon et al., 2014; Khvorostianov et al., 2012; Neves et al., 2019). They also experienced empowerment and generativity when they were able to support others and express their opinions (Castillo et al., 2021; Hutto et al., 2015; Khvorostianov et al., 2012; Pisula et al., 2021). However, four studies elucidated the possible risks that internet use and remote familial intergenerational contact can pose to older adults' sense of self and autonomy. Older adults expressed worries about excessive internet use and missing out on time and other opportunities as a result (Casanova et al., 2021; Castillo et al., 2021). Vos et al. (2020) also found that older adults felt a loss of freedom due to these remote connections. Older adults also had concerns about being worthless and burdening their families (Pisula et al., 2021).

Emotions and Mood

The internet was a way for older adults to occupy and entertain themselves, allowed them to cope with negative emotions and also evoked positive emotions such as fun, enjoyment, comfort, joy, gratitude and hope (Casanova et al., 2021; Castillo et al., 2021; Chaumon et al., 2014; Neves et al., 2019; Osmanovic & Pecchioni, 2016; Pisula et al., 2021). However, Neves et al. (2019) also reported that not receiving responses from their family members led to disappointment in some older adults.

Safety

Two studies spoke about effects related to a sense of safety. The internet allowed older adults living alone to be in continuous contact with their children and helped them feel safe as a result (Caliandro et al., 2021). On the flip side, Casanova et al. (2021) illustrated older adults' concerns about internet scams.

Quality Appraisal

Most of the qualitative studies achieved the criteria set out in the MMAT (Table 1.2), e.g. adequate data collection and substantiation of findings, suggesting that the qualitative findings within this review are quite promising. However, two studies did not provide sufficient information about the process of data analysis. For instance, aside from specifying that thematic analysis was used, no other information was given by Karacan (2020) to describe how the semi-structured interviews were analysed. This made it difficult to establish links between the data collected and the eventual findings, and thus affected the overall coherence of these studies.

Table 1.2*Quality Appraisal: Studies Using Qualitative and Mixed Methods Approaches*

First author	Year	Qualitative					Mixed Methods				
		Appropriate approach	Adequate data	Adequate analysis	Substantiated interpretation	Overall coherence	Adequate rationale	Effective integration	Overall interpretation	Addressing inconsistencies	Overall quality
Caliandro	2021	Yes	Yes	Yes	Yes	Yes					
Casanova	2021	Yes	Yes	Yes	Yes	Yes					
Castillo	2021	Yes	Yes	Yes	Yes	Yes					
Chaumon	2014	Can't tell	Can't tell	Yes	Yes	No					
Karacan	2020	Yes	Yes	Can't tell	Yes	No					
Khvorostianov	2012	Yes	Yes	Yes	Yes	Yes					
Marston	2019	Yes	Yes	Yes	Yes	Yes					
McCabe	2021	Yes	Yes	Can't tell	Yes	No					
Neves	2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Neves	2018	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Nimrod	2020	Yes	Yes	Yes	Yes	Yes					
Osmanovic	2016	Yes	Yes	Yes	Yes	Yes					
Pisula	2021	Yes	Yes	Yes	Yes	Yes					
Vos	2020	Yes	Yes	Yes	Yes	Yes					

Table 1.3

Summary of Quantitative (n = 6) and Mixed Methods Studies (n = 2)

Author(s) (Year) [Country]	Study design	Sample characteristics	Aims of study	Measures of psychological health	Relevant findings
Dow, Moore, Scott, Ratnayeke, Wise, Sims & Hill (2008) [Australia]	Longitudinal, intervention	n = 14 Age 50 – 81, mean 65.5 Female 85.7% Others: carers	Test feasibility of computer intervention for promoting health of carers living in rural areas	UCLA Loneliness Scale; GDS-15 for depressive symptoms; Zarit Burden Interview for carer burden	Amongst other uses, older adults also used email for intergenerational communication, i.e. children and grandchildren. Decrease in depressive symptoms for nine participants and loneliness scores for 11 participants after intervention, but minimal change in carer burden. Scores not subjected to statistical testing due to small sample size.
Golomski, Corvini, Kim, Wilcox & Valcourt (2022) [U.S.]	Cross-sectional	n = 91 Age mean 71.6 Female 72.8% Married 10.9% High school 52.8%, college 38.5% Others: rural subsidised housing	Investigate ICT access and use in low-income older adults living in rural and peri-urban subsidised housing	WHO-QOL BREF for quality of life; life satisfaction	Older adults who used emails and social media had more frequent contact with children, $\chi^2(3) = 9.60, p = .022$ and other relatives, $\chi^2(3) = 14.97, p = .002$. However, this was not associated with differences in quality of life, $F(1,89) = 0.79, p = .377$, or life satisfaction, $F(1,89) = 0.56, p = .457$, relative to non-internet users.
Hutto et al. (2015) [U.S.]	Cross-sectional	n = 141 Age 51 – 91, mean 71.2 Female 67.4%	Examine differences between older adult Facebook users and non-	UCLA Loneliness Scale; PROMIS Satisfaction with Social Roles and Activities Scale	Older adult Facebook users had greater social role satisfaction than non-users, $t(129) = -2.27, p < .05$, but did not differ in loneliness, $t(120) = -1.09, p > .1$. Most older adult Facebook users used it to connect with their family members

Author(s) (Year) [Country]	Study design	Sample characteristics	Aims of study	Measures of psychological health	Relevant findings
		Others: high-functioning	users, and investigate relationships between communication habits, views of technology, loneliness and social satisfaction		<p>and friends – 84.4% with children, 48.2% with grandchildren. No difference in how often Facebook users and non-users used traditional communication channels, suggesting that social media is complementary rather than substitute.</p> <p>Among Facebook users, those who often directly communicated with others experienced less loneliness, $t(46) = 2.06, p < .05$, and more social role satisfaction, $\beta = .58, p = .021$. Those who engaged frequently in passive consumption of Facebook content experienced less loneliness, $t(37) = 2.11, p < .05$, but no difference in social role satisfaction, $\beta = .03, p = .938$. Those who often posted generically (i.e. not targeted at specific people) did not experience differences in social role satisfaction, $\beta = .29, p = .122$ or loneliness.</p>
Lee & Kim (2019) [U.S.]	Longitudinal, intervention	n = 55 Age mean 73.8 Female 63.6% Married 7.3% High school 45.5%, College 32.7% Black 56.4%, White 38.2%, Other	Examine effects of intergenerational programme educating older adults on health information technology and social networking, in terms of internet use and social isolation	Perceived self-isolation measure (Cornwell & Waite, 2009) to measure loneliness and social isolation	The most common internet activities the participants wanted to learn were communication-related, such as text messaging and social media. Participants reported engaging in these activities with their children and grandchildren. Overall, social isolation decreased after the programme, $t(54) = 3.84, d = 0.74, p = .001$. Loneliness also decreased, $t(54) = 7.53, d = 1.45, p < .001$, but no change in the perceived lack of social support, $t(54) = 1.29, d = 0.25, p = .21$.

Author(s) (Year) [Country]	Study design	Sample characteristics	Aims of study	Measures of psychological health	Relevant findings
		Others: 'cognitively intact'			
Li & Zhou (2021) [China]	Cross-sectional	n = 7862 Age mean 68.2 Female 50.5% Married 83.1%	Examine whether parent-child contact and relationship can mediate relationship between Internet use and Chinese older people's subjective well-being	Subjective well-being – life satisfaction, happiness and self-confidence	Frequent parent-child contact and better relationships with children sequentially mediated relationship between internet use and older adults' subjective well-being (happiness: Unstandardised coefficient [Biased-corrected bootstrap 95% CI] = 0.006 [0.004,0.009], $p < .001$; life satisfaction: 0.007 [0.005,0.01], $p < .001$, confidence: 0.006 [0.004,0.009], $p < .001$). Parent-child contact also independently mediated the relationship between internet use and subjective well-being (happiness: 0.007[0.000,0.014], $p = .042$; life satisfaction: 0.009[0.002,0.017], $p = .015$; confidence: 0.013 [0.005,0.022], $p = .002$), but parent-child relationship did not (happiness: 0.002[-0.009,0.013], $p = .763$; life satisfaction: 0.002[-0.011,0.015], $p = .763$; confidence: 0.002 [-0.01, 0.013], $p = .763$). Gender moderated the mediatory effects of parent-child connectedness between internet use and subjective well-being, $B = 0.62$, $SE = 0.159$, $p < 0.001$. Specifically, the gap in parent-child contact frequency between internet users and non-users was larger for females than males.

Author(s) (Year) [Country]	Study design	Sample characteristics	Aims of study	Measures of psychological health	Relevant findings
Neves, Franz, Judges, Beermann & Baecker (2019) [Canada]	Intervention, mixed methods	n = 12 Age 74 – 95, mean 82.5 Female 66.7% Married 33.3% Others: retirement home, frail, ethnically diverse	Examine feasibility of new communication app in enhancing social connectedness for older adults in residential care	Abbreviated Duke Social Support Index – social interaction and satisfaction; short revised UCLA Loneliness Scale	Older adults mainly used the app to contact family members, especially children and grandchildren. Changes in scores for social support/interaction and loneliness observed, but not statistically significant. Most participants reported that using the app resulted in positive mood and increased self-efficacy. While using the app increased perceived social interactions for most participants, only those whose families lived aboard experienced greater social connectedness, due to the possibility of having longer and more frequent interactions. These older adults were also least socially connected before using the app. Participants who used the app for brief interactions experienced an increase in perceived social interactions, but not social connectedness. However, using the app led to disappointment and exacerbated loneliness and isolation when the other party did not reply.
Neves, Franz, Munteanu & Baecker (2018) [Canada]	Intervention, mixed methods	n = 5 Age 81 – 93, mean 87.2 Female 60% Married 20% Others: frail, Chinese, care	Examine adoption of new communication app and effect on social connectedness for older adults in residential care	Abbreviated Duke Social Support Index – social interaction and satisfaction; short revised UCLA Loneliness Scale	Scores for social interaction and support increased, but not statistically significant, $\chi^2(2) = 4.67, p = .097$; $\chi^2(2) = 4.50, p = .105$. Using internet for intergenerational connections increased sense of social connectedness in older adults, if they engage in it with at least one close and responsive family member. The internet may increase their ability to connect with overseas family. If family members are

Author(s) (Year) [Country]	Study design	Sample characteristics	Aims of study	Measures of psychological health	Relevant findings
		home, small social networks			non-responsive, it can lead to an increased awareness of the lack of social connectedness.
Song & Ge (2021) [China]	Cross-sectional	n = 415 Age 60 – 80 Female 51.6% High school 16.4%, university 0.5% Others: living alone, only one child	Examine effect of WeChat use on subjective well-being of Chinese older adults living alone, and associated mechanism	Memorial University of Newfoundland Scale of Happiness for subjective well-being; Rosenberg Self-esteem Scale	Older adult WeChat users experienced greater subjective well-being than non-users, $t(414) = 2.74, p = .006$. WeChat users had a higher level of intergenerational support than non-users, $t(414) = 11.01, p < .001$, especially with increased proficiency in using WeChat. Within the study, increased intergenerational support was the strongest mediator for the positive correlation between WeChat use and subjective well-being, $b = 9.11, SE = 1.92, p < .001$, relative to an increase in general social activity of older adults, $b = 0.53, SE = 0.1603, p < .001$. Self-esteem was not associated with WeChat use, $t(414) = 1.82, p = .07$.

Note. Studies that do not include ‘mixed methods’ within the ‘study design’ column are quantitative studies.

Quantitative Findings

Data extracted from the six quantitative studies and two mixed methods studies are shown in Table 1.3.

Measurement of Psychological Health

There was variation across the studies in terms of the measures used, e.g. using single questions vs. questionnaires and tapping on negative vs. positive concepts of psychological health. The UCLA Loneliness Scale (Russell, 1996), including its revised version (Hughes et al., 2004), was the most common questionnaire and was used in four studies. There were also other measures similarly looking at constructs related to older adults' social engagement, such as social role satisfaction and social isolation. There was also focus on measuring positive indicators of psychological health, such as life satisfaction, quality of life, self-esteem and happiness. The only study that included a measure of mental illness symptoms was that by Dow et al. (2008), who used a short form of the Geriatric Depression Scale GDS-15 (Leshner & Berryhill, 1994) to examine depressive symptomatology.

Social Connectedness and Loneliness

Quantitative findings on social connectedness were mixed. Some studies showed that internet use led to or was associated with better social connectedness and relationships, while others presented null results or inconsistencies within their studies. Li and Zhou (2021) demonstrated that older adults' internet use was positively associated with frequency of contact and relationship quality with their children, which were mediators of the relationship between internet use and subjective well-being. In another cross-sectional study, older WeChat users also experienced higher levels of intergenerational support which mediated the

relationship between WeChat use and subjective well-being (Song et al., 2021). Dow et al. (2008) also illustrated that older adults experienced less loneliness after receiving computer training that allowed them to communicate remotely with their family members, but the results were not statistically tested due to the small sample size. Lee and Kim (2019) similarly found that older adults who received internet training reported a decrease in loneliness and overall self-isolation, but not perceived social support. Hutto et al. (2015) observed that older adult Facebook users did not differ in loneliness from non-users. The changes in social connectedness and loneliness were also not statistically significant in the interventional studies by Neves et al. (2019) and Neves et al. (2018).

General Psychological Well-being

Quantitative findings for general psychological well-being were also mixed. Remote intergenerational familial interactions resulted in minimal change in carer burden (Dow et al., 2008), and was also not associated with quality of life or life satisfaction (Golomski et al., 2022). However, Li and Zhou (2021) demonstrated that internet use and subjective well-being were associated, and in fact frequent contact and improved relationship with children sequentially mediated this relationship, especially for females. Song et al. (2021) similarly showed that WeChat use and subjective well-being were associated, and that increased intergenerational support is a stronger mediator of this relationship than an increase in general social activity.

Sense of Self and Meaning

Song et al. (2021) found that self-esteem was not related to WeChat use. Hutto et al. (2015) suggested that effects are not straightforward and may be moderated by the specific communication activity. Older adult Facebook users who communicated directly with specific

others experienced more satisfaction from the fulfilment of their social roles, which was not observed in those who only passively consumed Facebook content.

Emotions and Mood

The only quantitative study examining mood was by Dow et al. (2008), which was also the only study that used a clinical measure. A decrease was observed in depressive symptomatology of older carers after they were given computer training and used emails for intergenerational communication amidst other internet activities. This decrease was however not statistically tested due to the small sample size.

Quality Appraisal

None of the quantitative studies met all the MMAT criteria (Table 1.4), indicating that the quantitative findings should be interpreted with some caution. Firstly, studies often did not account or control for confounding variables which may pose a risk to the validity of results. Use of convenience sampling, substantial risks of nonresponse bias and not having a control group were common factors. However, the use of within-subjects comparisons (e.g. Neves et al., 2018), clear exclusion criteria (e.g. Song et al., 2021) and statistical control of potential confounding variables (e.g. Li and Zhou, 2021) were ways that some studies attempted to limit the influence of extraneous variables. Secondly, there was also a lack of information about the operationalisation and measurement of variables. For instance, Golomski et al. (2022) did not describe the rationale for choosing the questionnaire for quality of life, and also did not provide any information about its reliability and validity. Lastly, it was also hard to determine whether the study participants were representative of the target population, due to sampling issues and/or samples and populations being poorly defined. This was noted in seven studies, such as

the one by Hutto et al. (2015) whose sample was drawn from a longitudinal research participant pool and likely not representative of older adults in general.

Table 1.4

Quality Appraisal: Studies Using Quantitative Approaches

First author	Year	Non-randomised studies					Quantitative descriptive studies				
		Representative sample	Appropriate measurement	Complete data	Controlled confounds	Controlled exposure	Relevant sampling	Representative sample	Appropriate measurement	Low nonresponse risk	Appropriate analysis
Dow	2008						Yes	No	Can't tell	No	Yes
Golomski	2022	Can't tell	Can't tell	Yes	No	Yes					
Hutto	2015	No	Yes	Yes	Yes	Yes					
Lee	2019	Can't tell	Yes	Yes	No	Yes					
Li	2021	Yes	Can't tell	Can't tell	Yes	Yes					
Neves *	2019	Yes	Can't tell	Yes	Can't tell	Yes					
Neves *	2018	Yes	Can't tell	No	Can't tell	No					
Song	2021	No	Yes	Can't tell	Yes	Yes					

* Indicates mixed method studies

Discussion

Findings from the current review suggest that using the internet to connect with intergenerational family members can potentially lead to a range of psychological benefits for older adults. The most obvious area appears to be greater social connectedness and decreased loneliness, but remote intergenerational contact has also been linked to a more positive view of one's identity and life, positive emotions, decreased depression symptoms, sense of safety and broader psychological well-being concepts like quality of life and life satisfaction. However, these effects and associations are not consistent and straightforward, and may be dependent on factors like social circumstances, types of internet activities and internet proficiency. In certain circumstances, it may in fact cause older adults to be worse off, such as when family members do not respond to their attempts to connect via the internet (Neves et al., 2019).

In reconciling the inconsistencies within the findings, it may be worthwhile examining the subtleties and the conditions under which the effects of remote intergenerational familial interactions may vary. Based on a few studies, it appears that the internet may have no impact on older adults' sense of social connectedness or even negatively impact it, depending on how they use the internet. Older adults might choose to distance themselves from certain relationships on social media (Castillo et al., 2021) or could have negative experiences on the internet, e.g. conflict with children, due to limited understanding of its use (Marston et al., 2019). Hutto et al. (2015) also demonstrated that Facebook users who engaged in direct communication with others and/or passively consumed its content experienced less loneliness, but this was not observed for users who posted content generically. In addition, older adults who only used the internet for brief interactions did not experience any changes in social

connectedness (Neves et al., 2019). While older WeChat users experienced higher levels of intergenerational support than non-users, this relationship is more pronounced if they were proficient in using WeChat (Song et al., 2021). The social circumstances of older adults also seemed to be another factor affecting the helpfulness of using the internet for familial intergenerational contact. In the study by Neves et al. (2019), only older adults whose families lived abroad and who were initially least socially connected experienced an increase in social connectedness after using the internet. Using the internet for intergenerational connections can increase the sense of social connectedness in older adults if they engage in this with at least one close and responsive family member (Neves et al., 2018), and not receiving responses despite their attempts to reach out could otherwise exacerbate their sense of loneliness and isolation (Chaumon et al., 2014; Neves et al., 2019; Neves et al., 2018).

The overall pattern of findings is generally consistent with existing literature about the impact of intergenerational relationships on older adults' psychological health. Having frequent interactions with children and grandchildren is related to decreased loneliness, greater life satisfaction and decreased depressive symptomatology (Chai & Jun, 2017; Drury et al., 2017; Tsai et al., 2013; Xie et al., 2020). However, these potential benefits may be moderated by factors such as age, health, income, family composition, cultural factors and conflict regarding roles (Becker et al., 2003; Breheny et al., 2013; Chai & Jun, 2017; Girardin et al., 2018; Schwarz et al., 2010). For instance, familial conflict may occur if older adults' interactions with grandchildren are perceived as interfering with their adult children's parenting (Breheny et al., 2013). A similar pattern is observed in studies investigating the impact of older adult internet use. There is some evidence that internet use may help to decrease loneliness and risk of

depression and increase life satisfaction in older adults (Cotten et al., 2013; Cotten et al., 2014; Heo et al., 2015), but may depend on various factors such as the specific internet activity (Stevic et al., 2021; Sum et al., 2008). For instance, passive smartphone use predicted a decrease in well-being but communicative smartphone use predicted an increase in well-being in older adults (Stevic et al., 2021).

Interestingly, the quantitative studies included in the review tend to be more likely to produce inconsistent or null results compared to their qualitative counterparts. This could be a manifestation of the differences between these two broad research methodologies. By the nature of their design and analysis process, qualitative studies would not typically have null results. In contrast, null results can and do occur in quantitative studies; changes in scores do not necessarily mean anything unless they reach a certain threshold, and many factors can prevent this condition from being met even if the changes are not random. As a result of their differences, the qualitative and quantitative findings can play complementary roles in answering the question of how remote intergenerational interactions is related to the psychological health of older adults. It enables a view on the quantity of change (i.e. statistical significance) and also the quality of change (i.e. in-depth experiences of older adults), and inconsistencies can highlight areas to be further explored for development of a more nuanced understanding of this topic.

Limitations of Studies and Review

Based on the MMAT findings, the studies included in the review presented with considerable methodological weaknesses. It was difficult to ascertain the coherence of a few qualitative studies due to a lack of information about the data analysis process. In addition, the

validity of many quantitative studies could have been challenged by limited control of extraneous variables, insufficient information regarding operationalisation and measurement of variables, and possibly poor representation of the target population. It is likely that constraints in time and resources may have limited the incorporation of some of these design features.

