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Artificial Affectionate Communications and Loneliness

Richard D. Adams
Walden University

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Walden University

College of Psychology and Community Services

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Richard D. Adams

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Walden University
2022

Abstract

Artificial Affectionate Communications and Loneliness

by

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MPhil, Walden University, 2020

MBA, University of North Alabama, 2013

BS/BA, Troy State University, 1997

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Social Psychology

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Abstract

This qualitative narrative study examined experiences of older adults' use of teleconferencing information and communication technologies (ICTs) and how their use related to feelings of loneliness. This research targeted older adults residing in North Alabama assisted living facilities who were separated from their previous social network. This research was grounded in the social needs model, which indicates that all humans have a basic need for social contact. This research was also grounded in the buffering hypothesis, where social support acts as a buffer against possible stressful events. Five older adult assisted living facility residents from two facilities participated in a qualitative narrative study to add to the knowledge base on using ICTs and how using these technologies relates to individuals' level of loneliness. The results revealed positive feelings associated with ICT use and feelings of lower levels of loneliness, aligning with the buffering hypothesis and the social needs model. Along with these findings, other ancillary results were found. First, the initial transition into assisted living facilities can be difficult for some new residents. Second, internal relationships were extremely important to the participants, seeming to benefit the participants' overall well-being. Third, negative external relationships are harmful. Finally, there are difficulties with using videoconferencing technologies. This research may benefit older adult assisted living facility residents, administrators, staff, and other stakeholders by providing some exploratory understanding of the role that technology might have in decreasing loneliness for older adults.

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Dedication

This dissertation is dedicated to my wife, Suzanne B. Adams (Suzy), for her never wavering support and love. This work is dedicated to you, Suzy. You have been my inspiration since the day I met you, and I could not have done this without your love and support. You are my best friend.

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Table of Contents

List of Tables	v
List of Figures	vi
Chapter 1: Introduction to the Study.....	1
Introduction.....	1
Background	3
Problem Statement	5
Purpose of the Study	6
Research Question	7
Conceptual Framework.....	7
Nature of the Study	7
Definitions.....	9
Assumptions.....	10
Scope and Delimitations	10
Limitations	11
Significance.....	11
Summary	12
Chapter 2: Literature Review	13
Introduction.....	13
Literature Search Strategy.....	14
Conceptual Framework.....	16
Social Needs Model	16

Buffering Hypothesis	17
Literature Review Related to Key Variables and/or Concepts	20
Aging and Older Adults	20
Loneliness	25
Social and Emotional Isolation/Loneliness.....	28
Perceptions of Loneliness Through Ageism.....	32
Conditions Likely to Cause Loneliness	33
Results of Loneliness	36
Countering Loneliness, Coping	37
Affectionate Communications	41
Information and Communication Technologies	42
Summary and Conclusions	50
Chapter 3: Research Method.....	52
Introduction.....	52
Research Design and Rationale	52
Central Research Concepts	53
The Research Tradition.....	53
Role of the Researcher	56
Methodology.....	58
Participant Selection Logic.....	58
Instrumentation	60
Procedures for Recruitment, Participation, and Data Collection.....	60

Data Analysis Plan	64
Issues of Trustworthiness.....	64
Credibility	64
Transferability.....	65
Dependability and Confirmability	65
Ethical Procedures	66
Summary	67
Chapter 4: Results	69
Introduction.....	69
Chapter Organization	69
Setting	70
Demographics	70
Data Collection	72
Data Analysis	74
Evidence of Trustworthiness.....	77
Credibility	78
Transferability.....	79
Dependability and Confirmability	79
Results.....	80
Loneliness—Loneliness-Related Issues—Primary Category	81
Themes	120
Summary	120

Chapter 5: Discussion, Conclusion, and Recommendations	122
Introduction.....	122
Interpretation of the Findings.....	122
The Need to Add to the Knowledge Base.....	124
Feelings Related to Information and Communication Technology Use.....	124
Difficulties With Using Technologies Such as Information and Communication Technologies	127
Contributing Factors Impacting One’s Feelings About Living in an ALF	128
Other Issues Related to This Research.....	132
Limitations of the Study.....	133
Recommendations.....	134
Implications.....	135
Conclusion	136
References.....	137
Appendix A: Recruitment Flyer.....	169
Appendix B: Interview Questions.....	170
Appendix C: Assisted Living Facility Participation Request Letter.....	172
Appendix D: Prescreening Questions	174
Appendix E: Exit Briefing	176
Appendix F: Interview Protocol.....	177