Besides the factors examined within the MMAT, there were other issues that needed to be considered regarding the studies' methodology. These partly contributed to the wide variation in the studies and made it challenging to synthesise the findings. These marked variations are perhaps a reflection of the existing literature and are related to an important limitation in the current review. Importantly, most articles (16 out of 20) did not set out to answer the current research question, i.e. impact of familial intergenerational contact on psychological health of older adults, which may account for why most of the included studies were either completely qualitative in nature or had qualitative aspects. Owing to their depth and the nature of their analyses, qualitative studies were often the ones that provided explanation both about how older adults used the internet and the potential effects on psychological health, even if this might not have been their intended purpose. The reported benefits of internet use on psychological health were often not explicitly attributed to specific internet activities. Studies (including others removed in the screening process) tended to focus on how internet use in general affects or is related to older adults' psychological health without considering the nuances of how older adults use the internet, such as the study by Chai and Kalyal (2019). Even though there were several studies interested in how older adults use the internet for social connections, these often looked at family and friends as a whole instead of making references to specific relationships, such as that by Sheldon et al. (2021). Alternatively,

studies examined the different types of internet activities older adults engage in without explicitly making links to how these are specifically related to psychological health, such as that by Juste et al. (2015). There were also several studies that looked at the digital divide and factors preventing older adults from being part of the online community, such as the study by Carenzio et al. (2021).

The studies varied in their sample characteristics. Importantly, the age range of participants is substantially wide, with the range being 50 to 99 and the average ranging between 65 and 87.2. The wide age range may increase the variation in other factors due to cohort effects or the effects of ageing, resulting in heterogeneity within older adults even in terms of their day-to-day lifestyles (McKenna et al., 2007). Those who are older may differ in terms of functioning and living situations, e.g. more likely to be widowed and institutionalised (Cohen-Mansfield et al., 2013). The oldest old are also more likely than the young old to experience chronic physical ailments and disability, which has implications on their subjective well-being (Berlau et al., 2009; Smith et al., 2002; Zeng et al., 2002). In addition, while only 34% of older adults completed high school in 1993, this is expected to increase to 83% in 2030 (APA Working Group on the Older Adult, 1998), indicating that educational attainment can vary across cohorts of older adults. Despite the heterogeneity within older adults, most studies did not provide enough and similar information about the sample to facilitate the interpretation of the findings. For instance, most of the studies in the review did not mention the ethnicity distribution of their samples, though ethnicity may influence older adults' expectations of intergenerational interactions and their effect on psychological health. Though mutual

intergenerational support is desirable and observed across cultural groups, there may be differences in terms of specific aspects that are deemed important (Becker et al., 2003).

In addition, studies rarely report the nature of participants' family relationships, even though familial conflict would likely affect internet-mediated intergenerational interactions and their outcomes. While the internet offers opportunities for older adults to contact their younger family members more easily and frequently, increased interaction may not be experienced positively for those with pre-existing family tensions. On the contrary, it may highlight or even exacerbate unresolved family tensions, and result in a greater sense of loneliness if family members are non-responsive (Chaumon et al., 2014; Neves et al., 2019; Neves et al., 2018).

There are also differences in how studies have defined, operationalised and measured the variables of interest, i.e. internet use and psychological health. Depending on the study, internet use could have been referred to in general terms (e.g. yes or no), at a more intermediate level such as 'social media', or specific to the use of certain apps such as WeChat e.g. in the study by Song et al. (2021). There was also variation across studies in terms of how psychological health was defined and measured. With the exception of Dow et al. (2008) who looked at depression symptoms, other studies focused on non-clinical concepts e.g. social isolation or indicators of psychological well-being such as life satisfaction. Another notable area is social connectedness; it is not clear as to whether social connectedness is an important aspect of well-being in its own right, or merely an explanatory mechanism. Even though it was referred to as an outcome and benefit in some studies, it was also sometimes used as a factor to explain the relationship between internet use and well-being. This is likely a sign of the

complexities around defining psychological health and well-being observed more broadly in the literature. Though there is agreement that these are multifaceted concepts, there does not seem to be consensus in how they should be defined or measured (Dodge et al., 2012; Galderisi et al., 2015).

Finally, the review was mainly conducted by a single researcher due to resource limitations, and this may have limited its validity especially given the challenges and complexities mentioned above.

Clinical Implications and Future Research

Retirement, changes in physical health and functioning, loss of family and friends, and concerns of death are amongst some of the common occurrences in older adulthood (APA Working Group on the Older Adult, 1998; Russo-Netzer & Littman-Ovadia, 2019; Silva et al., 2015). Older adults may experience a consequent shrinking of their social networks and increased loneliness (Tiilikainen & Seppänen, 2016). Furthermore, these changes may lead to decreased engagement in life and loss of roles, that may have further implications on older adults' identity, life satisfaction, and sense of purpose and control (McKenna et al., 2007; Russo-Netzer & Littman-Ovadia, 2019; Skerrett et al., 2021). All of these above-mentioned shifts can substantially affect older adults' mood and sense of well-being.

Remote familial intergenerational interactions can produce psychological benefits that may counteract these potential negative changes and support older adults in living good lives. Furthermore, the different aspects of psychological health are associated with each other and improvements in one area may facilitate or reinforce positive changes in other aspects of older adults' well-being. For instance, older adults who experience a greater sense of purpose and

meaning in life experience fewer depressive symptoms, lower mortality rates, better cognitive functioning and better physical health and functioning (Steptoe & Fancourt, 2019; Windsor et al., 2015).

Given the potential benefits of using the internet for intergenerational connections, this suggests the importance of supporting older adults to access the internet for this purpose, especially for those with difficulties doing so. This can occur on various levels, from providing more funding for older adult digital literacy programmes at the policy level down to encouraging older adults to contact their younger family members remotely at the individual clinician level. These efforts can be informed by the recent focus on increasing digital literacy and the accessibility of the internet for older adults, e.g. Juste et al. (2015). However, the findings from the review also highlight the presence of factors that could attenuate the positive benefits of remote intergenerational interactions or even lead to negative effects. For instance, older adults are concerned about internet scams (Casanova et al., 2021), and may feel worse off if their family members are not responsive to their attempts for remote connections (Chaumon et al., 2014). As such, it may not be a simple question of increasing accessibility in general, but to consider developing more targeted approaches. For example, it may be useful to focus on specific internet activities or apps in digital literacy programmes, or to educate older adults about certain topic such as internet scams. As part of these nuances, it would also be apt to keep in mind that the internet may not be helpful or possible for some older adults, which would warrant the generation of other alternatives. For example, older adults who are unable to access familial intergenerational interactions can be supported to access intergenerational programmes which promote non-familial intergenerational interactions. Participating in such

programmes may have positive effects on older adults' well-being, mood, health and self-esteem (Gualano et al., 2018).

Aside from allowing remote familial intergenerational interactions, internet use can serve multiple functions for older adults, such as accessing health-related information and services remotely. One of the main motivations for older adults to learn about and use digital services is to connect with their children and grandchildren (Ivan & Fernández-Ardèvol, 2017). In addition, it seems that internet use and social connections can form a positive feedback loop, where family members can encourage and affirm the older adults' continued internet use (Casanova et al., 2021; Khvorostianov et al., 2012). This is relevant as internet services are becoming more prevalent, and familiarity with the internet can increase access to resources and information that could bolster well-being. For example, using the internet to search for information is associated with greater life satisfaction in older adults, especially if they are proficient internet users (Hofer et al., 2019). Being familiar with the internet can also indirectly facilitate better relationships in face-to-face settings. For example, the topic of internet use can facilitate opportunities for in-person conversations that allow older adults to educate their grandchildren (Caliandro et al., 2021).

In view of the current findings and the increasing recognition that mental health encompasses both alleviating distress and promoting well-being (World Health Organization, 2018), clinical psychologists and other mental health professionals can consider suggesting remote familial intergenerational interactions to suitable clients. This is especially so as mental health professionals are likely to have an understanding of clients' family dynamics and other situational factors, e.g. family tensions, that could affect their experiences of remote

intergenerational interactions. Moreover, if these interactions result in negative consequences for clients, clinicians would also be able to support them in managing and resolving these. Within the broader primary care mental health setting, internet access and remote familial intergenerational interactions can perhaps also be considered within the social prescription approach, which aims to link people up with community-based services to address the range of well-being needs (Office for Health Improvement & Disparities, 2022). For instance, clients could be linked up with services that can support them in accessing digital technologies, e.g. computer classes.

The findings from the current review highlight the need for additional research in how older adults use the internet and how these activities can affect their well-being. Specifically, there is a need for more research looking at how using the internet for intergenerational interactions specifically can affect older adults' psychological health. There is some evidence that who older adults interact with and how they interact with them (e.g. Hutto et al., 2015) matter, and a closer examination of these distinctions is warranted. For example, interactions with friends can provide more enjoyment than interactions with family members due to the greater spontaneity and engagement in leisure activities (Larson et al., 1986). Existing research tended to focus on older adults' interacting with their adult children via the internet and less so their grandchildren. This may be part of a tendency of positioning older adults as being a receiver of support, and possibly undermines their ability to contribute and experience generativity. Contrary to this view, many older adults provide support to the younger generations within their families, and are also carers for their spouses (APA Working Group on the Older Adult, 1998). It would thus be informative to expand on the effects of internet use for

interacting with intergenerational family members beyond adult children. In addition, future studies should improve on the methodological weaknesses observed in existing literature, e.g. specifying sample and target populations.

Conclusions

In summary, this review suggests that there are potential psychological benefits for older adults who use the internet for familial intergenerational interactions. However, the limitations of the review and its studies limit the interpretation of the findings, and indicate a need for more research in order to better understand the impact of remote intergenerational interactions in maximising the psychological health of older adults.

References

- Age UK. (2016). *The internet and older people in the UK – Key statistics*. Retrieved from https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/reports-and-briefings/active-communities/rb_july16_older_people_and_internet_use_stats.pdf
- APA Working Group on the Older Adult. (1998). What practitioners should know about working with older adults. *Professional Psychology: Research and Practice, 29*(5), 413-427.
- Becker, G., Beyene, Y., Newsom, E., & Mayen, N. (2003). Creating continuity through mutual assistance: Intergenerational reciprocity in four ethnic groups. *Journal of Gerontology: Social Sciences, 58B*, S151–S159.
- Berlau, D. J., Corrada, M. M., & Kawas, C. (2009). The prevalence of disability in the oldest-old is high and continues to increase with age: Findings from the 90+ study. *International Journal of Geriatric Psychiatry, 24*(11), 1217-1225.
- Breheny, M., Stephens, C., & Spilsbury, L. (2013). Involvement without interference: How grandparents negotiate intergenerational expectations in relationships with grandchildren. *Journal of Family Studies, 19*(2), 174-184.
- Caliandro, A., Garavaglia, E., Sturiale, V., & Di Leva, A. (2021). Older people and smartphone practices in everyday life: An inquire on digital sociality of Italian older users. *Communication Review, 24*(1), 47-78.
- Carenzio, A., Ferrari, S., & Rasi, P. (2021). Older people's media repertoires, digital competences and media literacies: A case study from Italy. *Education Sciences, 11*(10).

- Casanova, G., Abbondanza, S., Rolandi, E., Vaccaro, R., Pettinato, L., Colombo, M., & Guaita, A. (2021). New older users' attitudes toward social networking sites and loneliness: The case of the oldest-old residents in a small Italian city. *Social Media + Society*, 7(4), 13.
- Castillo, J. M. C., Garcia, L. L., Abalos, E., & Locsin, R. C. (2021). Living alone and using social media technologies: The experience of Filipino older adults during the COVID-19 pandemic. *Nursing Inquiry*, e12460.
- Chai, H. W., & Jun, H. J. (2017). Relationship between ties with adult children and life satisfaction among the middle-aged, the young-old, and the oldest-old Korean adults. *International Journal of Aging & Human Development*, 85(4), 354-376.
- Chai, X. N., & Kalyal, H. (2019). Cell phone use and happiness among Chinese older adults: Does rural/urban residence status matter? *Research on Aging*, 41(1), 85-109.
- Chan, T. W., & Ermisch, J. (2015). Residential proximity of parents and their adult offspring in the United Kingdom, 2009-10. *Population Studies*, 69(3), 355-372.
- Chaumon, M. E. B., Michel, C., Bernard, F. T., & Croisile, B. (2014). Can ICT improve the quality of life of elderly adults living in residential home care units? From actual impacts to hidden artefacts. *Behaviour & Information Technology*, 33(6), 574-590.
- Cohen-Mansfield, J., Shmotkin, D., Blumstein, Z., Shorek, A., Eyal, N., Hazan, H., & Team, C. (2013). The old, old-old, and the oldest old: Continuation or distinct categories? An examination of the relationship between age and changes in health, function, and wellbeing. *International Journal of Aging and Human Development*, 77(1), 37-57.

- Cotten, S. R., Anderson, W. A., & McCullough, B. M. (2013). Impact of internet use on loneliness and contact with others among older adults: Cross-sectional analysis. *Journal of Medical Internet Research, 15*(2), e39.
- Cotten, S. R., Ford, G., Ford, S., & Hale, T. M. (2014). Internet use and depression among retired older adults in the United States: A longitudinal analysis. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences, 69*(5), 763-771.
- Dodge, R., Daly, A., Huyton, J., & Sanders, L. (2012). The challenge of defining wellbeing. *International Journal of Wellbeing, 2*(3), 222-235.
- Dow, B., Moore, K., Scott, P., Ratnayake, A., Wise, K., Sims, J., & Hill, K. (2008). Rural carers online: A feasibility study. *The Australian Journal of Rural Health, 16*(4), 221-225.
- Drury, L., Abrams, D., & Swift, H. J. (2017). *Making intergenerational connections: What are they, why do they matter and how to make more of them*. London: Age UK.
- Freeman, S., Marston, H. R., Olynick, J., Musselwhite, C., Kulczycki, C., Genoe, R., & Xiong, B. (2020). Intergenerational effects on the impacts of technology use in later life: Insights from an international, multi-site study. *International Journal of Environmental Research and Public Health, 17*, 5711.
- Galderisi, S., Heinz, A., Kastrup, M., Beezhold, J., & Sartorius, N. (2015). Toward a new definition of mental health. *World Psychiatry, 14*(2), 231-233.
- Girardin, M., Widmer, E. D., Connidis, I. A., Castrén, A.-M., Gouveia, R., & Masotti, B. (2018). Ambivalence in later-life family networks: Beyond intergenerational dyads. *Journal of Marriage and Family, 80*(3), 768-784.

- Golomski, C., Corvini, M., Kim, B., Wilcox, J., & Valcourt, S. (2022). Aspects of ICT connectivity among older adults living in rural subsidized housing: Reassessing the digital divide. *Journal of Enabling Technologies, 16*(1), 17-27.
- Gualano, M. R., Voglino, G., Bert, F., Thomas, R., Camussi, E., & Siliquini, R. (2018). The impact of intergenerational programs on children and older adults: A review. *International Psychogeriatrics, 30*(4), 451-468.
- Heo, J., Chun, S., Lee, S., Lee, K. H., & Kim, J. (2015). Internet use and well-being in older adults. *Cyberpsychology, Behavior, and Social Networking, 18*(5), 268-272.
- Hofer, M., Büchi, E. H. M., & Seifert, A. (2019). Older adults' online information seeking and subjective well-being: The moderating role of internet skills. *International Journal of Communication, 13*, 4426–4443.
- Hong, Q. N., Pluye, P., Fabregues, S., Bartlett, G., Boardman, F., Cargo, M., . . . Vedel, I. (2019). Improving the content validity of the mixed methods appraisal tool: A modified e-Delphi study. *Journal of Clinical Epidemiology, 111*, 49-59.
- Hughes, M. E., Waite, L. J., Hawkley, L. C., & Cacioppo, J. T. (2004). A short scale for measuring loneliness in large surveys: Results from two population-based studies. *Research on Aging, 26*(6), 655-672.
- Hutto, C. J., Bell, C., Farmer, S., Fausset, C., Harley, L., Nguyen, J., & Fain, B. (2015). Social media gerontology: Understanding social media usage among older adults. *Web Intelligence, 13*(1), 69-87.
- Ivan, L., & Fernández-Ardèvol, M. (2017). Older people and the use of ICTs to communicate with children and grandchildren. *Transnational Social Review, 7*(1), 41-55.

- Juste, M. R. P., Carballo, J. G. S., & Lopez, B. R. (2015). Elder people and ICT. A commitment to bridging the digital divide. *Pedagogia Social Revista Interuniversitaria*, 26, 337-359.
- Kalmijn, M. (2021). Long-term trends in intergenerational proximity: Evidence from a grandchild design. *Population, Space and Place*, 27, e2473.
- Karacan, E. (2020). Coping with vulnerabilities in old age and retirement: Cross-border mobility, family relations and social networks of German retirees in Alanya. *Journal of Intergenerational Relationships*, 18(3), 339-357.
- Khvorostianov, N. (2016). "Thanks to the internet, we remain a family": ICT domestication by elderly immigrants and their families in Israel. *Journal of Family Communication*, 16(4), 355-368.
- Khvorostianov, N., Elias, N., & Nimrod, G. (2012). 'Without it I am nothing': The internet in the lives of older immigrants. *New Media & Society*, 14(4), 583-599.
- Kinsella, K., & Velkoff, V. (2002). Living arrangements. *Aging Clinical and Experimental Research*, 14(6), 431-438.
- Larson, R., Mannell, R., & Zuzanek, J. (1986). Daily well-being of older adults with friends and family. *Psychology and Aging*, 1(2), 117-126.
- Lee, O. E., & Kim, D. (2019). Bridging the digital divide for older adults via Intergenerational Mentor-Up. *Research on Social Work Practice*, 29(7), 786-795.
- Lee, S. R., & Kim, L. S. (2022). Coresidence of older parents and adult children increases older adults' self-reported psychological well-being. *International Journal of Alzheimer's Disease*, 2022, 5406196.

- Leshner, E. L., & Berryhill, J. S. (1994). Validation of the geriatric depression scale -short form among inpatients. *Journal of Clinical Psychology, 50*(2), 256-260.
- Li, J., & Zhou, X. (2021). Internet use and Chinese older adults' subjective well-being (SWB): The role of parent-child contact and relationship. *Computers in Human Behavior, 119*, 106725.
- Marston, H. R., Genoe, R., Freeman, S., Kulczycki, C., & Musselwhite, C. (2019). Older adults' perceptions of ICT: Main findings from the Technology In Later Life (TILL) study. *Healthcare, 7*, 86.
- McCabe, L., Dawson, A., Douglas, E., & Barry, N. (2021). Using technology the right way to support social connectedness for older people in the era of COVID-19. *International Journal of Environmental Research and Public Health, 18*(16), 19.
- McKenna, K., Broome, K., & Liddle, J. (2007). What older people do: Time use and exploring the link between role participation and life satisfaction in people aged 65 years and over. *Australian Occupational Therapy Journal, 54*, 273–284.
- Momtaz, Y. A., Vidouje, M. M., Foroughan, M., Sahaf, R., & Laripour, R. (2018). Grandparents-grandchildren relationship in Iran, 2017. *Clinical Practice and Epidemiology in Mental Health, 14*, 296-303.
- Neves, B. B., Franz, R., Judges, R., Beermann, C., & Baecker, R. (2019). Can digital technology enhance social connectedness among older adults? A feasibility study. *Journal of Applied Gerontology, 38*(1), 49-72.
- Neves, B. B., Franz, R. L., Munteanu, C., & Baecker, R. (2018). Adoption and feasibility of a communication app to enhance social connectedness amongst frail institutionalized

- oldest old: An embedded case study. *Information Communication & Society*, 21(11), 1681-1699.
- Nimrod, G. (2020). Aging well in the digital age: Technology in processes of selective optimization with compensation. *Journals of Gerontology: Social Sciences*, 75(9), 2008-2017.
- Office for Health Improvement & Disparities. (2022). Social prescribing: Applying all our health. Retrieved from <https://www.gov.uk/government/publications/social-prescribing-applying-all-our-health/social-prescribing-applying-all-our-health>
- Office for National Statistics. (2019). *Internet users, UK: 2019*. Retrieved from <https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/bulletins/internetusers/2019>
- Osmanovic, S., & Pecchioni, L. (2016). Beyond entertainment: Motivations and outcomes of video game playing by older adults and their younger family members. *Games and Culture: A Journal of Interactive Media*, 11(1-2), 130-149.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., . . . Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *International Journal of Surgery*, 88, 105906.
- Pisula, P., Salas Apaza, J. A., Baez, G. N., Loza, C. A., Valverdi, R., Discacciati, V., . . . Franco, J. V. A. (2021). A qualitative study on the elderly and mental health during the COVID-19 lockdown in Buenos Aires, Argentina - part 1. *Medwave*, 21(4), e8186.
- Rafanelli, C., Park, S. K., Ruini, C., Ottolini, F., Cazzaro, M., & Fava, G. A. (2000). Rating well-being and distress. *Stress Medicine*, 16, 55-61.

- Ruini, C., Ottolini, F., Rafanelli, C., Tossani, E., Ryff, C. D., & Fava, G. A. (2003). The relationship of psychological well-being to distress and personality. *Psychotherapy & Psychosomatics*, *72*(5), 268-275.
- Russell, D. W. (1996). UCLA loneliness scale (version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment*, *66*(1), 20-40.
- Russo-Netzer, P., & Littman-Ovadia, H. (2019). "Something to live for": Experiences, resources, and personal strengths in late adulthood. *Frontiers in Psychology*, *10*, 2452.
- Schwarz, B., Albert, I., Trommsdorff, G., Zheng, G., Shi, S., & Nelwan, P. R. (2010). Intergenerational support and life-satisfaction: A comparison of Chinese, Indonesian, and German elderly mothers. *Journal of Cross-Cultural Psychology*, *41*, 706-722.
- Sheldon, P., Antony, M. G., & Ware, L. J. (2021). Baby boomers' use of Facebook and Instagram: Uses and gratifications theory and contextual age indicators. *Heliyon*, *7*, e06670.
- Silva, L. M., Silva, A. O., Tura, L. F., Moreira, M. A., Nogueira, J. A., & Cavalli, S. (2015). Changes and events over life course: A comparative study between groups of older adults. *Revista Latino-Americana de Enfermagem*, *23*(1), 3-10.
- Skerrett, K., Spira, M., & Chandy, J. (2021). Emerging elderhood: Transitions from midlife. *Clinical Social Work Journal*.
- Smith, J., Borchelt, M., Maier, H., & Jopp, D. (2002). Health and well-being in the young old and oldest old. *Journal of Social Issues*, *58*(4), 715-732.
- Song, L., Ge, Y., & Zhang, X. (2021). The relationship between Wechat use by Chinese urban older adults living alone and their subjective well-being: The mediation role of

- intergenerational support and social activity. *Psychology Research & Behavior Management*, 14, 1543-1554.
- Steptoe, A., & Fancourt, D. (2019). Leading a meaningful life at older ages and its relationship with social engagement, prosperity, health, biology, and time use. *Proceedings of the National Academy of Sciences of the United States of America*, 116(4), 1207-1212.
- Stevic, A., Schmuck, D., Matthes, J., & Karsay, K. (2021). 'Age matters': A panel study investigating the influence of communicative and passive smartphone use on well-being. *Behaviour & Information Technology*, 40(2), 176-190.
- Sum, S., Mathews, R. M., Hughes, I., & Campbell, A. (2008). Internet use and loneliness in older adults. *CyberPsychology & Behavior*, 11(2), 208-211.
- Tiilikainen, E., & Seppänen, M. (2016). Lost and unfulfilled relationships behind emotional loneliness in old age. *Ageing and Society*, 37(5), 1068-1088.
- Tsai, F., Motamed, S., & Rougemont, A. (2013). The protective effect of taking care of grandchildren on elders' mental health? Associations between changing patterns of intergenerational exchanges and the reduction of elders' loneliness and depression between 1993 and 2007 in Taiwan. *BMC Public Health*, 13, 567.
- van der Pers, M., Mulder, C. H., & Steverink, N. (2015). Geographic proximity of adult children and the well-being of older persons. *Research on Aging*, 37(5), 524-551.
- Vos, W. H., van Boekel, L. C., Janssen, M. M., Leenders, R., & Luijkx, K. G. (2020). Exploring the impact of social network change: Experiences of older adults ageing in place. *Health & Social Care in the Community*, 28(1), 116-126.

- Windsor, T. D., Curtis, R. G., & Luszcz, M. A. (2015). Sense of purpose as a psychological resource for aging well. *Developmental Psychology, 51*(7), 975-986.
- Winefield, H. R., Gill, T. K., Taylor, A. W., & Pilkington, R. M. (2012). Psychological well-being and psychological distress: Is it necessary to measure both? *Psychology of Well-Being: Theory, Research and Practice, 2*, 3.
- Wolters Kluwer Health. (2021). Expert searches. Retrieved from <https://tools.ovid.com/ovidtools/expertsearches.html>
- World Health Organization. (2017). Mental health of older adults. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/mental-health-of-older-adults>
- World Health Organization. (2018). Mental health: Strengthening our response. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>
- Xie, Y. F., Ma, M. D., Wu, W. W., Zhang, Y. P., Zhang, Y. T., & Tan, X. D. (2020). Dose-response relationship between intergenerational contact frequency and depressive symptoms amongst elderly Chinese parents: A cross-sectional study. *BMC Geriatrics, 20*, 349.
- Zeng, Y., Vaupel, J. W., Xiao, Z., Zhang, C., & Liu, Y. (2002). Sociodemographic and health profiles of the oldest old in China. *Population and Development Review, 28*(2), 251-273.

Part 2: Empirical Paper

Intergenerational Programmes and the Psychological Health of Internet Users in Later Life

Abstract

Aims: To examine the relevance of intergenerational programmes (IPs) within the context of increasing internet use, this exploratory study aimed to answer the question: With a focus on their psychological well-being, what is the experience of older internet users who participate in IPs?

Method: Participants provided background information through an online form, and completed online individual semi-structured interviews which were transcribed and analysed inductively using the reflexive thematic analysis approach.

Results: The study had 11 participants who generally had positive experiences of IPs regardless of the differences across participants and programmes. The five themes generated from the thematic analysis illustrated that through IPs, participants were able to form social connections, reconnect with their younger selves, fulfil their passion for learning, contribute to others and occupy their time meaningfully.

Conclusions: Given that IPs have a potentially positive psychological impact on older adults, efforts should be made to increase accessibility to and encourage variety in IPs to provide them with opportunities and options. Future research should also continue to investigate factors influencing the usefulness of IPs for this increasingly heterogeneous population, with a particular focus on under-studied groups e.g. ethnic minorities.

Introduction

Modernisation has brought about drastic changes to our lives, some examples being increased literacy, advancements in healthcare and greater connectivity between different parts of the world. The opportunities arising from these changes are unfortunately also accompanied by challenges. Two challenges relevant to the current study would be the ageing population and changes in family structures, e.g. younger family members moving out and further away. Though these are not problems in and of themselves, our societies are ill-equipped to manage their potential negative consequences given their unprecedented nature. An area that has received significant focus in recent years is the 'epidemic of loneliness' which has been hypothesised to be caused by aspects of modern living (Snell, 2017). Indeed, a study by Age UK (2019) showed that social isolation and loneliness are also major challenges for older adults in England.

Psychological Challenges in Older Adulthood

The world is experiencing a rapidly ageing population, where the proportion of people over 60 years old is expected to increase from 12% in 2015 to 22% in 2050 (World Health Organization, 2017). Older adulthood has also become increasingly prolonged as a life stage due to the increase in lifespan. Considering this and the rising number of older adults, it is crucial to consider ways to mitigate the challenges older adults face and support them in living satisfying lives.

The psychological health of older adults may be threatened by certain challenges prevalent in this life stage, including health problems and life transitions such as retirement and bereavement (World Health Organization, 2021). These issues tend to become even more

pronounced with age, e.g. the oldest old are more likely to experience chronic physical ailments and disability (Berlau et al., 2009; Smith et al., 2002; Zeng et al., 2002). Besides issues related to older adulthood, changes in family structures and living arrangements can also pose risks to the psychological health of older adults. An increasing number of older adults are observed to live alone, particularly for women, developed countries and retirement areas (Kinsella & Velkoff, 2002; Snell, 2017). While living alone does not equate to loneliness, these are strongly associated with each other and related to other factors like widowhood and bereavement commonly experienced by older adults (Snell, 2017). Furthermore, social isolation among older adults is also believed to have been aggravated in recent years due to the Covid-19 pandemic (MacLeod et al., 2021; Rodrigues et al., 2022). However, recent societal events and changes are not wholly deleterious. A noteworthy trend is the increasing prevalence of technology and internet use in recent years, which has been similarly observed within older adults (Age UK, 2016; Office for National Statistics, 2019). There is some indication that internet use may buffer against social isolation and loneliness, and promote greater well-being in older adults (Cotten et al., 2013; Cotten et al., 2014; Heo et al., 2015; Szabo et al., 2019).

Social isolation and loneliness have been associated with anxiety and depressive symptoms (Bekhet & Zauszniewski, 2012; Cacioppo et al., 2006). A longitudinal study further illustrated that loneliness and depressive symptoms mutually influenced each other, and this vicious cycle could have troubling implications for older adults' well-being (Cacioppo et al., 2006). Not only does psychological distress significantly limit the quality of life for older adults, it also has implications on the wider society in terms of social and healthcare costs, including opportunity costs. Older adults have much to offer to others around them, but their continued

engagement in life and the society is very much contingent on their health (World Health Organization, 2021).

Intergenerational Interactions

One of the protective factors for older adults' psychological health could be having intergenerational interactions. As intergenerational friendships seem to be relatively rare for older adults especially if they are no longer working (Drury et al., 2017), most older adults likely only experience intergenerational interactions within the context of their family. There is some indication that older adults who interact with their grandchildren experience better psychological health such as lowered risk of experiencing loneliness and depression (Drury et al., 2017; Tsai et al., 2013). A longitudinal study by Drew and Silverstein (2007) also illustrated that losing contact with grandchildren predicts increased depressive symptoms in older adults. In addition, Mahne and Huxhold (2015) demonstrated that a better relationship with grandchildren is associated with higher life satisfaction, greater positive affect and reduced loneliness and negative affect. However, familial intergenerational interactions do not appear to consistently produce benefits depending on personal and cultural factors such as age, health, education, income and expectations (Becker et al., 2003; Breheny et al., 2013; Dong et al., 2012; Girardin et al., 2018; Mahne & Huxhold, 2015; Schwarz et al., 2010).

Despite some evidence that intergenerational interactions can be potentially beneficial, changes in family structures and living arrangements may deny individuals of these opportunities, e.g. when the younger generations move out of their vicinity. Being distanced from their younger family members may further exacerbate the challenges of older adulthood, such as depriving them of potential roles they could play within the family and also of support

they may receive. The reduction in intergenerational interactions and the negative consequences led to the development of intergenerational programmes (IPs) in the 1960s aimed at promoting non-familial intergenerational interaction (Hatton-Yeo, 2010).

Since their inception, the diversity of IPs illustrates the degree of creativity and thought that have gone into their development, e.g. in offering activities across various areas such as art, education and health (Giraudeau & Bailly, 2019). The interest in IPs is not surprising given that several studies and systematic reviews have reported the positive, though inconsistent, effects these programmes can have on older adults, including an improvement in quality of life, self-esteem and a decrease in anxiety and depressive symptoms (Baker et al., 2017; Giraudeau & Bailly, 2019; Gualano et al., 2018; Kessler & Staudinger, 2007; Knight et al., 2014; Krzeczowska et al., 2021; Martins et al., 2019; Park, 2014; Ronzi et al., 2018; Zhong et al., 2020). However, there remains much work to be done in better understanding the effectiveness of IPs as most are not evidence-based or evaluated, and the inconsistency in research design and evaluation procedures limits the validity of existing findings (Canedo-Garcia et al., 2017; Knight et al., 2014; Krzeczowska et al., 2021; Martins et al., 2019; Peters et al., 2021). In addition, there also appears to be a lack of focus on recent changes and contextual factors influencing older adults, such as the increasing prevalence of internet use. Internet use provides older adults with an avenue to access social support and for geographically separated families to stay in touch (Freeman et al., 2020; Heo et al., 2015; Khvorostianov, 2016). By extension, it may also facilitate familial intergenerational interactions that may otherwise not have been possible or as frequent.

IPs are expected to become even more relevant given current sociodemographic trends and issues, due to their potential to benefit individuals and the society as a whole by tapping on and amassing resources existing within individuals (Henkin et al., 2012). It empowers individuals through valuing their contributions, and also encourages mutual support and cohesion between different parts of society.

Aim of Current Study

IPs were developed in a period when familial intergenerational interactions were reducing. However, the increasing accessibility of the internet provides older adult users with an avenue to have and maintain familial intergenerational interactions despite physical distance and during the pandemic. IPs, therefore, may well have little psychological benefit for older internet users.

To the best of the author's knowledge, there has not been any research looking into the psychological well-being of older internet users who engage with IPs. Thus, this exploratory study aimed to answer the following research question: With a focus on their psychological well-being, what is the experience of older internet users who participate in IPs? As the research topic is relatively new, the study adopted a qualitative design to allow for exploration of various perspectives and themes.

Method

This study drew on the reflexive thematic analysis approach, due to its flexible nature that would aid exploration of ideas and patterns in a relatively under-studied area (Braun & Clarke, 2006;2021a). It is also well-suited to the pragmatic constraints of the doctoral thesis,

such as the time and resources available and the participant numbers expected (Braun & Clarke, 2021a).

Positioning of the Researcher

The reflexive thematic analysis approach encourages researchers to be clear about their ontological and epistemological views, and how these influence the study (Braun & Clarke, 2006;2021b). The position adopted by the researcher is best described as situated between relativism and realism, in that some patterns and commonalities can be observed within a range of equally valid truths. Based on personal experiences of being on the other end of interactions with older family members, the researcher's interest in this topic stemmed from a curiosity about older adults' experiences of and motivations for non-familial intergenerational interactions.

As part of the process of being more aware of one's position, the researcher completed a bracketing interview with a colleague in the early stages of the study, and also employed other methods throughout the study, e.g. writing research memos and consulting supervisor. Some excerpts from the transcript of the bracketing interview are included in Appendix B. One of the important points that came up in the bracketing interview was that the researcher's upbringing and cultural background likely contributed to assumptions that older people typically want to stay in contact with their families and these familial relationships are positive experiences. A lack of awareness about these preconceived ideas could prevent the researcher from noticing and exploring ideas contrary to her views, and this was a reminder to pay attention to the importance of listening closely and being curious in participants' accounts.

Ethical Considerations

The study was registered with the University College London (UCL) Data Protection Office under the reference number 'Z6364106/2021/06/32 health research'. It was also approved by the UCL Research Ethics Committee under the project identifier '19837/001'. Appendix C contains the approval documents.

Given the nature of the study, participants were not expected to be exposed to significant distress or risks, and measures were taken to ensure that their rights were upheld, e.g. right to withdraw. While there were no immediate benefits of participating, it is hoped that the study will provide some insight into older people's experiences of IPs and that participants may value the process of sharing their experiences and contributing to student-led research. In appreciation of participants' efforts, £7.50 was donated to Age UK for each completed interview.

Participants and Recruitment

The inclusion criteria for participants were: 1) 65 years old and above, 2) ongoing or past participation in an IP and 3) uses the internet. The lower age limit was set at 65 as it is the current state pension age in the United Kingdom. The exclusion criteria were: 1) unable to remember their experiences in the IP, 2) unable to access emails which were necessary as a mode of contact, 3) unable to be interviewed on online videoconferencing platforms Zoom and Microsoft Teams, and 4) does not have capacity to consent to research. The exclusion criteria were kept minimal to allow for reasonable heterogeneity within the sample which may generate richer data and a range of perspectives that can allow for future exploration, given that the research area is in its infancy.

Participants were recruited via non-NHS organisations, such as schools and third-sector organisations that cater to older people and/or facilitate IPs. The study advertisement (Appendix E) was shared with potential participants through these organisations, and those who were interested to participate either contacted the researcher directly or indirectly through these organisations. The researcher also requested for participants to share the study if they knew of others who were eligible and willing to participate.

Materials

Online Pre-interview Form

Participants had to complete an online form via the web-based survey platform Qualtrics prior to the interview (Appendix F). They were asked to provide some background information e.g. demographic data including ethnicity and information about internet use, and to complete the Practitioner Assessment of Network Type (PANT) questionnaire (Wenger, 1991), which looks at older adults' social support network. Based on their responses, individuals' support networks are categorised into one of five different types that differ in terms of the role of family, friends, neighbours and community groups within these networks. The five network types are 'family dependent', 'locally integrated', 'local self-contained', 'wider community focused' and 'private restricted'. The information collected in the form was used to describe the sample and aid in interpretation of the study's findings.

Interview

During the interviews, participants were asked about their experiences of IPs and internet use. As the Covid-19 pandemic was an important current contextual factor, they were also briefly asked about how their experiences had been affected by it. An interview schedule

(Appendix G) was developed as a guide, with the semi-structured interview questions being generated through brainstorming and advice from qualitative researchers (Braun & Clarke, 2013; Leech, 2002). The researcher's supervisor was also consulted in this process to ensure that the questions were specific to the purposes of the study while still allowing an open and neutral exploration of participants' views. The interview schedule was refined on a few occasions through the researcher's reflections and in consultation with her supervisor, e.g. after a practice interview with a colleague familiar with the target population and the first few participant interviews. For example, questions about internet use were shifted to the end to keep the interview focused on participants' experiences of IPs.

Procedure

The researcher sent the participant information sheet and consent form (Appendix D) to interested individuals via email. This provided information about the study objectives, issues regarding the use of data and confidentiality and participants' role and rights. The researcher also stated that a phone or video call could be arranged to clarify any doubts before individuals consented to the study. The email included a link to an online Qualtrics form, where individuals provided their consent to participate in the study electronically. If they consented to the study, they were automatically redirected to the pre-interview form that takes approximately 10 to 15 minutes to complete.

Upon completion of the online form, the researcher contacted participants to arrange for an individual semi-structured interview lasting approximately an hour. These semi-structured interviews took place on Zoom or Microsoft Teams, and audio recordings were taken for the interviews to be transcribed. At the end of the interview, the researcher asked

participants for their feedback about the study, and also if they would be interested to review the study's findings at a later stage. A summary of the themes and sub-themes from the findings were sent via email to those who agreed. They were invited to share their thoughts, but were also explicitly told that they did not need to read or respond if they were no longer interested.

Data Analysis

Online Pre-interview Form

Other than the participants' age for which descriptive statistics were derived, other data from the online pre-interview form were collated to provide a summary of participant characteristics.

Interview

The interview transcripts were analysed recursively using the various steps detailed by the thematic analysis approach: familiarisation with data through manual transcription etc, generating codes, developing themes, reviewing themes and defining themes (Braun & Clarke, 2006). Coding was mainly inductive and semantic, and involved the researcher's close examination of what was mentioned by participants. The computer application NVivo was used to organise the data and facilitate the analysis process. Some data in the interview transcripts were also extracted to provide an overview of background information pertinent to the study, e.g. the characteristics of IPs and internet use.

Data analysis was completed by the researcher in consultation with her supervisor. Consistent with the epistemological position of reflexive thematic analysis, the supervisor's involvement was not to ensure concurrence but to allow for fine-tuning through increasing the

researcher's awareness of possible assumptions and blind spots. For instance, the supervisor and researcher independently coded a transcript, which was aimed at facilitating a discussion and reflections instead of assessing and ensuring inter-rater reliability.

Results

Participant Characteristics

The study had 11 participants consisting of seven females and four males who ranged in age from 64 to 95 years old ($M = 76.45$, $SD = 9.25$). One participant did not fit into the age criteria of 65 years old and above, but was included as the benefits of having additional data and perspectives seemed to outweigh the costs of breaching a somewhat arbitrary age cut-off. Of the 14 individuals referred to the study, two declined as they did not feel able to participate and one could not be contacted.

Details of sample characteristics are included in Table 2.1. The participants had quite a homogeneous sociodemographic profile – White, completed at least secondary education, live in community independently, and relatively well-connected with local and non-local family and friends, as well as the local community. Seven participants mentioned having family members living overseas in their interviews. Though this was not the case for all participants, the interviews indicated that most appeared richly engaged in their lives and expressed feeling fortunate about their circumstances despite acknowledging the uncertainties and limitations related to older adulthood. Aside from IPs, participants have a wide range of interests and activities, such as volunteering, nature, reading, travelling, and commonly in the arts such as music and drama.

P1: 'None of us know what the future holds, particularly at the stage of my life. Let's face it, I should be 87 years old next month, so I'm lucky I'm as I am.'

P2: 'I'm now at a point of moving into another area, and to challenge myself. I'm not finished here, I've still got a lot of nonsense in my head that I can still do.'

Table 2.1*Sample Characteristics*

Participant number	Age	Sex	Ethnicity	Education	Marital Status	Living arrangements	Support network ^a
P1	86	Female	White	Further	Widowed	Alone	WC
P2	76	Female	White	Further	Married	With family	LI
P3	77	Female	White	Further	Divorced	Alone	LI
P4	85	Male	White	Postgraduate	Married	With family	LI/LS
P5	77	Female	White	Further	Divorced	Alone	WC
P6	72	Male	White	Secondary	Married	With family	LS/WC
P7	95	Female	White	Further	Widowed	Alone	PR
P8	66	Female	White	University	Married	With family	FD/LI
P9	74	Male	White	Further	Married	With family	WC
P10	69	Female	White	Secondary	Married	With family	FD
P11	64	Male	- ^b	Postgraduate	Single	Alone	WC

^a The social network type is ascertained from responses to the PANT (Wenger, 1991); FD = family dependent (close connections with local family), LI = locally integrated (close connections with local family, friends and local community), LS = local self-contained (some connections with family and neighbours), WC = wider community-focused (close connections with local community, and family and friends who tend to be non-local), PR = private restricted (minimal social connections). For the three participants who scored equally high on two separate network types, both types have been indicated.

^b The participant chose not to respond to the question.

Internet Use

Details of participants' internet use are included in Tables 2.2 and 2.3. Overall, most participants seem to be experienced and avid internet users. Most access the internet daily and relatively independently, use more than one digital device and have been internet users for some time, ranging from 2 to 25 years ($M = 15.09$, $SD = 6.80$). About half of the participants started using the internet more during the Covid-19 pandemic, while there were no changes for the others. They also use the internet for multiple functions, particularly for communication and practical purposes like online shopping or looking for information.

Many participants were nudged or supported by their children, and there is a mix of confidence levels in terms of internet use. However, it has become essential for participants who use it to support and simplify their daily lives, to keep in touch with the world and to avoid being disadvantaged by the digital divide. While participants were especially grateful for the social connectivity and information the internet offers, they also recognise the trade-offs of internet use and are selective in when and how they use it. Their approach towards internet use suggests that participants actively and selectively engage in ways to meet their needs and values and navigate the challenges in life.