List of Tables

Table 1	Demographic Characteristics of Participants	71
Table 2	Length of Participant Interviews	72
Table 3	Example of Research Question to Theme Development Path	77
Table 4	Length of Videoconferencing Experience Among Participants.....	109

List of Figures

Figure 1. Research Question to Themes Model..... 76

Figure 2. Research Question to Themes Model..... 81

Chapter 1: Introduction to the Study

Introduction

Chen and Feeley (2013) suggested that one of the more common emotional experiences that older adults encounter is loneliness. It is estimated that there will be an increase in older adults who experience loneliness, given that this population is expected to double in size from the 52 million older adults in 2015 to 95 million by 2060 (Mather et al., 2015). Loneliness has been defined as the subjective feeling relating to perceived social isolation, as well as the feeling of not having one's social needs met (Hawkley & Cacioppo, 2010). Loneliness has been linked to increased depression, 40% greater risk of dementia (Sutin et al., 2018), poorer overall physical health (Ong et al., 2015), and increased mortality (Cacioppo & Cacioppo, 2014; Global Council on Brain Health, 2017). Loneliness has a greater negative impact on older adults who live in institutionalized environments (Grenade & Boldy, 2008) such as assisted living facilities (ALFs), given the limited physical ability of some older adults to travel outside of the ALF environment. This can decrease older adults' interactions with friends, family, or other close acquaintances who comprise their social network. Older adult ALF residents' social networks may also lessen in size due to increased mortality rates among older adults (Lopez & Diaz, 2018).

Feelings of loneliness experienced by older adults can be overcome by human interaction with family or friends (Cacioppo et al., 2010; Cacioppo et al., 2015a; Sullivan, 1953). Unfortunately, those with whom the older adult might want to socially interact (their social network) may not be physically close enough for personal, face-to-face

social interaction on a regular basis. This can occur when an older adult is moved away from their social network, causing physical social network connectedness to suffer (Rowe & Kahn, 1998). Even though ALF residents are around other older adults, this may not satisfy their social network needs. Casey et al. (2015) noted that more than a third of residents did not report having positive relationships with other residents, a notion that is supported by previous studies (Abbott et al., 2013).

Using information and communication technologies (ICTs) may be one way to reduce loneliness when direct interactions with an older adult's social network are not possible. ICTs encompass computers, the internet, mobile telecommunication devices (Selwyn et al., 2003), as well as smart device applications (Charness & Boot, 2009). These technologies could act as an artificial form of affectionate communication to fill the role of a face-to-face social network by performing as a link to the older adult's social network. This link assists in maintaining contact between the older adult and their network and can act as a buffer to reduce loneliness (Cotten et al., 2013). Floyd and Morman (1998) defined affectionate communications as "an individual's intentional and overt enactment or expressions of feelings of closeness, care, and fondness" (p. 145). Two familiar examples of videoconferencing ICT device applications in use today are FaceTime and Skype. These videoconferencing device applications are commonly found on smartphones, touchscreen tablets, personal computers, and other types of computers that have videoconferencing capabilities. Sims et al. (2016) found that older adults used ICTs (internet and cell phones) more frequently than in the past to connect with friends

and family, and that the use of these technologies predicted higher well-being (Charness & Boot, 2009).

Although there have been some positive results relating to ICT use and loneliness, there is still limited knowledge about the use of videoconferencing aspects of ICTs by older adults, and this area needs more attention. Siniscarco et al. (2017) also noted that there is a need to further study loneliness with respect to videoconferencing use to ensure that videoconferencing does not have any adverse effects.

In Chapter 1, I discuss the background, the problem, the purpose of the study, the research question that was answered, the conceptual framework that the study was completed under, the nature of the study, definitions of key terms, assumptions, scope and delimitations, limitations of the study, and the significance of the research.

Background

A multitude of past research was reviewed, concentrating on the latest, most relevant research relating to videoconferencing ICTs and their impact on older adult loneliness. My review included literature on more general related subjects such as loneliness, subjective and objective loneliness, buffering, and technologies relating to videoconferencing. Most of my literature review was completed using scholarly works from the Walden University Library database, PsycINFO, PsycARTICLES, ProQuest, PsycNET, Google Scholar, U.S. government websites, and the multiple online research databases within the Gerontological Society of America.