P7: 'this brilliant invention long after I was young, of the computer, and being able to talk to people, see people, I'm constantly grateful for.'

P8: 'The internet can take time off you if you're not careful, you can end up going down all these wormholes of who's doing what. It can actually save you time as well, if you use it to do things that would normally require you to go somewhere else to do, and go somewhere that's not really interesting, like going to the bank and Sainsbury's'

P9: 'A lot of older people that we deal with are scared, are frightened, can't use it, won't use it. But I think we have to be brave in that respect and embrace whatever is happening around us. Otherwise, we just get left behind and you can't enjoy what is happening around you and particularly with young family – if you've got a young family, you've got to be with it.'

Characteristics of Intergenerational Programmes

Older adults' experiences of IPs varied in many ways, including nature of activity, age of younger people, duration and frequency, and the effects of the Covid-19 pandemic on programmes. Some participants are still participating regularly in these IPs in-person or online, while others had either already completed their once-off participation or were interrupted by the pandemic. Details of participants' experiences of IP are included in Table 2.4. The wide variety in experiences was perhaps further accentuated by the fact that participants appeared to have relatively flexible definitions of IPs, i.e. any programme allowing for interactions with people younger than them regardless of its formal aims. This is in contrast to how IPs tend to be defined in existing literature, i.e. deliberately designed for older people to interact with younger people ranging from babies to university students. It was difficult to screen out programmes that did not fit into this criterion due to the reliance on convenience sampling and only finding out details of participants' IP experiences during the interviews.

Table 2.2*Participants' Internet Use*

Participant number	Years of use	Frequency of use	Effect of Covid on use	Number of platforms	Ask for help	Number of functions
P1	15	Daily	Increased	2	Rarely	6
P2	20	Daily	Increased	3	Sometimes	7
P3	18	Daily	Nil	3	Sometimes	6
P4	20	Daily	Nil	3	Sometimes	4
P5	15	A few times a week	Increased	1	Sometimes	3
P6	5	Daily	- ^a	2	Rarely	9
P7	14	Daily	Nil	1	Sometimes	3
P8	12	Daily	Nil	2	Rarely	6
P9	20	Daily	Increased	2	Sometimes	6
P10	2	A few times a week	Increased	1	Sometimes	5
P11	25	Daily	Increased	3	Sometimes	6

^a Participant did not indicate a response.

Table 2.3*Functions of the Internet*

Internet function	Number of participants who indicated using this
Emails	11
Look for information	9
Online shopping	9
Text messages	8
Video calls	7
Social media	7
Watch videos/movies	4
Games	3
Others	'banking', 'surfing the web', 'streaming church services'

Table 2.4*Participants' Experiences of IP*

	Type of programme	Age of younger people	Impact of Covid-19 pandemic
P1	One-off, sharing life experiences over weeks for younger person to produce brief autobiography	Secondary school	Completed before pandemic
P2	Conducting workshops and vocational training for younger people, and reading and sharing life stories with school children	Likely from school age and up to mid-30s	Completed before pandemic, but prevented attempts to start projects in the UK
P3	One-off, sharing life experiences over weeks for younger person to produce brief autobiography	Secondary school	Completed before pandemic
	Communal singing groups for people of all ages, including mothers who bring their children along	From infancy onwards	Initially stopped but in-person meetings have resumed
P4	Working together in mixed-age theatre project over months to come up with productions	18 and upwards	Stopped and has not resumed
	Writing and directing plays for local school	Secondary school	Completed before pandemic
P5	Weekly assistance about the internet and digital devices from secondary school students	Secondary school	Stopped and has not resumed
P6	Joining primary school classes regularly, and reading to and working together with children	Primary school	Moved to Zoom

P7	Spending time with nursery children, e.g. reading, games, eating	Nursery age	Moved to Zoom but may resume in-person meetings
P8	Working together in mixed-age theatre project over months to come up with productions	18 and upwards	Completed before pandemic
	Providing regular drama, music and art lessons to younger people as part of Saturday school	Primary and secondary school	Started in pandemic and ongoing in-person interactions
P9	Joining primary school classes regularly, and reading to and working together with children	Primary school	On Zoom
	Setting up and being involved in youth drama groups	5 to 18	No longer actively involved
P10	Joining primary school classes regularly, and reading to and working together with children	Primary school	Initially stopped but in-person meetings have resumed
P11	Providing regular music lessons	7 onwards	Moved online but likely a mixture of online and in-person now

Note. Participants' experiences of IPs prior to the pandemic were all in-person.

Impact of Covid-19 Pandemic

The Covid-19 pandemic has been an important contextual factor globally in the past few years, and had effects on participants' lives aside from those on IPs mentioned earlier. Many participants spoke about social isolation and being unable to engage in valued activities, including travelling and meeting family members living overseas. However, some participants appeared more affected than others, such as P5 who is quoted below. A few participants also highlighted their concern for others, including younger and other older people.

P5: 'Very difficult, very difficult. I have no contact with people. [The end of Covid-19-related restrictions is] only starting now but who knows how long that's going to last? ... it's unsettling when you're not quite sure what's coming next. ... People always want to know what's next, and sometimes you can't tell them because nobody knows.'

On the other hand, the pandemic also provided opportunities for some participants to experience what they might otherwise never had, such as relying on technology more to maintain social connections and other benefits.

P3: 'the one thing the pandemic did give me was an excuse to let things go and not keep up with some things that were getting a bit stressful. ... a few people I've not kept up with, that I would have been supporting but it was getting a bit effortful as I've got older. So nobody was getting in touch, so it was a brilliant excuse ... It has been useful for me, in that capacity to let go of things that I was beginning to find were a bit effortful, because I do take quite a lot on.'

The pandemic also further increased the salience of using technology to connect with others, evident from how 10 of the 11 participants starting using and became familiar with

Zoom in the pandemic, which then allowed the contrasting of online and in-person interactions. Participants had mixed opinions on the possibility and value of having online activities and interactions, but expressed a common preference for in-person interactions due to the impersonal nature and logistical limitations of online platforms. This applied to their experiences of IPs as well.

P10: 'Well when you sit next to a child, the child touches you, they hold your hand or they look at you and ask you questions, and you can't get that same feeling when it's something over the internet.'

Experiences of Intergenerational Programmes

Generally, IPs appeared to be enjoyable experiences regardless of differences across participants and programmes. While some participants deemed IPs as essential experiences, they were perhaps viewed as a bonus by others, and the difference may depend on participants' context, e.g. level of isolation and presence of substitutes for attaining benefits from IPs.

P7: 'Oh there'll be no difference really [if I didn't do the programme], because between doing it I'm not sitting breathless and waiting for the next meeting to come. I get on with my life. So if I didn't do it ... I don't even know if I'd think about it but I certainly would miss something very uplifting in my life.'

While some benefits of IPs were built into the programmes, participants seemed to experience or engage in IPs idiosyncratically based on what they personally value and their specific situations. For instance, P10 found it important to bring laughter to the children in a programme that involved reading and doing activities together, while P6 who expressed regret

over not having known his grandchildren spoke about having lots of grandchildren through the IP.

Table 2.5 presents the themes and sub-themes generated from the thematic analysis. Some examples from the analysis process are included in Appendix H and the corresponding codes for each sub-theme are detailed in Appendix I. The themes and sub-themes will be further elaborated with the aid of quotes. For brevity and ease of comprehension, repeated and filler words have been removed from quotes and irrelevant segments will be replaced with ellipses (...).

Table 2.5

Overview of Themes and Sub-themes

Themes	Sub-themes
1. Social connections	1.1 Affinity towards younger people
	1.2 IPs in relation to familial intergenerational interactions
	1.3 Connecting to younger people, peers and community
2. Reconnecting with younger selves	
3. Fulfilling passion for learning	
4. Contributing to others	
5. Occupying time meaningfully	

Theme 1: Social Connections

IPs allowed participants to make social connections regardless of their familiarity or attitudes towards younger people.

1.1 Affinity Towards Younger People

Many participants expressed feeling affinity towards younger people despite having varying degrees of familiarity and contact with them, and a few in fact mentioned being more comfortable amongst younger people than adults.

P3: 'I would rather be placed in a room full of young children that I don't know, than a room full of grownups that I don't know... What I don't enjoy is being in a situation where you all go around and have a cup of tea and chat. That is not my thing at all. So then I'm very happy if there's lots of children about, I'll be much happier with them. I don't want to be chatting and having a cup of tea, I want to go and sing and dance and play, and climb trees.'

However, there were also two participants who feel negatively about the attitudes and behaviours exhibited by younger people, which they attributed to changes in the world and parenting. This contributed to initial apprehension towards participating in an IP for P6 who later enjoyed his experiences, and frustration for P9 when interacting with younger people.

P9: 'I think the main problem I have interacting with outside children... Attitude, I would say is a big problem, lack of manners and lack of parental control. ... I think values are missing, respect is certainly missing in a lot of cases. ... It's pretty difficult and I must say I find that a little exasperating sometimes. But they're young! You know, and we were young, and we didn't understand...'

Differentiations were sometimes made according to younger people's characteristics, such as having different views of and interactions with adolescents compared to younger children. In addition, there were mixed opinions about whether there were any unique benefits

about interacting with younger people or whether it is just part of a more general appreciation for diversity in people.

P3: 'if it's young children, it doesn't really make any difference. I immediately relate to, particularly kindergarten age children, I feel an immediate rapport with any of them. I can get on with them immediately. So, and then, as they get a bit older, I'm more at ease when I know them, when they're in my family probably.'

P4: 'To answer [the question of why diversity is important], you should look at the opposite, which is the enmity between people just because they're different. "You are different from me, therefore I hate you." That's quite common around the world today. And diversity is the exact opposite of that, don't allow any of that. "You are my equal, we are partners, we get on together, it doesn't matter what you are, who you are, where you're from." And that's what's good about diversity – well, it's not good about diversity, diversity is the way it should be... I'm just working with somebody who's 16, or somebody who is 40, somebody who is 60, doesn't matter, doesn't matter what ethnic background they come from. We're working together on a collective purpose, and we accept what each can give, and we work together.'

1.2 IPs in Relation to Familial Intergenerational Interactions

Participants have different experiences of familial intergenerational interactions. Some share close relationships with their younger family members, while others either do not have younger family members or are not in regular contact with them due to their residing overseas or differences. A few participants alluded to the fact that intergenerational relationships in IPs could serve as a substitute for familial intergenerational interactions.

P6: 'this one lad that I said earlier, he just turned around to me and he said, "you're my second granddad" '

There were mixed opinions about whether it is easier to interact with younger people within or outside the family. Two participants alluded to the greater ease of connecting to younger people in IPs compared to those within their family, though there are also others who either feel more comfortable with their family members or did not make any distinctions.

P2: 'I would start with a young person, be as a stranger, learning with them, and what their thoughts are. I would start from scratch, I wouldn't have any preconceived ideas. I think with my grandchildren I've got preconceived ideas, and I'm not really able to change anything or do anything.'

1.3 Connecting to Younger People, Peers and Community

IPs allowed participants to build relationships with younger people and other older adult participants, and feel a sense of belonging to a wider collective. Participants' accounts revealed the significance of working and learning together, feeling valued by their younger counterparts and experiencing reciprocity in the relationship. For example, participants highlighted moments when children took an interest in their stories, initiated greetings and interactions, and remembered them. Interestingly, a few participants mentioned having parties and food together, which could suggest that these are important aspects to social connections and a sense of community.

P3: 'I could definitely see that she was genuinely interested in my stories. She was a good listener, and genuinely interested. And you can tell just from comments that she would make, I can't really remember now what she did say at any time, but I know that

generally I very quickly felt at home with [younger person] and she felt the same with me.'

P4: 'Just the very fact that being allowed, permitted and honoured to be working with them. Because it is a divide, between young and old, and they were crossing that divide.'

P10: 'Soon as I walk in the classroom, the teacher has to pick a child. And the teacher says, "Who wants to go with [participant] today?", and every single child put their hand up, and that really really choked me.'

Some participants appreciated the flexibility and freedom of enjoying intergenerational interactions within the setting of IPs.

P8: '... seemed like a good use of my skills and interests. It's also not too tying, it being a volunteer thing – you want to support and don't let people down but you don't feel like you've got to really do it all the time.'

However, it seemed that many of the intergenerational relationships in these programmes tend to be transient, and participants have also felt the need to observe certain boundaries and exercise self-censure.

P10: 'Well all the little children [in my family] call me "nutty [name]". Because they think I'm totally mad, 'cause I do stupid things with them. I'm quite happy to get on the floor and play, and all that sort of thing. And I play tricks on them and make them laugh ... But I don't act that way with the school children, 'cause they would probably throw me off the [programme]. ... I behave myself. I don't torment them or play tricks on them ... Might have a little laugh with them, but not like the other kids [in my family]'

Theme 2: Reconnecting with Younger Selves

IPs provided participants access to their younger selves by allowing for opportunities to reminisce about the past, due to the nature of the programmes or through informal conversations with their younger counterparts who asked directly or reminded them indirectly about their own childhoods.

P3: I'm not somebody that wallows around in the past all that much. I live in the present ... And since [the IP], I've gone through photos and I have remembered things and found it quite a peaceful old age thing to do, to sit and reminisce about the past and remember the stories. ... it gave me access to taking myself back in time and remembering.

In addition, IPs also allowed participants to feel youthful in the present as they feel energised just from being in the presence of younger people, or are given the opportunity to be playful in their interactions.

P7: 'it brings out the young person that is still in you. When you grow older, you don't leave the young person behind. Sometimes when I feel a bit old, I say "[name], you're 26. (laughs) No, not 96, you're 26. Pull up.'" And being with a young person brings some of your childhood back'

Theme 3: Fulfilling Passion for Learning

Almost all the participants expressed a passion for learning or to be updated about the world and/or its changes, which seemed to further contribute to the enjoyment they got through IPs.

P07: 'Well, I have to confess that I often don't remember what I've learnt. ... But while I'm learning, I just love it, I just love to see and hear new things, or things I just didn't know about. ... I couldn't remember like a younger brain would retain it, but that doesn't matter because I get so much enjoyment out of the watching.'

P9: 'I think it's very important for our own health and peace of mind to be there and to be part of the conversations that are going on, to be mindful of what's going on around you and with other people, not just yourself. Don't be self-centered, don't be inward-looking. You only get out of this world what you put into it, and that's always been my philosophy.'

Participants learnt and experienced new things through IPs. This can be through the nature of the activity, such as programmes where older and younger participants read and learn together. Alternatively, it can be through more informal interactions with younger people where older adults are able to find out about their perspectives and interests.

P11: 'I've learnt about patience, I've learnt about joy, I've learnt just absolute sheer joy. And having fun with little things, not necessarily having to be serious all the time. ... So I've learnt a lot through them. I think a lot of people think that kids don't think about those things, but kids think about very very very deep things.'

In addition, some participants alluded to the sense of wonder they experience in observing and being in the presence of young people, and witnessing their growth.

P3: 'As I've got older, it's just mesmerising to watch this play unfold and just to watch them as they grow older, how they come into their bodies and how different they are,

and how peaceful so many of them are, and then to see that some just aren't so peaceful and where is that coming from.'

Based on what they have learnt from interacting with younger people, a few participants even saw the relationship as being more equal or reciprocal.

P11: 'I always try to not talk down to them 'cause in many ways they've taught me as much as I've taught them.'

Theme 4: Contributing to Others

Participants commonly verbalised the desire to influence, teach and support younger people, and many mentioned having taught or being involved in schools previously. This may perhaps be related with the perception that changes in the world over time have negatively affected younger people, who present with negative behaviours and attitudes and are also having a difficult time. For a few participants, the desire to support also came from recalling the difficulties they faced in youth themselves.

P9: 'with the youngsters, I think it's very important for them to know that there are people out there who will sit and talk to them, who will listen to them. Because they're growing up in a world where everything is fast-moving and everybody is involved in their own things and haven't got time... I think it makes you reflect, because as a youngster I may well have gone through the same situation as they had. And you suddenly think, 'Oh gosh, I didn't have anyone to talk to about that' And I think from that point of view, it becomes very important to me to actually say, 'Right, you know, if we can help, we're here. I remember being like that''.'

IPs provided participants with an avenue to guide young people, despite the acknowledgement that some boundaries and self-censorship need to be observed. Participants were able to share their life experiences, and tap on their strengths and skills to mentor younger people.

P9: 'hopefully, through the sessions that we're doing, we can perhaps instil a little bit of [values and respect] without being regimental or dictatorial... They're not my family, they're not my kids, so I can't tell them, "You shouldn't be doing that" or "That's not right"... In their own family, maybe it is right!'

P7: 'I suppose 'cause I am an actress that she asked me to read these stories. Yes, I've had a lifetime as an actress, and I've got a little audience.'

Mentoring came in concrete ways such as sharing stories of the past or teaching specific skills, to broader things such as supporting their well-being or influencing their attitudes. A few participants also mentioned feeling positive from having a sense of purpose and being able to contribute to others.

P11: 'when they see me, I hope they see a friend who cares. I try to be as absolutely transparent as I can, to be vulnerable. And not to be afraid of being vulnerable, 'cause in many ways that's what you're trying to help them be.'

P8: 'I'd like them to be able to do things that maybe they wouldn't normally do, either not met at school or not be allowed to do at home, like jump around the room or shout at the top of their voices ... But also for myself, it makes me think, "Maybe I can do this after all, maybe I'm not a complete write-off. I've still got some sort of purpose in what I did for 70 years, it's not finished totally."'

These experiences were especially rewarding when participants were able to witness the impact of their efforts on younger people.

P9: 'we have a couple of hours a week discussing whatever the subject is, and they come away invigorated or wanting to do something. And when we come back next week, they're excited to show you what they've done, it's amazing, because you suddenly think, "They were listening, they were taking note, they did understand what we were saying" '

However, the desire to make a difference resulted in negative emotions for some participants. P10 experienced initial apprehension and fear about being part of the IP due to worries about having nothing to offer younger people, and P8 experienced frustration regarding the limitations in her ability to teach the younger people due to the nature of the programme.

Theme 5: Occupying Time Meaningfully

IPs provided a sense of routine and helped to structure time for those who participate(d) in it regularly. This also includes preparation time for some participants, e.g. doing homework or preparing materials for the next session.

P6: 'it's a nice project, pass a couple of hours on a Wednesday afternoon, two hours, it goes pretty quick as well. ... I'm not lonely. It is better than sitting around doing nothing.'

Furthermore, the nature of the IP activity is often aligned with participants' interests, including their passion for learning, who were thus not only passing time but doing it in

personally meaningful ways. Participants described IPs as fun, uplifting, and something they anticipate. One participant also cited an improvement in her mental health.

P8: 'I had a whale of a time and I enjoyed myself, something I've not done for a long time, doing staged stuff.'

P10: 'I used to not want to get out of bed every morning. I didn't want to talk to people, I didn't want to mix with people. And the only time I left the house was early in the morning to get shopping once a week, so that I didn't have to come in contact with people. But I just wake up on a Monday and think, "Hurry up, Thursday", 'cause I really really look forward to going... I don't mean this to sound dramatic, but I think if this hadn't had happened, I wouldn't be here.'

Response Validation

All 11 participants agreed to be sent a summary of the thematic analysis findings. Two people responded, one of whom did not have any specific comments. The other participant astutely observed that the findings represented opinions of 'one section of older people - well-educated, comfortably off, healthy, with no mental degeneration', and went on to suggest a follow-up study with 'people who are poor, in ill health, with minimum education and, above all, from different ethnic backgrounds'. Interestingly, he was able to deduce this despite the summary not containing any information about the sociodemographic or background information of participants.

Discussion

This qualitative study aimed to elucidate the experiences that older adult internet users have of IPs, with a focus on the psychological aspects. Overall, participants seemed to find their experiences of IPs rewarding, despite some perceived limitations to IPs, such as having to observe boundaries that may restrict relationships and exchanges. Through IPs, they were able to have social connections, contribute to others, fulfil their passion for learning, reconnect with their younger selves, and occupy their time meaningfully. The first three areas appeared to be referred to more and spoken about in more detail. It is perhaps unsurprising that social connections were commonly referred to, considering that most if not all the other benefits are necessarily built on the foundation of first having a relationship.

Diversity was observed in participants' experiences of IPs given actual differences in the IPs and possibly also what they personally find salient. As mentioned, participants had a more flexible definition of IPs and this may have contributed to a greater range of perspectives and experiences, but may also make it more difficult to compare this study to others looking at IPs in a more specific way.

Links to Existing Literature

The current findings are largely consistent with existing literature about the psychological benefits of IPs, and about positive ageing and well-being in older adulthood.

Social Connections

Previous studies indicated that older adults experienced increased social connectivity and decreased loneliness after participating in IPs (Knight et al., 2014; Krzeczowska et al., 2021; Park, 2014; Zhong et al., 2020). Being socially connected could have implications for older

adults' physical and mental health and mortality, especially as loneliness is a prevalent concern for older adults worldwide (Bekhet & Zauszniewski, 2012; Cacioppo et al., 2006; Ong et al., 2016). This may be especially consequential in recent times where Covid-19 has further exacerbated concerns of social isolation amongst older adults, and it has been suggested that this could be alleviated through digitally mediated interactions (MacLeod et al., 2021; Rodrigues et al., 2022). Considering their active internet use, the participants in the study are likely not as socially isolated as other older adults, but have still benefited socially from IPs.