Research relating to loneliness dated to the 1970s, when de Jong Gierveld (1978) attempted to validate theoretical constructs relating to loneliness. Research relating to

buffering loneliness began in the 1980s, when Cohen and Wills (1985) examined the interaction of buffering, social support, and stress in relation to loneliness. Berkowsky et al. (2018) discussed the factors that impact older adults' decisions to adopt technologies. This study noted that older adults may be less likely to adopt technologies based on their functionality and complexity of use. This research is directly related to my research from the point of view of ICTs; there are many reasons that older adults may not desire to either use or continue to use advanced technologies, with one of them being their perceived declining physical and cognitive abilities. Czaja (2017) discussed different technologies, their uses, and potential issues associated with them as they related to older adults. This research relates to my research from the perspective of older adults using technologies in general, and some of the associated pros and cons of such technologies. Czaja et al. (2018) focused on the use of a particular computer system designed to reduce isolation among older adults by providing support. Though the article focused on the Personal Reminder Information and Social Management (PRISM) system, there was significant general information relating to technology and older adults, as well as the negative impacts of loneliness among this population. Lopez and Diaz (2018) focused on loneliness in older adults, concentrating on loneliness due to the loss of a spouse. Because many older adults who are widowed have been in long marriages, the loss of a spouse can be particularly impactful to their level of loneliness. This research is causally related to my research as many of the older adults in ALFs are not accompanied by a spouse. Sims et al. (2016) focused on how older adults used ICTs to reach social and informational goals. The study concluded that ICTs met both social and information goals, where social

goals were related to psychological well-being and information goals were related to physical well-being. This article relates to my research from the perspective of the information relating to ICTs and their fulfillment of social goals. Sutin et al. (2018) focused on loneliness and its relationship to dementia. The results of the research indicated that those who suffered from loneliness had a 40% greater risk of dementia. This specifically relates to my research from the perspective of confirming the importance of research related to loneliness due to its impact on the well-being of older adults.

The gaps in the knowledge are the inconsistencies in the findings between different studies relating to loneliness and ICT use in older adults (Cotton et al., 2013; Slegers et al., 2008). Czaja et al. (2018) and Siniscarco et al. (2017) noted that there is limited knowledge about the use of videoconferencing aspects of ICTs by older adults and that this area needs more attention.

This study was needed to gain more knowledge on ICT use among older adults. It focused on older adult ICT use within ALFs to ensure that the intricacies of assisted living, such as being separated from one's social network, were studied. Another important role of this study was to gain knowledge on ICT use as a buffer to positively relate to loneliness, as well as to gain knowledge on the possible negative aspects of ICT use with this older adult population.

Problem Statement

Past research has shown that older adults may be prone to feelings of loneliness even when they frequently interact with others (Rafnsson et al., 2020). Sims et al. (2016)

found that these older adults may experience higher levels of overall well-being and lower feelings of loneliness by using different types of ICTs to buffer loneliness. ICTs include electronic devices such as cell phones and smart device applications (Charness & Boot, 2009). What is not known is whether these ICTs may buffer loneliness for some older adults while serving as a substitute for actual face-to-face interactions, or if there are negative impacts for other older adult ICT users (Wang et al., 2018). What is not known are what “additional complexities” exist that may play a role in loneliness as it relates to how these older adults may be using these ICTs, such as for social interaction, or if these tools are used as a means to connect to establish new social contacts (Wang et al., 2018, p. 10) and how this impacts those in ALFs who are geographically separated from the majority of their social network. This research adds to the knowledge base on these issues as they relate to ICT use among older adults.

Though the findings of earlier research sounded promising, there were still some inconsistencies as some ICT use studies showed significant reductions in the level of loneliness for adults 65 and older (Cotton et al., 2013), while other studies found no significant differences in loneliness between different community-dwelling older adult groups (Slegers et al., 2008), thus leaving a dichotomy that needed further research.

Purpose of the Study

The purpose of my qualitative research was to examine older adults’ experience with ICT use as they perceived it related to loneliness from the perspective of older adults who had moved to assisted living facilities and were a significant distance from their physical social network. This research delved into the experiences of older adults who

had used videoconferencing technology to maintain contact with their social networks, and how this population described their experiences with ICT use as it related to their feelings of loneliness.

Research Question

RQ1—Qualitative: How do older adult ALF residents describe their experience with ICT use as it relates to their feelings of loneliness?

Conceptual Framework

My research was grounded in the social needs model that states that all humans have a universal basic need for social contact (Kupersmidt et al., 1999). The other model pertinent to my research was the buffering hypothesis, where Cohen and Wills (1985) pointed out that social support acts as a form of protection against possible stressful events and the absence of close relationships can increase depressive events (Lowenthal, 1965, as cited in Russell et al., 1997). Cutrona et al. (1986) described the buffering hypothesis as a social interaction that acts as a barrier and assumes a protective role by interjecting adaptive coping behaviors, such as help seeking (Gould et al., 2004), during times of high stress. The social needs model and the buffering hypothesis were the best lens through which to view older adult loneliness as it related to ICT use. The older adult population who resides in ALFs is a population whose members are limited in their ability to travel and are thus limited in their ability to meet their social needs.

Nature of the Study

The nature of this study was a qualitative narrative inquiry. The research consisted of one-on-one telephone interviews with older adult participants to gain

knowledge about their perceptions of loneliness relating to ICT use. I chose the narrative inquiry method for my research because it is based on a storytelling format with a goal of acquiring more detailed information. The narrative inquiry allowed for more detailed accounts of the participants' perceptions rather than receiving brief answers to questions (Kohler Riessman, 2008). This storytelling format led to a more relaxed participant, allowing for a freer flow of information. I addressed issues related to affectionate communications, social interaction, social networks, and loneliness from the perspective of using videoconferencing ICTs. This research specifically concentrated on those older adults who lived in ALFs and were physically separated from their social network. I selected candidates to participate who did not have legal guardians. The age requirements coincided with the age requirements of the participating ALFs based on state regulations but followed the guidelines of the World Health Organization (WHO, 2019) of 60 years of age and older.

I used primary sources of data gathered from the older adult participants. The data were collected from in-depth qualitative interviews that were audio recorded (Rubin & Rubin, 2012) to gain knowledge about loneliness and technology use from the perspective of the older adult participants.

The data were collected in a setting that was comfortable for each participant. All telephone interviews were conducted from the participants' ALF residences. This ensured that a level of purpose and seriousness was maintained during the interview process. To enhance data triangulation, field notes were taken of observations related to the context of the participants' actions to assist in the validation process. This triangulation of the

participants' experience was completed by performing more than one interview to confirm previous data, thus increasing the research validity (Scott, 2007).

Definitions

Assisted living facility (ALF): A “facility that provides room and board and varying degrees of assistance with management of medical conditions and with Activities of Daily Living (ADLs) in patients who are physically and/or cognitively impaired” (Sanford et al., 2015, p. 182).

Emotional loneliness: The loneliness one feels from the lack of a close personal attachment to another person (Weiss, 1973).

Information and Communication Technologies (ICTs): Technologies such as the internet, email, and other technologies that may enhance personal connectivity (Czaja et al., 2018).

Loneliness: A person's subjective feelings relating to perceived social isolation and feelings of not having their social needs met (Hawkley & Cacioppo, 2010).

Older adult: The WHO (2019) classifies older people as those who are 60 years old or older, though the WHO does not specifically define the term *older adult*.

Social loneliness: An insufficient amount of social contact (Weiss, 1973).

Social network: A term first coined by Barnes (1954) to differentiate between social groups and social categories, noting that a social network is comprised of individuals or organizations, called actors, which have some form of social relationship.

Assumptions

I conducted the interviews with no preconceived assumptions and binding by the intent of the narrative inquiry, which allowed for more detailed accounts of the participants' perceptions rather than receiving brief answers to questions, allowing for a more relaxed atmosphere (Kohler Riessman, 2008). I addressed issues related to affectionate communications, social interaction, social networks, and loneliness. For example, to date, my personal interaction with those in ALFs has been predominantly with older females compared to older males. However, this reflects more than an assumption or my personal observations, as a 2018 Profile of Older Americans (Administration for Community Living, 2018) noted that there are approximately 125 women for every 100 men, or 80% men; I obtained participants who matched this ratio noted by the Profile on Older Americans. I was able to obtain four female and one male participant.