Contributing to Others

Generativity, referring to the ability to influence younger generations as described within Erikson's psychosocial development model, has been a concept commonly cited in understanding the psychological impact of IPs on older adults (Kuehne & Melville, 2014; Villar & Serrat, 2014). Several reviews have made reference to generativity and other similar concepts such as feeling valued and respected when describing older adults' experiences of and benefits from IPs, and further asserted that it is one of the main factors determining the usefulness of IPs (Giraudeau & Bailly, 2019; Knight et al., 2014; Krzeczowska et al., 2021; Martins et al., 2019; Park, 2014; Zhong et al., 2020). Morgan et al. (2019) further illustrated that older adults value reciprocity and being able to contribute in social connections.

Reconnecting with Younger Selves

While the existing literature on IPs does not make any reference to older adults reconnecting with their younger selves, reminiscence and feeling youthful have been factors cited in relation to older adult well-being. Reminiscence has been moderately associated with greater life satisfaction and increased emotional well-being, through mechanisms such as

reinforcing meaning and coherence in one's life and identity (Bohlmeijer et al., 2007). It was also demonstrated that nostalgia is linked to feeling youthful, which can bring beneficial health outcomes (Abeyta & Routledge, 2016).

Learning

It has been shown that older adult participants experienced cognitive stimulation through IPs (Krzeczkowska et al., 2021). Contrary to views that older adults have a reduced capacity to learn, Mehrotra (2003) advocated for the provision of educational opportunities to support older adults in maintaining their interests, social connections, cognitive functioning and sense of meaning. Sakaki et al. (2018) asserted that curiosity could be an integral factor in positive ageing through its implications on cognitive, mental and physical health. Being exposed to new knowledge and experiences can also satisfy novelty-seeking needs that continue into older adulthood (Reio & Choi, 2004).

Occupying Time Meaningfully

A systematic review found that older adult participants were able to use their time more productively through IPs (Martins et al., 2019). Older adults who are engaged in leisure activities experience a better quality of life, especially if they are widowed, are not in regular contact with family and have functional impairments (Silverstein & Parker, 2002). Being engaged in certain types of leisure activities was also associated with better physical and mental health (Everard et al., 2000).

Limitations of Study

The limitations of the study are largely related to constraints regarding participant recruitment and convenience sampling. Due to restrictions and uncertainties related to the

Covid-19 pandemic, participant recruitment and the study itself had to be conducted online thus limiting the pool of potential participants. The scope and depth of the findings were likely also curbed by the relatively low participant numbers.

Negative experiences and views of IPs are likely to be downplayed in the current study. As research recruitment largely relied on organisations involved in facilitating IPs, individuals who could be contacted have likely either completed or continued to engage in IPs, and are thus likely to have had positive experiences. Given the practical challenges involved in recruiting participants who chose to disengage from IPs due to negative experiences, the next best alternative may be to explicitly ask participants for their negative experiences in future research.

Participants have homogeneous sociodemographic characteristics and are privileged in many aspects; they are mostly White, well-connected socially and likely have middle to high socioeconomic status and are relatively healthy. These characteristics may be typical of people who are more easily accessible for research, older adults who access the internet, or older adults who take part in IPs. In fact, these may be overlapping categories; research participation, internet use and IPs may all be manifestations of participants' desire to contribute and learn and the value they place on social connections. The use of Western, educated, industrialised, rich and democratic (WEIRD) samples in psychological research has received considerable attention, and casts doubt on the purported universality of the findings given the lack of attention to human diversity (Henrich et al., 2010; Rad et al., 2018). Though representativeness and generalisability are concerns more applicable in quantitative instead of qualitative research, the lack of diversity in the current sample has likely obscured certain perspectives.

Implications

Theoretical Implications and Future Research

The current findings contribute to existing literature about experiences that older adults have of IPs and extends it through considering their context. All the participants in the study are active internet users. Even though the internet fulfils certain functions similar to that of IPs based on participant accounts, particularly in terms of learning and maintaining social connections, IPs continue to be beneficial for older adult internet users. Both IPs and the internet may just be different means by which older adults exercise their discretion and choices, and the relevance of IPs is likely to continue in the digital age and for successive cohorts of older adults who would have greater exposure to and familiarity with the internet. The notion that older adults actively engage in choices and strategies to better their lives in response to constraints and change has been espoused in various studies and also within the Socioemotional Selectivity Theory and the Selective Optimisation with Compensation model (Baltes & Carstensen, 1996; Burnett-Wolle & Godbey, 2007; Carstensen et al., 2003; Chilvers et al., 2010; Freund, 2008; Silverstein & Parker, 2002). Furthermore, the effects of internet use are not always positive or straightforward, and can vary depending on the specific internet activity and personal characteristics (Castellacci & Tveito, 2018; Ihm & Hsieh, 2015; Stevic et al., 2021; Sum et al., 2008; Szabo et al., 2019). For instance, men are more likely to use the internet for instrumental and information needs compared to women (Schehl et al., 2019), and may thus be less likely to benefit socially from internet use.

The current findings hint at an intricate balance between stability and change in determining participants' well-being. As much as participants thrived on learning and novelty,

they also seemed to seek out continuity in terms of their identities and previous lifestyles. For instance, IPs tapped into participants' pre-existing values and roles, such as their love for learning and role as an educator. Drastic changes risk older adults being excluded from society and experiencing negative effects on their psychological well-being. However, a moderate amount of change may stimulate older adults through novelty (Reio & Choi, 2004) and also place them in a unique position of being able to share different perspectives and experiences, and paradoxically enables them to remain relevant. Based on the accounts of the participants, it seemed that younger people are captivated by older adults' experiences precisely because of their differences. Older adults within this study have perhaps been able to capitalise on the benefits of change while minimising its negative impact, due to their willingness to keep up with changes instead of resenting them.

As mentioned previously, the current findings are based on a WEIRD sample. In the words of a participant who reviewed the findings, perspectives have to be made more varied and balanced through the involvement of older adults who are 'poor, in ill health, with minimum education and, above all, from different ethnic backgrounds'. Indeed, there has been a lack of attention to how different sociodemographic factors can affect the experience and impact of IPs (Galbraith et al., 2015). Intergenerational interactions can be shaped by cultural ideas, such as Asian cultural expectations of these interactions being unequal due to the emphasis placed on filial piety (Lou & Dai, 2017). Interestingly, this is in contrast to the views of a few participants in the study who positioned themselves as equals within the intergenerational relationships. Young and Janke (2013) also found that non-White older adults voiced different concerns and benefits about participating in IPs. Future research should

examine the experiences of IPs for non-WEIRD samples, including how accessible these are to them.

Another area that is yet unclear and worth examining would be the comparison of intergenerational interactions within and outside the family in terms of quantity and quality, and how these similarly or differentially affect well-being (Zhong et al., 2020). Participants' accounts suggest that intergenerational interactions may be experienced differently in the familial setting compared to IPs; while non-familial intergenerational interactions are more transient and have more boundaries, these allow for greater flexibility and choice in how older adults engage with them. For example, older adults may choose not to continue with IPs if they do not find the interactions helpful, but would likely find it more difficult to do so in the familial setting. Non-familial intergenerational interactions may offer some similar benefits, e.g. social connectedness, but are likely less complicated than familial intergenerational interactions, which can potentially provide more comfort but are also more likely to engender conflict and tension. In fact, Fingerman et al. (2004) found that people tend to feel more ambivalent in close relationships and Birditt et al. (2009) further indicated that tensions are common within families, specifically in parent-child relationships. Future research should investigate intergenerational interactions within the family setting and IPs, and their effects. This may then help to generate recommendations on how best to bolster the psychological well-being of older adults, e.g. whether, when and how to recommend IPs compared to encouraging familial interactions.

Clinical Implications

The current and previous findings suggest that older adults can experience psychological benefits from participating in IPs, including reductions in social isolation and anxiety and depressive symptomatology, and increase in quality of life, self-esteem, life satisfaction, hope, generativity, a sense of meaning and being respected (Giraudeau & Bailly, 2019; Gualano et al., 2018; Knight et al., 2014; Krzeczowska et al., 2021; Lee et al., 2020; Lou & Dai, 2017; Martins et al., 2019; Park, 2014; Zhong et al., 2020). Some of these findings also seemed to extend to older adults with dementia and mild cognitive impairment (Baker et al., 2017; Galbraith et al., 2015; Gerritzen et al., 2020; Gualano et al., 2018).

Given that IPs can have positive effects even for participants who live relatively connected and enriched lives, they may be a viable option in efforts to prevent distress and enhance psychological health in older adults in general. Ageing brings changes and challenges that could threaten individuals' sense of identity and psychological well-being, and positive ageing thus involves a recalibration of values and lifestyles (Skerrett et al., 2021). For instance, the protective functions of work are lost following retirement, and include opportunities to contribute, social connections and a means to occupy time. IPs could be an alternative avenue for older adults to engage in these personally meaningful pursuits and values, and thus be tapped on in this recalibration process.

However, it is important to consider that IPs may not always be useful depending on individual preferences and needs, and should be offered as an option rather than recommended indiscriminately. For instance, they may perhaps be more useful for people without close and positive familial intergenerational interactions, given that older adults rarely experience intergenerational interactions outside of the family setting (Drury et al., 2017).

However, IPs may still be a useful complement for people with familial intergenerational interactions, due to the flexible and less complex nature of non-familial intergenerational relationships. It has been suggested that people tend to feel more ambivalent in close family relationships (Fingerman et al., 2004). In addition, a systematic review revealed that it is important for older adults to experience connectedness and reciprocity in social interactions within both close and peripheral relationships; peripheral relationships facilitate a sense of being part of society and protect against social loneliness, while love and intimacy from close relationships buffer against emotional loneliness (Bruggencate et al., 2017). Furthermore, IPs also offers the possibility of having in-person intergenerational interactions for those whose families do not live locally, which is a significant advantage as participants expressed a clear preference for in-person interactions over remote interactions.

There is an increasing recognition that older adults are an extremely heterogeneous group partly due to the increasing lifespan and have diverse needs (Bruggencate et al., 2017; Chilvers et al., 2010; Skerrett et al., 2021). The wide variety of IPs observed within this and previous studies, e.g. Krzeczowska et al. (2021), further increases the options available for older adults. It can helpfully accommodate the diversity among older adults and their needs, and should ideally be maintained and encouraged, though this may not necessarily lend itself well to research. In addition, it would be useful to still maintain some in-person IPs despite the tendency towards digitisation, as this allows IPs to be more accessible to older adults who do not use digital technology. In-person interactions could also be a unique advantage that IPs can offer to older adults whose familial interactions are largely digitally mediated.

Whilst honouring older adults' sense of agency, it is also pertinent not to underestimate the power of external factors beyond their control, such as financial difficulties and social isolation, that can limit their resources and opportunities (Skerrett et al., 2021). It is noted that participants in the study learnt of and could engage in internet use and IPs through their existing connections, e.g. people who recommended these to them. For some participants, their internet use also enabled them to continue engaging in IPs that had shifted to online platforms during the Covid-19 pandemic, suggesting that internet use itself may be a resource that increases the ability to access digitally mediated activities, including IPs, as these become more mainstream in future. Such positive feedback loops are unfortunately not available to older adults who are more isolated and do not have the same access to connections, information and resources. For instance, racial minorities may experience increased social isolation due to factors such as racism, poverty and inequalities (Morgan et al., 2019). Besides ensuring variety in IPs, it is also essential to work on increasing the visibility and accessibility of IPs to these older adults who may actually need it more. This may involve being more proactive in promoting IPs and reaching out to potential participants. Age is another key factor that restricts opportunities available to older adults. There is some evidence that factors and strategies useful for younger old adults may not be able to counteract the psychological impact attributed to physical decline in the late stages of older adulthood (Baltes & Carstensen, 1996; Baltes & Smith, 2003; Windsor et al., 2015).

Conclusions

IPs have the potential to positively impact older adults' psychological health through providing opportunities for social connections, contributing to others, fulfilling their passion for

learning, reconnecting with their younger selves, and occupying their time meaningfully. It can be offered as one of many options available to older adults to meet their diverse needs and better their lives. This can be further facilitated by lowering accessibility to and encouraging variety in IPs, while continuing to investigate factors that could influence the usefulness of IPs for this increasingly heterogeneous population.

References

- Abeyta, A. A., & Routledge, C. (2016). Fountain of youth: The impact of nostalgia on youthfulness and implications for health. *Self and Identity, 15*(3), 356-369.
- Age UK. (2016). *The internet and older people in the UK – Key statistics*. Retrieved from https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/reports-and-briefings/active-communities/rb_july16_older_people_and_internet_use_stats.pdf
- Age UK. (2019). *Estimating need in older people: Findings for England*. Retrieved from <https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/reports-and-briefings/active-communities/id204303-estimating-needs-report.pdf>
- Baker, J. R., Webster, L., Lynn, N., Rogers, J., & Belcher, J. (2017). Intergenerational programs may be especially engaging for aged care residents with cognitive impairment: Findings from the Avondale intergenerational design challenge. *American Journal of Alzheimer's Disease & Other Dementias, 32*(4), 213-221.
- Baltes, M. M., & Carstensen, L. L. (1996). The process of successful ageing. *Ageing and Society, 16*(4), 397-422.
- Baltes, P. B., & Smith, J. (2003). New frontiers in the future of aging: From successful aging of the young old to the dilemmas of the fourth age. *Gerontology, 49*(2), 123-135.
- Becker, G., Beyene, Y., Newsom, E., & Mayen, N. (2003). Creating continuity through mutual assistance: Intergenerational reciprocity in four ethnic groups. *Journal of Gerontology: Social Sciences, 58B*, S151–S159.

- Bekhet, A. K., & Zauszniewski, J. A. (2012). Mental health of elders in retirement communities: Is loneliness a key factor? *Archives of Psychiatric Nursing, 26*(3), 214-224.
- Berlau, D. J., Corrada, M. M., & Kawas, C. (2009). The prevalence of disability in the oldest-old is high and continues to increase with age: Findings from the 90+ study. *International Journal of Geriatric Psychiatry, 24*(11), 1217-1225.
- Birditt, K. S., Miller, L. M., Fingerman, K. L., & Lefkowitz, E. S. (2009). Tensions in the parent and adult child relationship: Links to solidarity and ambivalence. *Psychology and Aging, 24*(2), 287-295.
- Bohlmeijer, E., Roemer, M., Cuijpers, P., & Smit, F. (2007). The effects of reminiscence on psychological well-being in older adults: A meta-analysis. *Aging and Mental Health, 11*(3), 291-300.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.
- Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners*. London: SAGE.
- Braun, V., & Clarke, V. (2021a). Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Counselling and Psychotherapy Research, 21*(1), 37-47.
- Braun, V., & Clarke, V. (2021b). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology, 18*(3), 328-352.

- Breheny, M., Stephens, C., & Spilsbury, L. (2013). Involvement without interference: How grandparents negotiate intergenerational expectations in relationships with grandchildren. *Journal of Family Studies, 19*(2), 174-184.
- Bruggencate, T. T., Luijkx, K. G., & Sturm, J. (2017). Social needs of older people: A systematic literature review. *Ageing and Society, 38*(9), 1745-1770.
- Burnett-Wolle, S., & Godbey, G. (2007). Refining research on older adults' leisure: Implications of selection, optimization, and compensation and socioemotional selectivity theories. *Journal of Leisure Research, 39*(3), 498-513.
- Cacioppo, J. T., Hughes, M. E., Waite, L. J., Hawkley, L. C., & Thisted, R. A. (2006). Loneliness as a specific risk factor for depressive symptoms: Cross-sectional and longitudinal analyses. *Psychology and Aging, 21*(1), 140-151.
- Canedo-Garcia, A., Garcia-Sanchez, J. N., & Pacheco-Sanz, D. I. (2017). A systematic review of the effectiveness of intergenerational programs. *Frontiers in Psychology, 8*.
- Carstensen, L. L., Fung, H. H., & Charles, S. T. (2003). Socioemotional selectivity theory and the regulation of emotion in the second half of life. *Motivation and Emotion, 27*(2), 103-123.
- Castellacci, F., & Tveito, V. (2018). Internet use and well-being: A survey and a theoretical framework. *Research Policy, 47*(1), 308-325.
- Chilvers, R., Corr, S., & Singlehurst, H. (2010). Investigation into the occupational lives of healthy older people through their use of time. *Australian Occupational Therapy Journal, 57*, 24-33.

- Cotten, S. R., Anderson, W. A., & McCullough, B. M. (2013). Impact of internet use on loneliness and contact with others among older adults: Cross-sectional analysis. *Journal of Medical Internet Research, 15*(2), e39.
- Cotten, S. R., Ford, G., Ford, S., & Hale, T. M. (2014). Internet use and depression among retired older adults in the United States: A longitudinal analysis. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences, 69*(5), 763-771.
- Dong, X., Chang, E. S., Wong, E., & Simon, M. (2012). A qualitative study of filial piety among community dwelling, Chinese, older adults: Changing meaning and impact on health and well-being. *Journal of Intergenerational Relationships, 10*(2), 131-146.
- Drew, L. M., & Silverstein, M. (2007). Grandparents' psychological well-being after loss of contact with their grandchildren. *Journal of Family Psychology, 21*(3), 372-379.
- Drury, L., Abrams, D., & Swift, H. J. (2017). *Making intergenerational connections: What are they, why do they matter and how to make more of them*. London: Age UK.
- Everard, K. M., Lach, H. W., Fisher, E. B., & Baum, M. C. (2000). Relationship of activity and social support to the functional health of older adults. *Journal of Gerontology, 55B*(4), S208–S212.
- Fingerman, K. L., Hay, E. L., & Birditt, K. S. (2004). The best of ties, the worst of ties: Close, problematic, and ambivalent social relationships. *Journal of Marriage and Family, 66*, 792–808.
- Freeman, S., Marston, H. R., Olynick, J., Musselwhite, C., Kulczycki, C., Genoe, R., & Xiong, B. (2020). Intergenerational effects on the impacts of technology use in later life: Insights

- from an international, multi-site study. *International Journal of Environmental Research and Public Health*, 17, 5711.
- Freund, A. M. (2008). Successful aging as management of resources: The role of selection, optimization, and compensation. *Research in Human Development*, 5(2), 94-106.
- Galbraith, B., Larkin, H., Moorhouse, A., & Oomen, T. (2015). Intergenerational programs for persons with dementia: A scoping review. *Journal of Gerontological Social Work*, 58(4), 357-378.
- Gerritzen, E. V., Hull, M. J., Verbeek, H., Smith, A. E., & de Boer, B. (2020). Successful elements of intergenerational dementia programs: A scoping review. *Journal of Intergenerational Relationships*, 18(2), 214-245.
- Girardin, M., Widmer, E. D., Connidis, I. A., Castrén, A.-M., Gouveia, R., & Masotti, B. (2018). Ambivalence in later-life family networks: Beyond intergenerational dyads. *Journal of Marriage and Family*, 80(3), 768-784.
- Giraudeau, C., & Bailly, N. (2019). Intergenerational programs: What can school-age children and older people expect from them? A systematic review. *European Journal of Ageing*, 16(3), 363-376.
- Gualano, M. R., Voglino, G., Bert, F., Thomas, R., Camussi, E., & Siliquini, R. (2018). The impact of intergenerational programs on children and older adults: A review. *International Psychogeriatrics*, 30(4), 451-468.
- Hatton-Yeo, A. (2010). An introduction to intergenerational practice. *Working with Older People*, 14(2), 4-11.

- Henkin, N. Z., Burke, S., & Butts, D. M. (2012). Intergenerational practice in the United States: Past, present and future. *Quality in Ageing and Older Adults, 13*(4), 249-256.
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences, 33*, 61-135.
- Heo, J., Chun, S., Lee, S., Lee, K. H., & Kim, J. (2015). Internet use and well-being in older adults. *Cyberpsychology, Behavior, and Social Networking, 18*(5), 268-272.
- Ihm, J., & Hsieh, Y. P. (2015). The implications of information and communication technology use for the social well-being of older adults. *Information, Communication & Society, 18*(10), 1123-1138.
- Kessler, E. M., & Staudinger, U. M. (2007). Intergenerational potential: Effects of social interaction between older adults and adolescents. *Psychology and Aging, 22*(4), 690-704.
- Khvorostianov, N. (2016). "Thanks to the internet, we remain a family": ICT domestication by elderly immigrants and their families in Israel. *Journal of Family Communication, 16*(4), 355-368.
- Kinsella, K., & Velkoff, V. (2002). Living arrangements. *Aging Clinical and Experimental Research, 14*(6), 431-438.
- Knight, T., Skouteris, H., Townsend, M., & Hooley, M. (2014). The act of giving: A systematic review of nonfamilial intergenerational interaction. *Journal of Intergenerational Relationships, 12*(3), 257-278.