Scope and Delimitations

I chose to conduct a qualitative narrative study because more knowledge was needed about loneliness and older adults (Czaja et al., 2018; Siniscarco et al., 2017). This is particularly relevant to older adults who may seem to be in a socially active environment such as an ALF but have been removed from their normal social network. For such individuals, ICTs may play a role in their lives to reduce loneliness by acting as a buffer, or they may have no impact or a negative impact on their level of loneliness. Present studies have noted the lack of research relating to older adults and ICT use

(Rainie, 2016), as well as how these technologies are being used by the older adult user (Czaja et al., 2017).

Limitations

Challenges included gaining access to participants who had experience with videoconference communications technologies while still meeting the other participant requirements such as being physically separated from their physical social network. These constraints required me to access participants from two ALFs. The primary barrier was gaining permission from facilities to conduct such a study, as well as the implications of working with a protected population, especially during a pandemic.

Significance

The results of this study could assist in advancing understanding of the perceptions of loneliness of older adults who reside in ALFs, specifically those who are physically separated from their social networks and who use, or have used, the videoconferencing capabilities of ICTs to assist with buffering against loneliness. This research may benefit ALF administrators, staff, and other stakeholders, by providing some exploratory understanding of the role that technology might have in decreasing loneliness for older adults. This research is intended to offer insight that may help in the decision-making process of families considering placement of an older adult family member away from their physical social network. This research may impact ALFs that may be considering providing ICTs to residents. This research adds to the body of knowledge relating to loneliness and ICT use, specifically among older adults who live in ALFs.

Summary

Chapter 1 provided an overview of the present study, explaining the importance of the study by explaining the problem and the purpose statement. It also explained the benefits of the study, related background studies, the research question that was answered, the nature of the study, and the conceptual framework of the study. Chapter 1 also covered the assumptions, scope and delimitations, and limitations of the study. This chapter also addressed the growing older adult population, highlighting the point that issues associated with older adults will only grow in the coming years.

Chapter 2 provides a historical background of older adults, ALFs, ICTs, and loneliness. Chapter 2 examines the relationship that these subjects have with one another, as well as the legacy and recent studies related to older adults, ICTs, and loneliness. Chapter 2 explains the rationale for the concepts that were used as constructs for the study.

Chapter 2: Literature Review

Introduction

A review of the literature indicated that there has been an increased interest in older adults and loneliness over the past several decades of related research. Gaining more knowledge about older adult loneliness becomes more critical with each passing year as the older adult population is set to double by 2060 to 95 million (Mather et al., 2015). The growth rate of the older adult population does not seem as though it will change anytime soon. Even in 1980, Birren and Renner mentioned that there was dramatic growth in the older adult population. With the number of older adults constantly growing, the number of assisted living facility residents is sure to rise as well, as 70% of older adults will need some form of long-term care (Johnson, 2020). This could be viewed as a negative or a positive, depending on one's perspective, as technology seems as though it may assist with loneliness for these separated family members who live in assisted living facilities (ALFs) and seems to assist with loneliness issues for some older adults (Hawkley & Cacioppo; 2010, Smith, 2012).

Using ICTs may be one way to reduce loneliness when direct interactions with an older adult's social network are not possible (Cacioppo & Cacioppo, 2014). Though these technologies may assist in the level of loneliness of older adults who reside in ALFs, past research has been contradictory, which could be why Czaja et al. (2018) and Siniscarco et al. (2017) stated that the limited knowledge on videoconferencing aspects of ICTs by older adults and their relationship to loneliness needed more attention. The purpose of this qualitative research was to further knowledge on these phenomena and to examine

the role that ICTs have on loneliness from the perspective of older adults who have moved to assisted living facilities and interact with their social network using ICTs.

Chapter 2 begins with explaining the literature search strategy and addresses the databases and process in completing the literature review. The second section of this chapter identifies and defines the main concepts that guided my research, which were the social needs model that states that all humans have a universal basic need for social contact (Kupersmidt et al., 1999) and the buffering hypothesis, where Cohen and Wills (1985) pointed out that social support functions as a buffer against possible stressful events. Cutrona et al. (1986) described buffering as a social interaction that functions as a barrier against negative life events in times of high stress through coping mechanisms. Older adult ALF resident use of ICTs and the relationship to loneliness were viewed through these conceptual lenses. The third section of Chapter 2 is the synthesis of the literature as related to the research question, key variables, and related concepts. This section begins with general information on older adults, aging in ALFs, loneliness, affectionate communications, and ICTs. Chapter 2 closes with a summary and conclusion section.