- Krzeczkowska, A., Spalding, D. M., McGeown, W. J., Gow, A. J., Carlson, M. C., & Nicholls, L. A. B. (2021). A systematic review of the impacts of intergenerational engagement on older adults' cognitive, social, and health outcomes. *Ageing Research Reviews, 71*, 101400.
- Kuehne, V. S., & Melville, J. (2014). The state of our art: A review of theories used in intergenerational program research (2003–2014) and ways forward. *Journal of Intergenerational Relationships, 12*(4), 317-346.
- Lee, K., Jarrott, S. E., & Juckett, L. A. (2020). Documented outcomes for older adults in intergenerational programming: A scoping review. *Journal of Intergenerational Relationships, 18*(2), 113-138.
- Leech, B. L. (2002). Asking questions: Techniques for semistructured interviews. *PS: Political Science & Politics, 35*(4), 665-668.
- Lou, V. W. Q., & Dai, A. A. N. (2017). A review of nonfamilial intergenerational programs on changing age stereotypes and well-being in East Asia. *Journal of Intergenerational Relationships, 15*(2), 143-158.
- MacLeod, S., Tkatch, R., Kraemer, S., Fellows, A., McGinn, M., Schaeffer, J., & Yeh, C. S. (2021). COVID-19 era social isolation among older adults. *Geriatrics, 6*, 52.
- Mahne, K., & Huxhold, O. (2015). Grandparenthood and subjective well-being: Moderating effects of educational level. *Journals of Gerontology: Social Sciences, 70*(5), 782-792.
- Martins, T., Midão, L., Martínez Veiga, S., Dequech, L., Busse, G., Bertram, M., . . . Costa, E. (2019). Intergenerational programs review: Study design and characteristics of intervention, outcomes, and effectiveness. *Journal of Intergenerational Relationships, 17*(1), 93-109.

- Mehrotra, C. M. (2003). In defense of offering educational programs for older adults. *Educational Gerontology, 29*(8), 645-655.
- Morgan, T., Wiles, J., Park, H.-J., Moeke-Maxwell, T., Dewes, O., Black, S., . . . Gott, M. (2019). Social connectedness: What matters to older people? *Ageing and Society, 41*(5), 1126-1144.
- Office for National Statistics. (2019). *Internet users, UK: 2019*. Retrieved from <https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/bulletins/internetusers/2019>
- Ong, A. D., Uchino, B. N., & Wethington, E. (2016). Loneliness and health in older adults: A mini-review and synthesis. *Gerontology, 62*(4), 443-449.
- Park, A. L. (2014). Do intergenerational activities do any good for older adults well-being? A brief review. *Journal of Gerontology & Geriatric Research, 3*(5), 181.
- Peters, R., Ee, N., Ward, S. A., Kenning, G., Radford, K., Goldwater, M., . . . Rockwood, K. (2021). Intergenerational programmes bringing together community dwelling non-familial older adults and children: A systematic review. *Archives of Gerontology and Geriatrics, 94*, 104356.
- Rad, M. S., Martingano, A. J., & Ginges, J. (2018). Toward a psychology of Homo sapiens: Making psychological science more representative of the human population. *Proceedings of the National Academy of Sciences of the United States of America, 115*(45), 11401-11405.
- Reio, T. G., Jr., & Choi, N. (2004). Novelty seeking in adulthood: Increases accompany decline. *Journal of Genetic Psychology, 165*(2), 119-133.

- Rodrigues, N. G., Han, C. Q. Y., Su, Y., Klainin-Yobas, P., & Wu, X. V. (2022). Psychological impacts and online interventions of social isolation amongst older adults during COVID-19 pandemic: A scoping review. *Journal of Advanced Nursing, 78*(3), 609-644.
- Ronzi, S., Orton, L., Pope, D., Valtorta, N. K., & Bruce, N. G. (2018). What is the impact on health and wellbeing of interventions that foster respect and social inclusion in community-residing older adults? A systematic review of quantitative and qualitative studies. *Systematic Reviews, 7*, 26.
- Sakaki, M., Yagi, A., & Murayama, K. (2018). Curiosity in old age: A possible key to achieving adaptive aging. *Neuroscience and Biobehavioral Reviews, 88*, 106-116.
- Schehl, B., Leukel, J., & Sugumaran, V. (2019). Understanding differentiated internet use in older adults: A study of informational, social, and instrumental online activities. *Computers in Human Behavior, 97*, 222-230.
- Schwarz, B., Albert, I., Trommsdorff, G., Zheng, G., Shi, S., & Nelwan, P. R. (2010). Intergenerational support and life-satisfaction: A comparison of Chinese, Indonesian, and German elderly mothers. *Journal of Cross-Cultural Psychology, 41*, 706-722.
- Silverstein, M., & Parker, M. G. (2002). Leisure activities and quality of life among the oldest old in sweden. *Research on Aging, 24*(5), 528-547.
- Skerrett, K., Spira, M., & Chandy, J. (2021). Emerging elderhood: Transitions from midlife. *Clinical Social Work Journal*.
- Smith, J., Borchelt, M., Maier, H., & Jopp, D. (2002). Health and well-being in the young old and oldest old. *Journal of Social Issues, 58*(4), 715-732.

- Snell, K. D. M. (2017). The rise of living alone and loneliness in history. *Social History, 42*(1), 2-28.
- Stevic, A., Schmuck, D., Matthes, J., & Karsay, K. (2021). 'Age matters': A panel study investigating the influence of communicative and passive smartphone use on well-being. *Behaviour & Information Technology, 40*(2), 176-190.
- Sum, S., Mathews, R. M., Hughes, I., & Campbell, A. (2008). Internet use and loneliness in older adults. *CyberPsychology & Behavior, 11*(2), 208-211.
- Szabo, A., Allen, J., Stephens, C., & Alpass, F. (2019). Longitudinal analysis of the relationship between purposes of internet use and well-being among older adults. *Gerontologist, 59*(1), 58-68.
- Tsai, F., Motamed, S., & Rougemont, A. (2013). The protective effect of taking care of grandchildren on elders' mental health? Associations between changing patterns of intergenerational exchanges and the reduction of elders' loneliness and depression between 1993 and 2007 in Taiwan. *BMC Public Health, 13*, 567.
- Villar, F., & Serrat, R. (2014). A field in search of concepts: The relevance of generativity to understanding intergenerational relationships. *Journal of Intergenerational Relationships, 12*(4), 381-397.
- Wenger, G. C. (1991). A network typology: From theory to practice. *Journal of Aging Studies, 5*(2), 147-162.
- Windsor, T. D., Curtis, R. G., & Luszcz, M. A. (2015). Sense of purpose as a psychological resource for aging well. *Developmental Psychology, 51*(7), 975-986.

World Health Organization. (2017). Mental health of older adults. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/mental-health-of-older-adults>

World Health Organization. (2021). Ageing and health. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>

Young, T. L., & Janke, M. C. (2013). Perceived benefits and concerns of older adults in a community intergenerational program: Does race matter? *Activities, Adaptation & Aging, 37*(2), 121-140.

Zeng, Y., Vaupel, J. W., Xiao, Z., Zhang, C., & Liu, Y. (2002). Sociodemographic and health profiles of the oldest old in China. *Population and Development Review, 28*(2), 251-273.

Zhong, S., Lee, C., Foster, M. J., & Bian, J. (2020). Intergenerational communities: A systematic literature review of intergenerational interactions and older adults' health-related outcomes. *Social Science & Medicine, 264*, 113374.

Part 3: Critical Appraisal

This critical appraisal contains my reflections from completing the systematic review and empirical study. There will be a discussion of how my past experiences shaped my views about research, and how these have changed and what I learnt from completing this thesis. While some of these reflections are specific to qualitative research, they are also relevant to my understanding of research more generally, including the role that subjectivity and practicalities play in the process.

Qualitative Research: Unique Complexities and Rewards in Relation to Quantitative Research

My expectations and experiences during this research process were shaped by my limited pre-doctorate research experience which were all related to quantitative empirical studies, thus making this my first foray into systematic reviews and qualitative research. Based on my limited understanding of research which was largely influenced by the quantitative research paradigm, I saw research as an objective pursuit intended to uncover truth. This view is not untrue but merely represents one of many perspectives of what research is or can be. My initial understanding is likely shared by many other students and researchers in the field of psychology, given that quantitative methods had a stronger influence in the development of psychological research and continues to dominate currently (Alise & Teddlie, 2010; Braun & Clarke, 2013, pp. 7-9). Concepts that are central to quantitative research, such as sample representativeness and generalisability, are not important or even applicable and should thus not be used as reasons for discrediting qualitative research. Conducting qualitative research, which comes with its own ideas and language, for the first time felt like a major paradigm shift and made the research process much more challenging. I had to be reminded by my supervisor

and also questioned myself on multiple occasions about the decisions I made within the research process and even down to the language that I used.

Delving into qualitative research gave me the opportunity and language to step back and be more aware of my underlying assumptions about research, specifically about ontology and epistemology. This has allowed me to have a broader understanding of research, including quantitative approaches, and the rationale for focusing on or doing certain things. It has also led to a deeper appreciation of the unique strengths and thus complementarity of the two major research traditions in advancing psychological understanding. It feels taken for granted and not spoken of in much depth, but quantitative research is largely guided by realism and positivism (Braun & Clarke, 2013, pp. 33-37). Consequently, emphasis is placed on reducing biasing factors, and quantitative studies generally seem quite unified in their underlying assumptions and criteria. In comparison, qualitative approaches seem more diverse and difficult to get a grasp on; in acknowledging and embracing the existence of multiple equally valid ontological and epistemological positions, the field of qualitative research also has to accommodate the resulting diversity in methods and approaches.

One of the biggest differences I found about doing qualitative research is the role of subjectivity. While quantitative research sees subjectivity as an obstacle and aims to minimise it, different qualitative methods view and approach subjectivity differently depending on their specific ontological and epistemological position. Qualitative approaches that adopt positions nearer to the positivistic end of the spectrum, such as the coding reliability thematic analysis approaches described by Braun and Clarke (2021a), tend to see subjectivity as inevitable but attempt to minimise its influence through methods such as involving multiple researchers in

data analysis. However, many other qualitative approaches take a different stance towards subjectivity. For instance, the reflexive thematic analysis approach that guided my empirical paper deems subjectivity as a resource rather than an obstacle to research (Braun & Clarke, 2021b). This approach to subjectivity is a unique and valuable contribution, but also makes the research process more complex. Qualitative research is still a systematic endeavour, but the criteria and guidelines tend to be less prescriptive than its quantitative counterpart to allow for the individual researcher's judgement and discretion. As a result, qualitative researchers are encouraged to be aware of and transparent with their ontological and epistemological views, and how these translate to decisions within the study (Braun & Clarke, 2006;2021b). A lot of responsibility is placed on researchers to explain their decisions, but this might not always be consistently upheld and can result in a lack of clarity in terms of the study flow and design. I felt this acutely when attempting to evaluate the quality of qualitative studies in the systematic review. While the appraisal tool does lay out the criteria, these guidelines feel vague and not straightforward. For example, one of the criteria within the Mixed Methods Appraisal Tool (Hong et al., 2019) is 'coherence between qualitative data sources, collection, analysis and interpretation'. Though I tried to apply the criterion as best and as consistently as I could, it was difficult to ascertain this if the authors were not explicit about their research process, especially given my limited experience with qualitative research.

Being introduced to a different relationship with subjectivity also made me reflect on its role in research more generally. This is especially so for approaches and methodologies that do not make any reference to subjectivity, which can result in the risk of assuming more objectivity than there actually is and can affect the interpretation of findings. An example would be the

systematic review, which emphasises and prides itself on its transparency and replicability (Siddaway et al., 2019). Based on my current experience, while a systematic review is methodical in the steps and criteria that are laid out, the researcher still has to exercise judgement and discretion in many moment-to-moment decisions, such as during the screening and quality appraisal process.

Another major feature of qualitative approaches concerns the nature of the data and the analysis process which is quite overwhelming and time-consuming. Qualitative research relies heavily on language and meaning, and stresses the importance of context and depth (Braun & Clarke, 2013, p. 3). From my experience, a lot of data is collected in quantitative research but this is funnelled down relatively quickly in the data analysis process using statistical methods. In contrast, qualitative data may appear deceptively sparse, e.g. in the comparably smaller number of participants, but the richness of the data can feel as much as or even more than a quantitative study. For instance, each one-hour interview in my empirical study produced a transcript that is more than 10 pages long, and it can be possible for each line to become a data point in the coding process. In addition, the amount of qualitative data can exponentially increase when accounting for the researcher's reflections and memos, and the various layers of depth within the data, e.g. semantic vs. latent coding, looking within vs. across participants, and themes vs. codes. Contrary to expectations, the subjectivity in qualitative research and the immense dataset possibly necessitates a greater need for a methodical and organised approach compared to quantitative approaches.

Transcribing is another unique aspect of qualitative research given the nature of its data, and again is more complex and involves more decisions than I imagined. I had chosen to

do manual transcription on my own to facilitate the process of familiarising and immersing myself in the data, which is a vital step in the thematic analysis approach (Braun & Clarke, 2006). Unexpectedly, I also gained a deeper appreciation of language and the complexity of communication that we too easily take for granted. Transforming speech into a written format is an intricate process where information is both lost and gained. Nuance is lost because a transcript cannot capture nonverbal cues such as gestures, tone and volume, and made me realise their value in how we communicate. Nonverbal cues can express a lot of information such as personal characteristics, affect and attitude, especially when integrated with verbal communication and other factors (Hall et al., 2019). However, information is also gleaned when converting speech into prose. I realised that I was usually only able to understand and remember the gist of what was said during the interview, and could only access the details through transcribing and the transcripts. Transcribing also made me realise the differences between verbal and written communication; it was a surprise to find out that much of our verbalisations tend to run continuously and are peppered with truncations and false starts, and it is not obvious as to where the pauses are and when to punctuate the sentences. Though this made transcribing more challenging and frustrating at times, I think this is testament to our extraordinary ability to understand and parse speech.

My Perspectives of Research and the Empirical Study

The process of working on my empirical paper also made me think a lot more about my ontological and epistemological position with regard to psychological research, and how my pre-existing views and assumptions shaped the study. I find it difficult to put a label on my specific position except for describe it as being situated between relativism and realism.

I believe that the complexity of the human mind and behaviour does not lend itself well to measurement and standardisation. Any attempts to understand the human experience are necessarily filtered through some extent of subjectivity, and results in variation and multiple equally valid truths. Psychology relies heavily on self-report measures to ascertain what people feel and think; this can be useful in many situations but the validity is subject to factors such as the individual's level of awareness and the fallibility of language (Haefffel & Howard, 2010). Attempts to measure, categorise and standardise also assume that our internal experiences are similar and that there is a direct correlate between language and aspects of our internal experiences. However, it is difficult or perhaps even impossible to ascertain if someone's '4' on a 9-point scale of happiness feels the same as another person's. On the other hand, I also subscribe to some degree of realism in believing that there can be patterns and commonalities owing to our shared biological and social make-up. This can be further extrapolated to imply that participants' experiences can provide a reasonable approximation of the experiences of other people in similar contexts.

The nature of qualitative research also made me think about my position and assumptions about the specific population and topic of study. Growing up, I was frequently in the company of older people, and was fortunate to have spent time with all four grandparents and even my maternal great-grandmother. In the Singaporean Chinese culture, it is almost taken for granted that older people want to stay in contact with their families and be part of their grandchildren's lives, and that these familial relationships are positive experiences. Many older adults are actively involved in caring for their grandchildren who are usually part of dual-income families, and sometimes even live together in a three-generation household. In fact, the

government actively encourages families to stay in touch by providing public housing grants for people looking to live near or with their parents (Government of Singapore, 2022). I have always been a recipient of the wisdom and calmness from the older adults in my life, and it made me curious about what it felt like to be on the other end of these interactions. It was also quite fascinating to learn about intergenerational programmes given that familial intergenerational interactions are commonplace in my culture, and it made me wonder about the reasons why older adults participate in these programmes.

Some of my existing ideas about older adults and familial intergenerational interactions have been questioned through working on the systematic review and empirical study. In contrast to my initial assumptions and expectations, the findings suggest that familial intergenerational interactions may not always be positive, and non-familial intergenerational interactions may benefit some older people in a different and perhaps more straightforward manner. In addition, many older adults in my personal life tend to express attitudes consistent with a desire to pull away from society and its constant changes. I have heard on multiple occasions about them being too old to learn new things or too tired to travel to new places, despite some regrets that they were unable to do these things previously due to their responsibilities and constraints. This made me feel quite worried about eventually becoming an older adult myself because it seemed to mean a drastic shrinking of the world from losing the ability or interest to do things. However, it has been inspiring to witness the passion that my participants expressed towards life and other people, and how they were still able to maintain their interests in spite of the common challenges in older adulthood. Participants were not just begrudgingly going along with change, but taking it in their stride and even rejoicing in some of

the opportunities and older adulthood in itself. I wondered whether the older adults in my personal life just happen to be a skewed sample, or this could perhaps be a manifestation of cultural differences between Singaporean Chinese and White British older adults. There is some indication that the grandparent role is viewed and experienced differently in Western and non-Western cultures (Hossain et al., 2018). For instance, traditional Chinese culture confers power and respect to older people through concepts such as filial piety, which would arguably provide older adults with a sense of value and generativity, but these values may be fading in recent times due to cultural and demographic changes (Mjelde-Mossey, 2007). However, this may be a simplistic account that does not reflect people's ability to adapt their familial practices in response to changes (Croll, 2010). Unfortunately, I was unable to examine cultural influences due to the homogeneous nature of my sample, but believe that the influence of cultural differences and changes in intergenerational interactions is an area that should be further explored in research.

The Limit of Practicalities

The research process is fraught with many practical challenges that I do not think are adequately acknowledged, which I also had to navigate in this thesis with the support of my supervisor. Regardless of whether it is a quantitative or qualitative approach, the guidelines for producing good-quality research tend to be quite idealistic. If these challenges appear to be the norm rather than the exception, I think it warrants more attention in coming up with guidance as to how to conduct good-enough research despite or considering these limitations. This can make research less daunting and stressful especially for novice researchers.

Research guidelines often call for the involvement of multiple researchers to highlight possible blind spots or to minimise bias. For instance, it would be ideal for at least two people to be involved in both study selection and quality appraisal in a systematic review. However, this is not always possible depending on the resources available, i.e. time, human resource and funding. A well-funded research team comprising multiple members with research expertise may be able to accomplish this easily, but this is quite challenging in many other situations, including a student research project with minimal resources. Fortunately, my university and course recognise this and does not require dual ratings for the systematic review.

As much as the Covid-19 pandemic was a contextual factor affecting the participants in my empirical study, it also significantly shaped the course of my research project due to the practical limitations it imposed. I was originally supposed to investigate the experiences of older adults participating in a specific in-person school-based intergenerational programme. However, this was made impossible as the programme stopped during the pandemic, given government guidance for older adults to shield and schools to close. We had to go back to the drawing board to design a study that could incorporate my interest in older adults and intergenerational programmes. Given the need for social distancing and uncertainties around the pandemic, we also had to consider a project that could be possible without in-person interactions. Internet use was thus brought into the picture, as it would address the feasibility but is also a contextual factor worth investigating.

The changes in the project also meant that I was unable to access participants through a dedicated programme or organisation, and had to reconsider my strategy to recruit participants. Recruitment for the study was challenging; it was not easy to find organisations

who were willing to be involved, and the rate of recruitment was low even amongst those who provided their assistance. I received mixed opinions as to the size of my potential participant pool; while I was sometimes reassured that many older adults are internet users, there were also others who mentioned that the participants of their intergenerational programmes tend not to be internet users. While I expected that only a small number of older adults would fall within the intersection of internet use and intergenerational programme participation, I started to doubt if the numbers were much smaller than I expected and was concerned about getting adequate participant numbers. In order to address this, I approached multiple different organisations, relied on convenient and snowball sampling, and was also more flexible with the inclusion and exclusion criteria, though some of these decisions would likely be frowned upon by guidelines. For instance, a 64-year-old participant was included despite not meeting the 65-year-old cutoff, because we deemed that the benefits of having access to his perspectives were more important than upholding an arbitrary age cutoff for defining older adulthood.

The nature of the recruitment and study being online likely also influenced the participant pool and characteristics. As detailed in the empirical study, my sample was a White, Educated, Industrialised, Rich and Democratic (WEIRD) sample. I was not expecting the sample to be extremely diverse, but the homogeneity in the sample characteristics was quite surprising and difficult to attribute to any specific reason. If given the chance to improve on the project, I would be more intentional in reaching out to organisations serving minorities and the less privileged. While the sample characteristics were homogeneous, there was a lot of variation in the experiences of intergenerational programme across participants. This was a result of convenient sampling and not relying on specific organisations or programmes as gatekeepers.

Based on the experiences they described, it can be inferred that many participants defined 'intergenerational programmes' as activities that allowed mingling of people of all ages, including middle-aged adults in their 30s and 40s and are not limited to younger people per se, and even if they are not specifically designed for this. It made me question if we have been too fixated with defining and conceptualising what intergenerational programmes look like, even though these may not have any real significance for older adults. While the increased flexibility in defining intergenerational programmes may complicate and broaden the findings, I think that it might be a more accurate reflection of the experiences of older adults. This area can perhaps be extended through future research exploring how 'intergenerational' is defined and experienced by older adults.

Conclusion

Undertaking the systematic review and qualitative study has allowed me the opportunity to learn and reflect about these specific approaches and research more generally, and has once again reinforced my sense of how complicated and diverse research can be. However, this is not necessarily negative. Due to the complexities in studying the human mind and behaviour, I see value in having a variety of approaches and data, in the hopes that we can gather as much information as possible to piece together a whole that is more than the sum of its parts.