Literature Search Strategy

To ensure that the research review was exhaustive, I utilized multiple databases to access peer-reviewed journals while concentrating on the latest, most relevant research relating to videoconferencing ICTs and their impact on older adult loneliness. I used older research articles if they were foundational and/or critical to clarifying concepts. My review included literature on more general and related subjects such as loneliness,

subjective and objective loneliness, buffering, and technologies relating to videoconferencing. Most of my literature review was completed using scholarly works from the Walden University Library database. I also used PsycINFO, PsycARTICLES, ProQuest, PsycNET, Google Scholar, and the multiple online research databases within the Gerontological Society of America. U.S. government websites were mainly accessed for statistical data relating to relevant subjects.

I searched for a variety of key terms, along with using Boolean operators such as AND to string relevant terms such as “older adults and loneliness.” The primary key terms in my literature search were *older adults, loneliness, subjective and objective loneliness, aging, assisted living facilities, social needs model, buffering hypothesis, social and emotional isolation, social and emotional loneliness, social networks/social relationships, social support, social contact, intimate social contact, social embeddedness, social connectedness, affectionate communications, and information and communication technologies*. Filters were used to limit many searches to the past 5 years unless the material being searched was for historical or background use. The purpose of the review was to complete an intensive review of terms, concepts, and past research that specifically related to older adult loneliness and ICT users within the ALF environment.

With these criteria, over 300 peer-reviewed articles were reviewed; 168 were used for the literature review. Multiple government websites were used for statistical data; additionally, I used 45 relevant books. The literature review assisted in determining the conceptual framework most strongly associated with the research problem and question, as well as directing further research into closely related subjects such as social support.

The literature review, while directing additional searching in associated areas of study, did make me aware of the actual shortage of information causally related to the social needs model. A good example of this were the many references to the definition of the social needs model that references Fromm-Reichman (1959), Sullivan (1953), and Weiss (1973). Though there were many references to the definition, there were no clear, outright definitions without reading into the literature. For example, I read Weiss's 1973 book on loneliness from cover to cover, finding no outright explanation of the social needs model; the closest concepts he discussed had more to do with social and emotional isolation (loneliness) and social support. These are causally related to what has been explained as the social needs model/perspective. The basis of these terms is that humans desire positive relationships and interactions with other humans and that this desire is causally related to either eliminating or preventing loneliness or filling real deficits in relationships (Archibald et al., 1995).

Conceptual Framework

This research was grounded in the social needs model and the buffering hypothesis.

Social Needs Model

The social needs model is based on social contact and intimacy as an essential human need, one that, if not met, can result in feelings of loneliness (Sullivan, 1953; Weiss, 1973). Sullivan (1953) viewed these social interactions as tenderness, companionship, acceptance, and intimacy. Sullivan broke these different social interactions into groups that seemed to expand as the person developed from childhood to

early adolescence. Even Veroff and Veroff's (1980) stages of universal incentives moved from infancy to adulthood but missed the differences in social needs when it came to those of the older adult.

The social needs perspective is even more important to the older adult, as Weiss noted in 1973 when he discussed loneliness and older adults. Weiss stated that older adults are more susceptible to loneliness the older they become as there are more instances of loss of relationships, deaths, and their own age-related issues.

The social needs perspective views loneliness from both the emotional and social aspects of loneliness (Archibald et al., 1995; Weiss, 1973), which I discuss in more detail later in this chapter.

Buffering Hypothesis

The buffering hypothesis or buffering model is the other conceptual lens that my research was viewed through. A buffer, as the name implies, is something that is used by an individual to dampen or buffer the negative impact of an event on that person (Cohen & Wills, 1985), and buffering from social support may significantly reduce negative psychological effects (Caplan, 1974). An example of this could be something as simple as having a close friend to confide in during times of high stress; having someone with whom to interact about stresses can assist in buffering the influences of those stresses. There was a multitude of past base research that supported the fact that social support and methods for coping do in fact buffer one from the effects of negative life events (Eaton, 1978; House, 1981).

Cohen and Wills (1985) stated that a person who experiences high stress and has a low level of support (low level of buffering) will tend to have elevated health indices based on a 38-item mental health index. Buffering does not generally occur simply by a certain number of social contacts or memberships in organizations (Eaton, 1978; Husaini et al., 1982; Thoits, 1982a; Warheit, 1979) but requires a significant relationship such as a marriage or close friendship to perform the buffering function (Eaton, 1978; Kessler & Essex, 1982; Thoits, 1982b).