References

- Alise, M. A., & Teddlie, C. (2010). A continuation of the paradigm wars? Prevalence rates of methodological approaches across the social/behavioral sciences. *Journal of Mixed Methods Research, 4*(2), 103-126.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.
- Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners*. London: SAGE.
- Braun, V., & Clarke, V. (2021a). Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Counselling and Psychotherapy Research, 21*(1), 37-47.
- Braun, V., & Clarke, V. (2021b). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology, 18*(3), 328-352.
- Croll, E. J. (2010). The intergenerational contract in the changing Asian family. *Oxford Development Studies, 34*(4), 473-491.
- Government of Singapore. (2022). Proximity housing grant (families). Retrieved from <https://www.hdb.gov.sg/cs/infoweb/residential/buying-a-flat/flat-and-grant-eligibility/couples-and-families/proximity-housing-grant-families>
- Haefel, G. J., & Howard, G. S. (2010). Self-report: Psychology's four-letter word. *The American Journal of Psychology, 123*(2), 181-188.
- Hall, J. A., Horgan, T. G., & Murphy, N. A. (2019). Nonverbal communication. *Annual Review of Psychology, 70*, 271-294.

- Hong, Q. N., Pluye, P., Fabregues, S., Bartlett, G., Boardman, F., Cargo, M., . . . Vedel, I. (2019). Improving the content validity of the mixed methods appraisal tool: A modified e-Delphi study. *Journal of Clinical Epidemiology*, *111*, 49-59.
- Hossain, Z., Eisberg, G., & Shwalb, D. W. (2018). Grandparents' social identities in cultural context. *Contemporary Social Science*, *13*(2), 275-287.
- Mjelde-Mossey, L. A. (2007). Cultural and demographic changes and their effects upon the traditional grandparent role for Chinese elders. *Journal of Human Behavior in the Social Environment*, *16*(3), 107-120.
- Siddaway, A. P., Wood, A. M., & Hedges, L. V. (2019). How to do a systematic review: A best practice guide for conducting and reporting narrative reviews, meta-analyses, and meta-syntheses. *Annual Review of Psychology*, *70*, 747-770.

Appendices

Appendix A

List of Search Terms and Subject Headings

Key concepts	Internet use	Older adults	Intergenerational interactions	Psychological health
	internet Computer* Smartphone* or “smart phone*” or smart-phone* Tablet computer* Computer-mediated communication* Social media Social network* Online communicat* Online communit* WhatsApp Youtube Google Snapchat Facebook Twitter Tiktok Spotify Tumblr Skype Netflix WeChat Linkedin Instagram Email E-mail Social technolog*	Later life Elderly Seniors Older people Aging Ageing Aged Geriatric* Senior citizen* Grandparent* Grandfather* Grandmother*	Intergeneration* Grandchild* <u>Ovid</u> Intergeneration* ADJ16 (family or families or familial) <u>Scopus</u> Intergeneration* W/15 (family or families or familial) <u>Web of Science</u> Intergeneration* near/15 (family or families or familial)	Mental health Mental illness Depression Anxiety Psychological well-being Well-being (would cover psychological and subjective) Wellbeing Well being Life satisfaction Quality of life

	<p>Online shop* Online gam* Online video* eCommerce Digital technolog* Website* Information and communication technolog* Information technolog* Communication technolog* World wide web</p>			
Subject Headings	<p><u>PsycINFO</u> internet/ exp Computers/ exp Computer Usage/ Information and Communication Technology/ exp Digital Technology/ <u>MEDLINE</u> exp internet/ exp Cell Phone/ Online social networking/ Mobile applications/</p>	<p><u>PsycINFO</u> Older Adulthood/ Gerontology/ Grandparents/ exp Geriatrics/ <u>MEDLINE</u> exp Aged/ Grandparents/</p>	<p><u>PsycINFO and MEDLINE</u> Intergenerational relations/ Family relations/</p>	<p><u>PsycINFO</u> Mental Health/ exp Mental Disorders/ Psychopathology/ Psychiatric symptoms/ exp Well Being/ Healthy Aging/ Life Satisfaction/ Quality of Life/ exp Geropsychology/ Positive Psychology/ Clinical Psychology/ <u>MEDLINE</u> Mental Health/ exp Mental Disorders/ Psychopathology/ Psychology, Positive/ Quality of Life/ Healthy Aging/ Geriatric Psychiatry/ Psychology, Clinical/</p>

<p>Expert Searches</p>		<p><u>MEDLINE Expert Search filter</u> exp aged/ or exp geriatrics/ or exp geriatric nursing/ or (centarian* or centenarian* or elder* or eldest or frail* or geriatri* or nonagenarian* or octagenarian* or octogenarian* or old age* or older adult* or older age* or older female* or older male* or older man or older men or older patient* or older people or older person* or older population or older subject* or older woman or older women or oldest old* or senior* or senium or septuagenarian* or supercentenarian* or very old*).ti,ab,kf.</p>		
-------------------------------	--	--	--	--

Appendix B

Short Excerpts from Bracketing Interview Transcript

R: Thank you for telling me Shin about - sounds like both starting from that position of thinking of the literature but also your own personal experiences and reflections about intergenerational support linked to different social groups, ethnicities etcetera. How do you think that might influence how you either approach the research or maybe what you think you might find when you are looking at the data perhaps?

17:10

ST: I guess with that idea that family connections will be beneficial for somebody and is something that is desirable – I feel like that might be an assumption that I might need to check myself on when I am asking or interacting with participants or looking at the data, because that stems from my own understanding of how those connections should look like. I don't think it is necessarily the case for everybody because - I mean for some people maybe the family connections can be quite damaging if it is quite a strenuous relationship despite how I understand family relationships. I think that's something that I would want to be a bit careful of, in terms of how I couch certain questions or how I look at certain things that the participants say.

R: So kind of checking in on that - from your own experience, it sounds like intergenerational - has been really positive (???). That might be the case for many people but it may also not be the case for people, so how we approach that in the interviews and the data, checking in about the way you're asking questions or what you're looking for – sounds to be something you've been thinking about.

18:42

ST: I guess the other thing that I'm also thinking about is - on one hand, this acknowledgement that human experience is generally universal to some extent, but I think in some other ways, there could be a bit of difference in terms of how we understand certain things depending on our cultural background. I don't know what kind of participants I will get yet, it could really be a mix of people - there could be people who grew up here, who were in the UK their whole life. There could be migrants who grew up in a different country and came here. And I'm thinking - it's something I am still thinking about - about how do I ask questions and be curious without actually assuming what they know or what they say or what they think is similar to what I think about certain topics - in terms of family connections, interactions with young people, their thoughts about ideas of contributing to society, or intergenerational interactions. How to not be intrusive but at the same time still remain curious and not assume things - that's something I have also been thinking about, especially as there could potentially be so many differences between me and the participants. Age is definitely one big difference, and ethnicities. It could be gender and how do I keep these things in mind without overwhelming the process - yeah I don't know.

Appendix C

Approval Documents for Research Study

Approval Email from UCL Data Protection Office

Lau, Shi Ting

From: Crouch, Spenser on behalf of Finance.Data Protection
Sent: Thursday, June 3, 2021 8:12 AM
To: Lau, Shi Ting
Cc: ISD.Itforslms-IG-Lead
Subject: 20210603 Email confirm Z6364106 2021 06 32
Attachments: Participant_information_sheet.docx; Study_advert.docx; DPIA.pdf; DPIA_Information_flow.pptx; Participant_consent_form.docx; research_registration_form_for_ucl_rec_approval_v1.3-1.doc

Follow Up Flag: Follow up
Flag Status: Flagged

Hi,

Thank you for your application to register with the Data Protection Office. Please note, I have made some minor amendments to the privacy notice text contained within the attached participant information sheet, and ethical informed consent form. Please consider, update and return for our records.

With this action in mind, I am pleased to confirm that this project is now registered under, reference No Z6364106/2021/06/32 health research in line with UCL's Data Protection Policy.

You may quote this reference on your Ethics Application Form, or any other related forms.

You should make arrangements as early as possible for the secure long-term storage of your data, taking into account any specific requirements of your department or funder. UCL staff and PhD students can use the [UCL Research Data Repository](#) while undergraduate and Masters students may want to ask their supervisors about the [Open Education Repository](#). The Research Data Management team can be contacted at lib-researchsupport@ucl.ac.uk.

UCL staff can contact the Records Office records.office@ucl.ac.uk to arrange for the long-term secure storage of their research records.

For data protection enquiries, please contact the data protection team at data-protection@ucl.ac.uk

For ethics enquiries, please contact the ethics team at ethics@ucl.ac.uk.

Regards,

Spenser Crouch
Data Protection & Freedom of Information Administrator & Chief Web Editor
Legal Services, UCL | Gower Street | London | WC1E 6BT
Email: s.crouch@ucl.ac.uk Data Protection: data-protection@ucl.ac.uk FOI: foi@ucl.ac.uk
Telephone: 0203 108 8764 (internal 58764)

General enquiries. Please first check our [FAQs](#) as your question is likely to be answered there. If your question isn't answered in the FAQs, we aim to respond to all enquiries within 3 working days.

Please note I am currently working from home and best contacted via email.

Letter of Approval from Research Ethics Committee

UCL RESEARCH ETHICS COMMITTEE
OFFICE FOR THE VICE PROVOST RESEARCH



02/09/2021

Dr Georgina Charlesworth
Division of Psychology and Language Sciences (PALS)
Clinical, Educational and Health Psychology
Faculty of Brain Sciences
UCL

Cc: Shi Ting Lau

Dear Dr Charlesworth,

Notification of Ethics Approval

Project ID/Title: 19837/001: The role of intergenerational programmes in the psychological well-being of Internet users in later life

Further to your satisfactory responses to the reviewer's comments, I am pleased to confirm that your study has been ethically approved until **02/09/2022**.

Ethical approval is subject to the following conditions:

Notification of Amendments to the Research

You must seek Chair's approval for proposed amendments (to include extensions to the duration of the project) to the research for which this approval has been given. Each research project is reviewed separately and if there are significant changes to the research protocol you should seek confirmation of continued ethical approval by completing an 'Amendment Approval Request Form' <http://ethics.grad.ucl.ac.uk/responsibilities.php>

Adverse Event Reporting – Serious and Non-Serious

It is your responsibility to report to the Committee any unanticipated problems or adverse events involving risks to participants or others. The Ethics Committee should be notified of all serious adverse events via the Ethics Committee Administrator (ethics@ucl.ac.uk) immediately the incident occurs. Where the adverse incident is unexpected and serious, the Joint Chairs will decide whether the study should be terminated pending the opinion of an independent expert. For non-serious adverse events the Joint Chairs of the Ethics Committee should again be notified via the Ethics Committee Administrator within ten days of the incident occurring and provide a full written report that should include any amendments to the participant information sheet and study protocol. The Joint Chairs will confirm that the incident is non-serious and report to the Committee at the next meeting. The final view of the Committee will be communicated to you.

Office of the Vice Provost Research, 2 Taviton Street
University College London
Tel: +44 (0)20 7679 8717
Email: ethics@ucl.ac.uk
<http://ethics.grad.ucl.ac.uk/>

Final Report

At the end of the data collection element of your research we ask that you submit a very brief report (1-2 paragraphs will suffice) which includes in particular issues relating to the ethical implications of the research i.e. issues obtaining consent, participants withdrawing from the research, confidentiality, protection of participants from physical and mental harm etc.

In addition, please:

- ensure that you follow all relevant guidance as laid out in UCL's Code of Conduct for Research: www.ucl.ac.uk/srs/governance-and-committees/research-governance
- note that you are required to adhere to all research data/records management and storage procedures agreed as part of your application. This will be expected even after completion of the study.

With best wishes for the research.

Yours sincerely




Professor Michael Heinrich
Joint Chair, UCL Research Ethics Committee

Appendix D

Participant Information Sheet and Consent Form

LONDON'S GLOBAL UNIVERSITY



Participant Information Sheet

You should have been emailed a PDF copy of this information sheet that you can keep and refer to.

Title of Study: The role of intergenerational programmes in the psychological well-being of Internet users in later life

Department: Clinical, Educational and Health Psychology, UCL Division of Psychology and Language Sciences

Name and Contact Details of the Researcher: Shi Ting Lau (shi.lau.19@ucl.ac.uk)

Name and Contact Details of the Principal Researcher: Dr Georgina Charlesworth (g.charlesworth@ucl.ac.uk)

This study has been approved by the UCL Research Ethics Committee. Project ID number: 19837/001

1. Introduction

We would like to invite you to take part in a research study. Please take as much time as you need to decide whether or not you wish to take part; it is important that you understand why the research is being done and what participants will be asked to do. Please read the following information carefully, discuss with others if you wish, and ask us if you want more information. Thank you for taking time to read through this document.

2. What is the purpose of the study?

Intergenerational programmes are activities that allow people from different generations to interact with each other; these usually involve older people interacting with younger people ranging from babies to university students. This study aims to explore how participating in intergenerational programmes impact the psychological well-being of older Internet users, and is estimated to end in September 2022.

3. Why have I been invited?

You have been invited to participate in this study as you:

- Are 65 years old and above
- Have experience of participating in an intergenerational programme as an older adult participant (currently and/or in the past), and are able to remember these experiences
- Use the Internet, i.e. can access a device connected to the Internet (e.g. smartphone or computer)
- Can receive/send emails

We estimate that the study will have a total of 15 participants, but this number may increase if we require additional data.

4. Do I have to take part?

It is up to you to decide whether or not to take part in this study. You can also withdraw at any time up until 22nd April 2022 without giving a reason, and this will not have any implications for you. If you decide to withdraw, you will be asked what you wish to happen to the data you have provided up to that point.

Besides the criteria mentioned above (in point 3), we also require that participants:

- Are able to understand and use the information provided to decide whether to participate, and to communicate that decision to us
- Are open to being interviewed on Microsoft Teams (an online videoconferencing platform) – we can guide you through the process if you are not familiar

5. What will I have to do if I decide to take part?

Firstly, you will be asked for your consent to participate in the study through an online form; your consent will be indicated through your electronic signature (which you will sign with your mouse, or your finger on a touch screen). After consenting to the study, you will be directed to the second part of the form that asks for some background information, e.g. demographic information including ethnicity and information about your social network and Internet use. The entire online form would take approximately 10 to 15 minutes to complete.

Secondly, you will take part in an online individual interview on Microsoft Teams, which will last up to an hour. You will be asked about your experiences of using the Internet and the intergenerational programmes you participate(d) in. If you are interested in helping to review the study results, these would be sent to you at a later stage, and your comments may be used to further refine the study write-up.

6. Will I be recorded and how will the recorded media be used?

The interviews will be audio-recorded using a password-protected audio recorder to allow information to be captured and analysed. The recordings will be destroyed once the interview transcripts have been typed out and checked for accuracy.

7. Will my participation in this project be kept confidential?

All the information that we collect from you will be kept confidential and only be accessible to the research team. However, if there is any indication of harm to yourself or others, we would have to alert the relevant authorities, and will discuss this with you where possible.

All research data will be encrypted, password-protected and stored in UCL's secure servers (UCL N: drive and OneDrive) at the earliest possible opportunity. Your personal identifiers (i.e. name and contact information) will be stored separately from the other data you provide. At the end of this research study, the data will be anonymised (i.e. all personal identifiers will be destroyed) and stored in a UCL secure archive for up to 10 years. The data will not be shared with people outside of the research team, transferred outside of the European Economic Area or used for other projects.

8. What are the possible risks and benefits of taking part?

We do not foresee that you will experience any disadvantages and/or risks from participating in this study. While there are no immediate benefits of taking part, we hope that the study will be enjoyable. We hope that the findings are of use in developing intergenerational programmes in the future. In appreciation of your participation, we will also donate £7.50 to Age UK for the completion of the interview.

9. What if something goes wrong?

If you have any complaints about any aspect of the way in which you were approached or treated in this study, please contact the Principal Researcher Dr Georgina Charlesworth (g.charlesworth@ucl.ac.uk). If you feel that your complaint has not been handled satisfactorily, you can contact the Chair of the UCL Research Ethics Committee (ethics@ucl.ac.uk).

10. What will happen to the results of the research project?

The data you provide will be used for writing up a doctoral thesis, which may be published in a research journal or presented at conferences. We would include verbatim quotations from the interviews, but you will not be identified in any of these publications. If you wish to receive a copy of the final report, you can contact the researcher when the study ends.

11. Who is organising and funding the research?

UCL is sponsoring and funding this study.

12. Contact for further information

For further information about the study, please contact Shi Ting Lau (shi.lau.19@ucl.ac.uk).

13. Data Protection Privacy Notice

The data controller for this project will be University College London (UCL). The UCL Data Protection Officer provides oversight of UCL activities involving the processing of personal data, and can be contacted at data-protection@ucl.ac.uk

This 'local' privacy notice sets out the information that applies to this particular study. Further information on how UCL uses participant information can be found in our 'general' privacy notice, which can be accessed here:

<https://www.ucl.ac.uk/legal-services/privacy/ucl-general-research-participant-privacy-notice>

The information that is required to be provided to participants under data protection legislation (GDPR and DPA 2018) is provided across both the 'local' and 'general' privacy notices.

The categories of personal data used will be as follows: name, contact details (email address and/or phone number) and ethnicity.

The lawful basis that would be used to process your personal data will be performance of a task in the public interest. The lawful basis used to process special category personal data (i.e. ethnicity) will be for research purposes.

Your personal data will be processed so long as it is required for the research project. If we are able to anonymise or pseudonymise the personal data you provide, we will undertake this and will also endeavour to minimise the processing of personal data wherever possible.

If you are concerned about how your personal data is being processed, or if you would like to contact us about your rights, please contact UCL in the first instance at data-protection@ucl.ac.uk.

Thank you for reading this information sheet and for considering to take part in this research study.



Participant Consent Form

Please complete this form after you have read the Information Sheet.

Title of Study: The role of intergenerational programmes in the psychological well-being of Internet users in later life

Department: Clinical, Educational and Health Psychology, UCL Division of Psychology and Language

Name and Contact Details of Researcher(s): Shi Ting Lau (shi.lau.19@ucl.ac.uk)

Name and Contact Details of Principal Researcher: Dr Georgina Charlesworth (g.charlesworth@ucl.ac.uk)

Contact Details of UCL Data Protection Officer: Alexandra Potts (data-protection@ucl.ac.uk)

This study has been approved by the UCL Research Ethics Committee. Project ID number: 19837/001

Thank you for considering to take part in this research. If you have any questions arising from the Information Sheet, please clarify with the researcher before you decide whether to participate. You should have been emailed a blank PDF copy of this Consent Form that you can keep and refer to.

I confirm that I meet all of the following criteria for participation:

Tick box	
<input type="checkbox"/>	At least 65 years old
<input type="checkbox"/>	Able to understand and use the information provided to decide whether to participate, and to communicate that decision
<input type="checkbox"/>	Have experience of participating in an intergenerational programme as an older adult participant (currently and/or in the past), and am able to remember these experiences
<input type="checkbox"/>	Use the Internet, i.e. can access a device connected to the Internet (e.g. smartphone or computer)
<input type="checkbox"/>	Can receive/send emails
<input type="checkbox"/>	Am open to being interviewed on Microsoft Teams (an online videoconferencing platform) – we can guide you through the process if you are not familiar

<input type="checkbox"/>	
1.	I consent to participate in the study.
2.	I confirm that I have read and understood the Information Sheet for the above study, and have had the opportunity to ask questions if I had any.
3.	I understand that my participation is voluntary and that I am free to withdraw at any point up to 22 nd April 2022 without giving a reason and without any implications. I understand that

	if I decide to withdraw, I will be able to decide what happens to the data I have provided up to that point.
4.	I understand that my personal information (i.e. name, contact details and ethnicity) will be used for the purposes explained to me. According to data protection legislation, the lawful basis for processing personal data will be 'public task', and the lawful basis for processing special category personal data (i.e. ethnicity) will be for 'research purposes'.
5.	I understand that all personal information will remain confidential. However, if there is any indication of harm to myself or others, I am aware that the researcher may have to alert the relevant authorities. I understand that my data will be stored securely and will only be accessed by the research team, and that it will not be possible to identify me in any publications.
6.	I consent to my interview being audio-recorded and understand that the recordings will be destroyed after the interview transcripts are completed and checked.
7.	I would be happy for the anonymised data I provide to be archived in UCL for up to 10 years.
8.	I understand that I would not benefit directly or immediately (financially or otherwise) from participating in this study, and that 7.50 pounds will be donated to Age UK upon my completion of the study.
9.	I understand that the information I have submitted will be published as a report and that I can contact the researcher after September 2022 if I wish to receive a copy of it.
10.	I am aware of who I should contact if I wish to lodge a complaint.

I understand that writing my name and signing below (by using a mouse, or finger on a touch screen) would mean that I am happy to take to part in the study and consent to all of the above-mentioned points.

Name of participant

Date

Signature

Appendix E

Study Advertisement

LONDON'S GLOBAL UNIVERSITY



Looking for adults aged 65+ who use the Internet and have participated in an intergenerational programme

Title of Research Study: The role of intergenerational programmes in the psychological well-being of Internet users in later life

Name and Contact Details of the Principal Researcher: Dr Georgina Charlesworth (g.charlesworth@ucl.ac.uk)

UCL Research Ethics Committee Approval ID: 19837/001

Intergenerational programmes are activities that involve older people interacting with younger people (ranging from babies to university students).