A study by Thoits in 1982 touched upon a significant aspect of buffering, which is that “only certain types of sources of social support moderate the impacts of certain types of life events” (p. 353). This is directly related to this research, which focused on older adults’ experiences with ICTs that may act as a buffer against loneliness by becoming the link between the older adults who are in ALFs and their social networks (significant relationships) that they no longer have face-to-face contact with. As mentioned earlier, being around other older adults may not be enough to buffer against loneliness. Simply being around other residents may not fulfill one’s social needs. This is based on that fact that more than one third of residents in ALFs did not develop positive relationships with other residents (Abbott et al., 2013; Casey et al., 2015). The quality of the available support is more important than the quantity of support (Henderson, 1981). It is also important to note that disadvantaged sociodemographic groups, such as older adults, are affected more by stressful events (Kohn, 1968; Thoits, 1982b); thus, being separated from their social network (their buffer), along with the other stresses of this population, can have a dramatic negative impact on their well-being.

The buffering hypothesis relates directly to other realms of loneliness and was causally related to this research. These included social and emotional loneliness, social networking, social well-being, and specifically, social support or the lack of. Throughout the literature review, most aspects of buffering, excluding personal coping strategies, seemed to be directly related to social support (Thoits, 1982a) and social relationships positively correlated to older adult life satisfaction (Larson, 1978; Liang et al., 1980; as cited in Cutrona et al., 1986). Weiss (1973) also discussed different aspects of buffering as they related to emotional loneliness, which he described as a lack of attachment relationships, and social loneliness, which is a lack of friends or associates. Gaining more knowledge on these two aspects of loneliness as they relate to using ICTs as a possible buffer against loneliness was an important goal of this research.

Even among early research relating to buffering, there were mixed results concerning the effectiveness of buffering based on the determinants that were viewed in the research. There was a 2-year longitudinal study by Eaton (1978) that showed a positive relation between social support and buffering as it related to marital status and living alone. Multiple other early studies showed a positive relationship between some form of social support and buffering, though for different determinants, while the cross-sectional study by Husaini et al. (1982) and the longitudinal 3-year study by Warheit (1979) showed no psychological buffering (Cohen & Wills, 1985). My research is intended to add to the knowledge not only of loneliness, but on the buffering hypothesis as well.

Literature Review Related to Key Variables and/or Concepts

Loneliness is a complex phenomenon that effects individuals differently based on many different sociodemographic elements but is especially important to older adults, who are vulnerable to feelings of loneliness at their stage of life because loss of health and loved ones is inevitable (Lam et al., 2017). While researching the subject of loneliness as it relates to older adults who live in ALFs and then examining their experiences with ICTs as they relate to loneliness, it became evident that an even more complex synthesis of the literature was required.

The literature review began with an analysis and synthesis of literature related to older adults and ALFs, then moved to related aspects and concepts of loneliness in a general context as they applied to older adults, as well as older adults in ALFs. Elements of socialization, such as social support, social networks, and social contact, were reviewed and explained in the context of older adults, as well as ICTs, ICT use among older adults, and their relationship with loneliness. ICTs were reviewed through the lens of being or acting as the buffer for older adults who live in ALFs and are separated from their social network, even though I remained cognizant in my research of any negative aspects of ICT use.

Aging and Older Adults

According to Lopez-Otin et al. (2013), aging is the “time-dependent functional decline that affects most living organisms” (p. 1194). Though this definition may seem bleak, most people in civilized societies are living longer compared to past generations, with average life expectancy increasing from 68 years in 1950 to 79 years in 2013 (U.S.