We are currently conducting research to find out how intergenerational programmes affect the well-being of older people, and would like to invite you to take part in the study if you meet these criteria:

- 65 years old and above
- Participated in an intergenerational programme and able to remember these experiences
- Use the Internet (e.g. to send emails)

Participants will fill in an online form that takes about 10 to 15 minutes, and complete an online video interview lasting up to an hour.

If you are interested to find out more or to take part in this research study, please speak to the people who have shared this advert with you or contact Shin Lau at shi.lau.19@ucl.ac.uk

Thank you!

Appendix F

Pre-interview Online Form

Participants will be automatically redirected to this form after they have provided consent in another Qualtrics form.

- A. Unique identifier to allow responses to be linked to participants in data analysis
 - Please enter the first three letters/characters of your email address: [For instance, you would enter 'st1' if your email address is 'st12345@gmail.com']

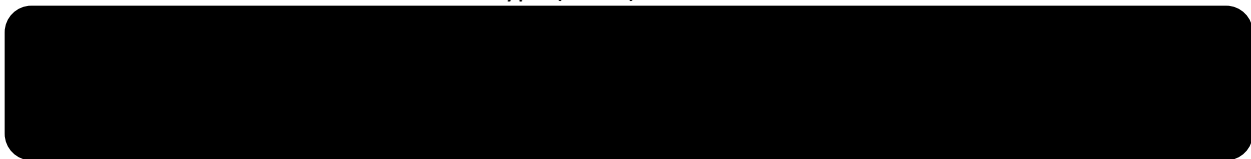
- B. Demographics/background data
 - Age
 - Sex
 - Female
 - Male
 - Other (to specify)
 - Ethnicity
 - White
 - Mixed or multiple ethnic groups
 - Asian or Asian British
 - Black, African, Caribbean or Black British
 - Arab
 - Other (to specify)
 - Prefer not to answer
 - Highest education level attained
 - Primary school
 - Secondary school (up to 16 years old)
 - Higher or further education (A-levels, vocational training etc)
 - University/undergraduate degree
 - Postgraduate degree
 - Other (to specify)
 - Marital status
 - single, never married or civil partnered
 - married, including separated (including both opposite-sex and same-sex marriages)
 - civil partnered, including separated
 - divorced, including legally dissolved civil partners
 - widowed, including surviving civil partners
 - Other (to specify)
 - Living arrangements
 - Living alone
 - Living with family member(s) – e.g. partner, sibling, child etc
 - Living with non-family member(s) – e.g. housemate, friend etc

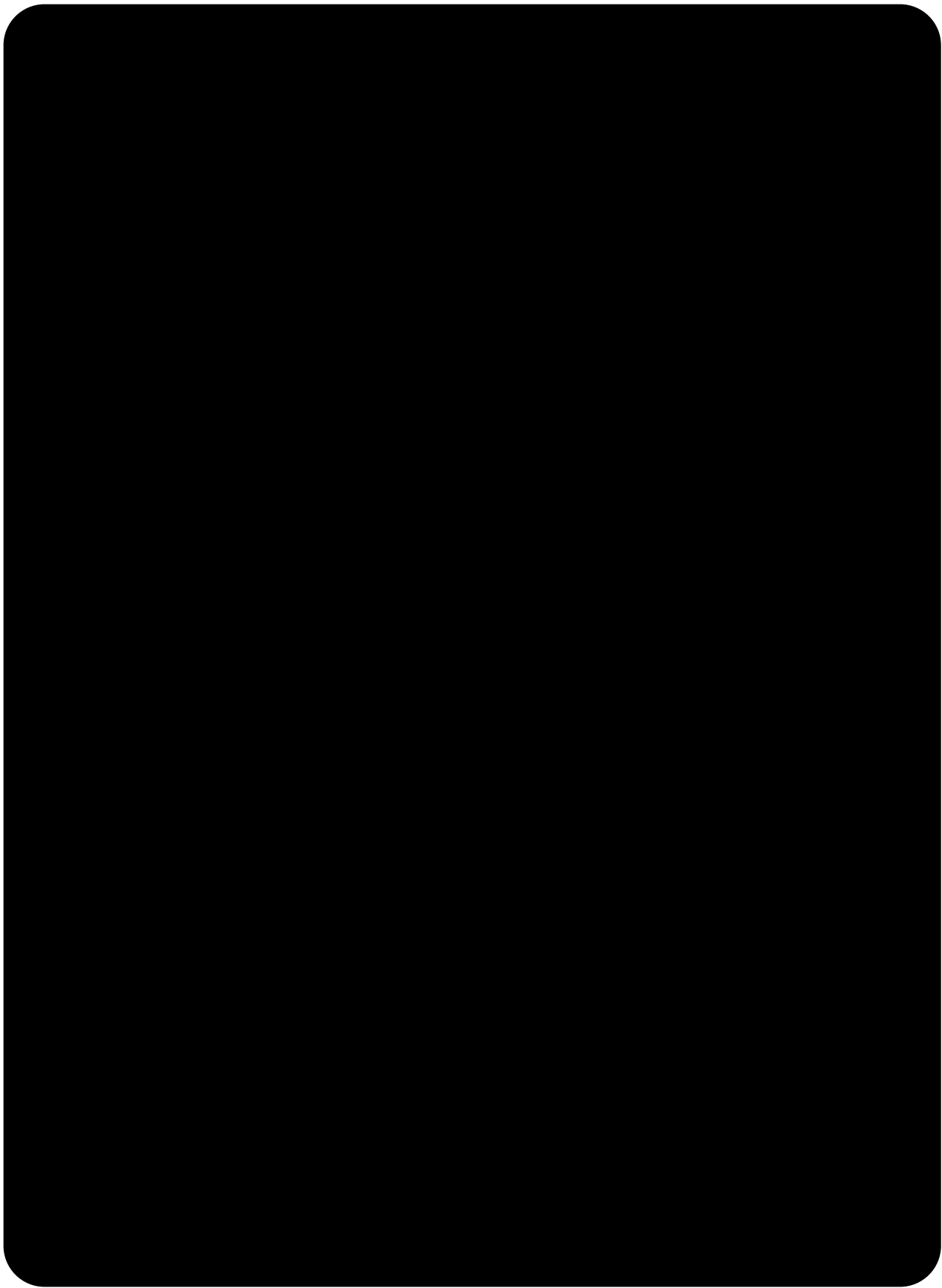
- Supported housing (e.g. sheltered housing, assisted living)
- Care home
- Other (to specify)

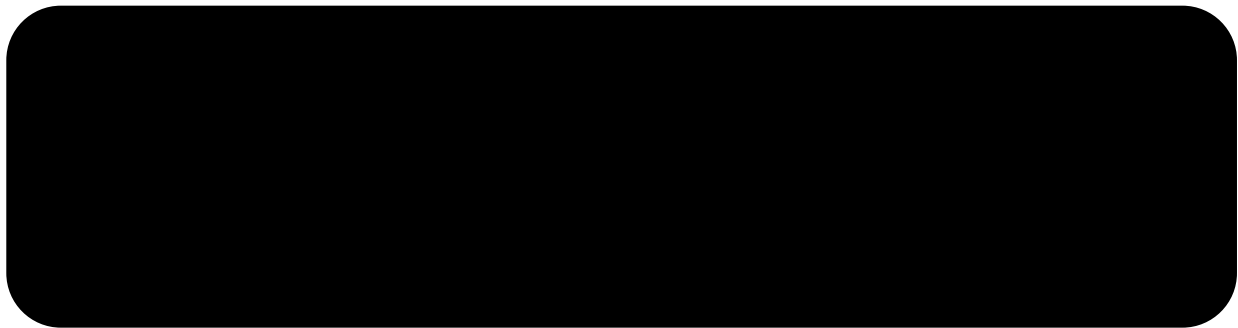
C. Questions about Internet use

- How long have you been using the Internet for? (in years) (If you have been using the Internet for less than a year, please enter '0')
- Has the COVID-19 (coronavirus) global pandemic changed your use of the Internet?
 - No
 - Yes, my Internet use increased
 - Yes, my Internet use decreased
 - Any other comments (text box)
- Frequency of Internet use
 - Daily
 - Up to a few times in a week
 - Up to three times in a month
 - Less than once a month
- What device(s) do you use the Internet on? (multiple options can be chosen)
 - Smart phone
 - Tablet
 - Laptop/computer
 - Other (to specify)
- What do you usually use the Internet for? (multiple options can be chosen)
 - Text messages
 - Video calls
 - Emails
 - Post or browse on social media platforms such as Facebook or Twitter
 - Look for information
 - Online shopping
 - Watch videos and/or movies
 - Games
 - Other (to specify)
- How often do you ask for help when using the Internet?
 - Always
 - Very Often
 - Sometimes
 - Rarely
 - Never

D. Practitioner Assessment of Network Type (PANT)







Appendix G

Interview Schedule

Setting up

Self-introduction

Thank participants for taking time to participate in the study.

Check if they can see/hear well on Zoom/MS teams, and whether the next 1 hour will be free from interruptions.

Overview of research – to find out how intergenerational programmes are experienced and impact the psychological well-being of older adults who use the internet

Overview of interview – 1 hour long, interested to find out about your experience internet use and intergenerational programmes, and how it relates to your psychological well-being. Talk about audio recording and note-taking to record important information for analysis

No right/wrong answers, and purely interested in their views.

Any concerns/questions that they may have?

Start audio recording

Experience of intergenerational programme and impact on well-being

- **Background:** Could you tell me more about your experiences of intergenerational programme?
- How did you feel after participating in the programme? What left an impression on you? What is your most vivid memory of it? What do you enjoy most?
- What changed for you after participating in the programme? What difference, if any, would it make if you did not participate in the programme?
- [If they participated in the intergenerational programme(s) before starting to use the Internet] How similar/different do you think your experience of the programme would be if you were already using the Internet at the time?
- Has the Covid-19 (coronavirus) pandemic affected your participation in an intergenerational programme? If so, how has it affected your experience?
- [For those who attended a pre-pandemic intergenerational programme] In your view, would it be possible for your intergenerational programme to be delivered over the Internet? What difference, if any, would it make to your experience?
- Do you have any interactions with younger people outside the intergenerational programme? If yes, how do these compare to the interactions within intergenerational programmes?

Experience of Internet use and impact on well-being

- **Background:** Could you tell me briefly about your experiences of using the Internet?

- [For those who indicated on the pre-interview form that their Internet use has changed due to the pandemic] Could you tell me more about how the pandemic has increased/decreased your Internet use?
- How do you feel about using the Internet? How important is it for you to be able to use the Internet?
- How has using the Internet affected your life? What changed from using the Internet? What difference, if any, would it make if you did not use the Internet? [Intergenerational or familial contact]

Example prompts:

- Could you describe a typical day...?
- Could you walk me through what you did yesterday...?
- Could you give me an example...?
- Can you remember a time when...?
- Could you tell me more about that?
- Can you give me a more detailed description?

Wrapping up

- I think that is everything I wanted to find out from you, do you have any final thoughts or things you would like to follow up that I haven't asked? Do you have anything else you would like to say that we have not had the chance to talk about today? Was there anything that didn't come up that you were expecting?

Feedback

- Do you have any feedback about the online form that you completed? E.g. areas that we should spend less time on, areas that should be covered
- Any questions?

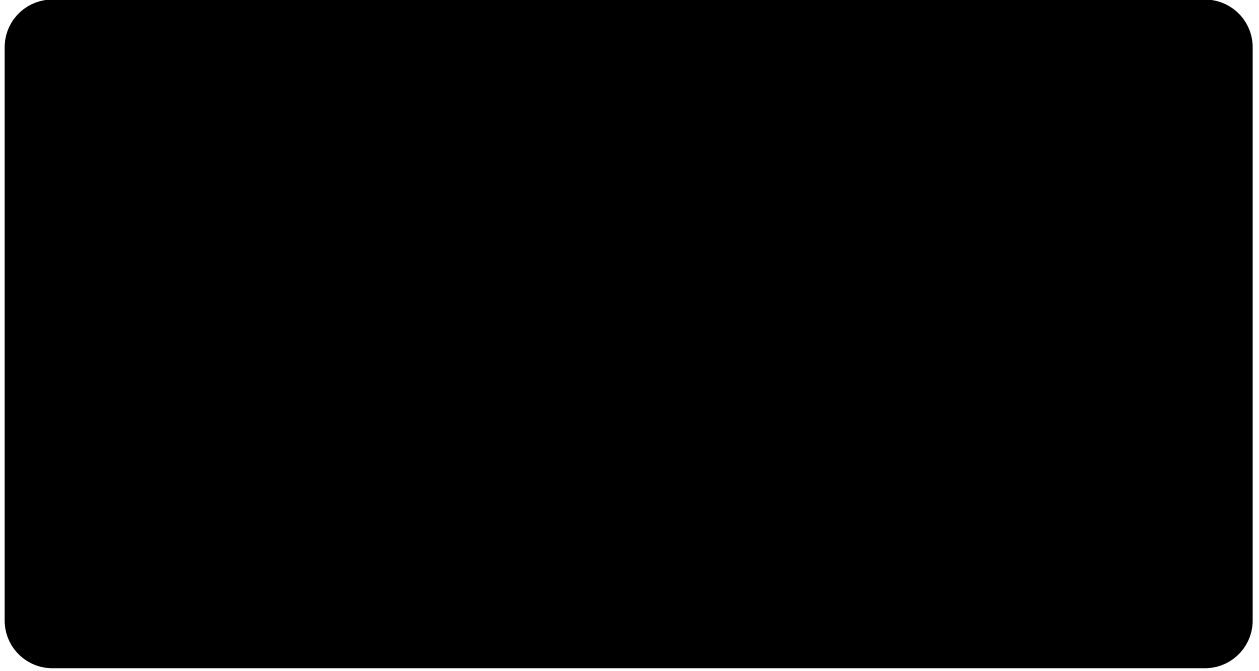
Closing

- What happens next: interview more participants, and will analyse data
- Ask if participants will be interested to provide comments on drafts of the results/write-up. If so, explain they will be contacted at a later stage when the results are written up, and their comments would be used to further refine the results/write-up.
- Recruitment: Ask if they know other people who may also be eligible and interested in the research

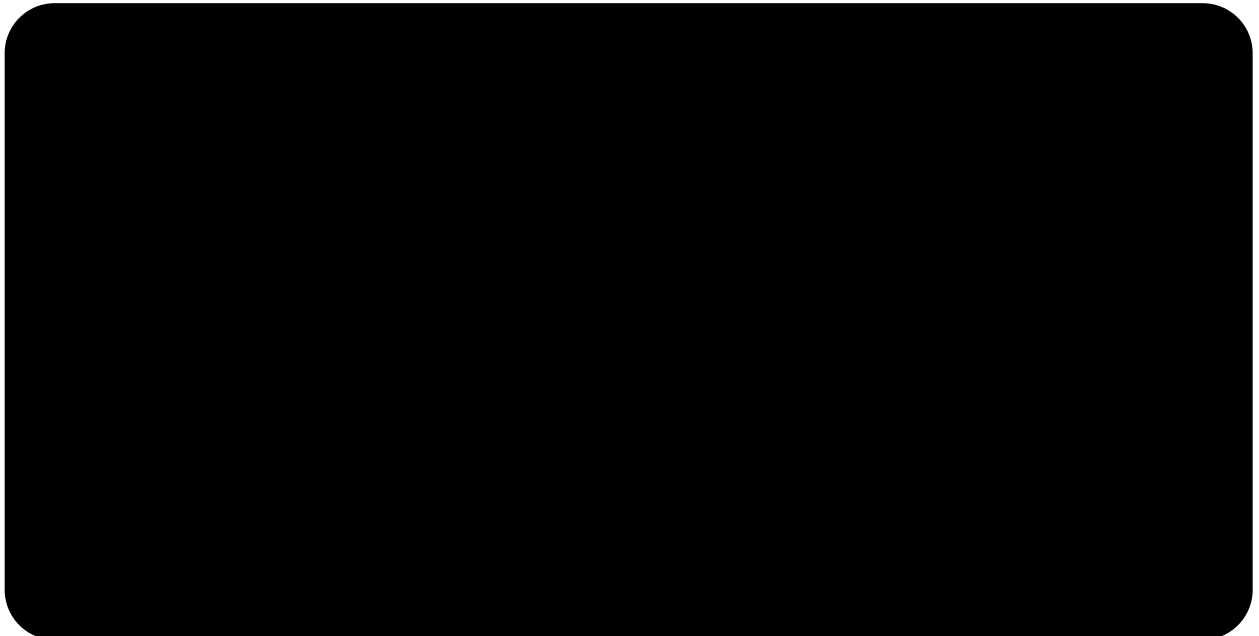
Appendix H

Examples From Analysis Process

Excerpt of interview transcript on Microsoft Word and preliminary codes and ideas at early stages



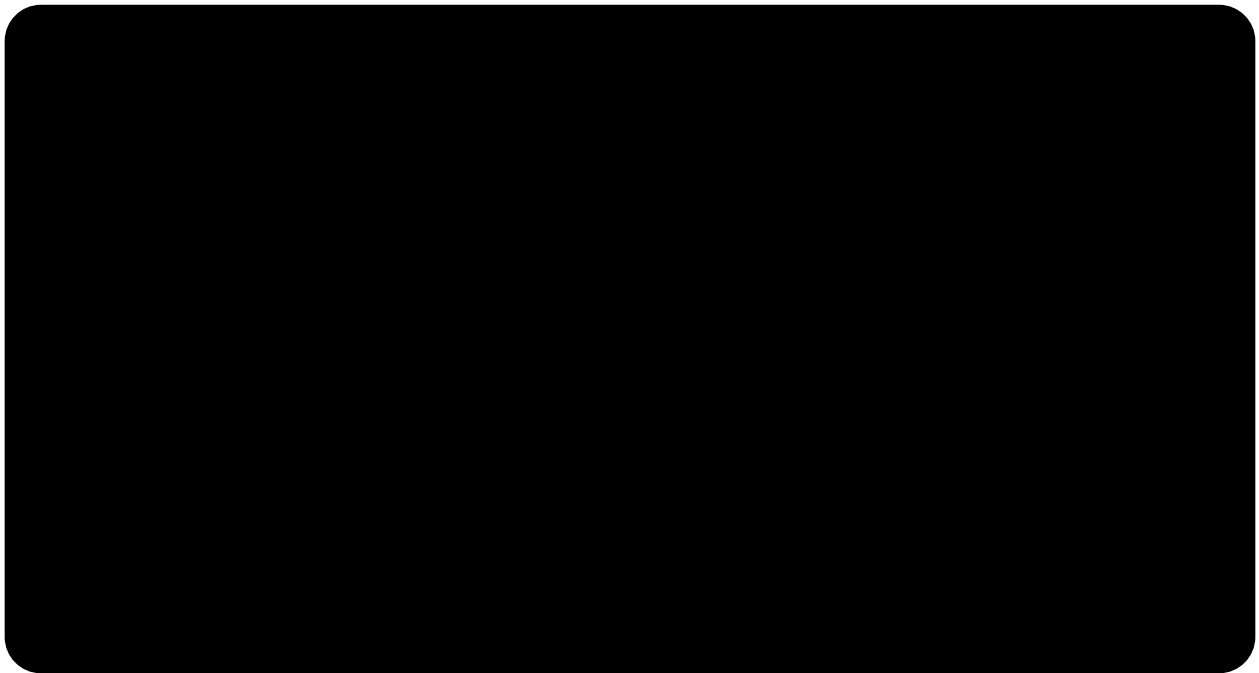
Example of some codes and excerpts in NVivo



Example of interview transcript excerpt on NVivo and codes



Example of using Microsoft Excel to organise codes into clusters



Appendix I

List of Themes and Codes

Themes	Codes
1.1 Affinity towards younger people	Appreciation of diversity in people in general Differentiating between younger people of different ages Liking and affinity for younger people (which is sometimes reciprocated) Negative views of younger people IP - Interacting with children different from interacting with other age groups IP - Intergenerational interaction does not value-add IP - Pre-involvement fears
1.2 IPs in relation to familial intergenerational interactions	Good relationship with younger people in family No interactions or not close with younger people in own life IP - Easier to interact with young people outside than within family IP - Family younger people more comfortable than strangers IP - Substitution for family interactions IP - Treat family younger people and strangers the same
1.3 Connecting to younger people, peers and community	IP - Boundaries and self-censure IP - Connecting with children IP - Connecting with other older participants IP - Flexibility and no responsibilities IP - Reciprocity IP - Sense of being wanted, valued and useful IP - Sense of belonging to a wider community or overall connection IP - Transience of relationships IP - Working and learning together
2 Reconnecting with younger selves	IP - Nostalgia and reminisce about the past IP - Youthful energy and inner child
3 Fulfilling passion for learning	Sees learning as important and open to it IP - Bearing witness to the wonders of youth and growth IP - New knowledge IP - Treating younger people as equals IP - New experiences
4 Contributing to others	Role of educating the young in family, or as teacher or in general The world and people are different now Wanting to be of service to other people and community Younger people having a hard time IP - Role to coach, influence, teach or support

	<p>IP - Sharing of experiences and stories is valued by younger people</p> <p>IP - Tapping on skills and strengths</p>
5 Occupying time meaningfully	<p>IP - Alignment with interests</p> <p>IP - Occupies time</p> <p>IP - Sense of routine and regularity</p> <p>IP - Fun and anticipation</p>