Centers for Disease Control and Prevention, 2013). As was mentioned in the introduction to this study, this is significant because the older population is due to double in size to 95 million by 2060 (Mather et al., 2015). This increase in the older population should logically correlate to an increase in older adults who will live in ALFs by 2060 simply based on the fact that 70 % of older adults will need some form of long-term care (Johnson, 2020); thus, as the population of older adults increases, so will the number of older adults who will need assisted living. When past research on older adults was conducted, it revealed that sociodemographic factors such as age, education level, and gender played a role in the level of loneliness felt among older adults (Dahlberg et al., 2015). Along with these sociodemographic factors were the different aspects of aging and how they may relate to older adults who live in ALFs differently compared to those who live in other environments. For example, Agogo et al. (2014) described four different concepts of aging, of which two would possibly have a different impact on the ALF older adult resident compared to other living environments. The authors discussed four types of aging: chronological aging, which is represented by the actual number of years that a person has lived (Agogo et al., 2014); biological aging, which refers to the biological changes that occur to each person over time; mental aging, or cognitive capabilities, which tend to decline linearly over time (Kaufman et al., 2016); and social aging, which is related to society's perception of old age based on social, economic, cultural and demographic factors (Sokolovsky, 2009). Chronological and biological aging, by their definitions, should apply to all older adults regardless of their living arrangements or sociodemographic factors. Though delving deep into mental and social aging was not

within the scope of this research, it is possible that older adults who live in ALFs may experience different levels of mental and social aging based on different life stressors. This is an area that may need some further investigation, as variables such as living environment/conditions, mental activity, social interactions, and ICT use might contribute to an increase or decrease in loneliness. This may be causally related to ICT use; for example, does ICT use among this group increase or decrease mental activity? Will the use of ICTs by more older adults in ALFs change the social and cultural views of this population? Though this study touched on some of these points, it was not the main objective of this study.

Aging in ALFs

My research concentrated on older adults who lived in assisted living facilities. These facilities provided different levels of assistance to the residents depending on their level of need (*Exploring Senior Living*, 2020). The National Center for Assisted Living (2020) defines assisted living as a “part of a continuum of long-term care services that provides a combination of housing, personal care services, and health care designed to respond to individuals who need assistance with normal daily activities” (p. 1). Though these facilities support aging in place and allow for maximum autonomy and privacy, they are staffed to provide 24-hour supervision and health services. The concept of aging in place is a key element of ALFs (Assisted Living Federation of America [ALFA], 1998). This concept of aging in place causally relates to the use of ICTs, as ICT use aligns with maintaining contact with ALF residents’ current social networks (Czaja et al., 2018) and helps to maintain the homelike environment of the ALF (Lewin-VHI, 1996).

ALFs are more customer based (Mollica & Snow, 1996) or person centered (Swedish National Board of Health and Welfare, 2012) when compared to more health-services-related facilities such as nursing homes. ALFs have other benefits as well, when compared to other types of living environments. ALFs are more flexible in their care, allowing residents to age in place longer, thus preventing frequent moves as their health needs change (Chapin & Dobbs-Kepper, 2001). By extending the older adult's residency in ALFs, the cost of care compared to facilities such as nursing homes was substantially less (U.S. General Accounting Office, 1997).

Long-term care providers and services supported more than 8 million older adults in 2016 (Harris-Kojetin et al., 2019). This number included adult day-care centers, home health care agencies, hospice services, nursing homes, and assisted living and residential care communities (Harris-Kojetin et al., 2019). In the United States, these older adult facilities contained 996,100 registered beds in 28,900 assisted living facilities, which were filled with 811,500 older adult residents (National Center for Assisted Living, 2019). In this population, 71% of residents were women and 29% of residents were men, and 52% of the population was 85 years of age or older (National Center for Assisted Living, 2019). Even though a 2018 National Investment Center for Seniors Housing report showed a decline in occupancy for that year, many believe that by 2021, what they refer to as a "silver tsunami" will occur because many baby boomers will be turning 75 years of age (Boese et al., 2019). These statistics confirm that the number of older adults in ALFs will only get larger, leaving the problem of loneliness among this population to

grow as well. This will impact not only those in ALFs, but also the growing older adult population across many different living environments.

There are many different types of living environments for older adults. These range from living alone or with family, to living in a multitude of other residences that provide some type of support. These can range from active adult communities, home health care, independent living, life plan communities, memory care facilities, nursing homes, and the area of interest for this research, assisted living facilities (*Exploring Senior Living*, 2020). The main difference between most of these services and facilities lies in the level of assistance that is provided to the older adults. For example, in active adult communities, the age limit can be lower, usually 55 years of age or older. These communities provide hospitality services, outdoor maintenance, and other amenities depending on one's contract. Home health care provides medical and nursing services in one's home. Independent living are settings where older adults who require minimal support reside. Life plan communities provide many services, to include different levels of healthcare, depending on the resident. Memory care are facilities that are normally within another type of community but provide dedicated services for those who suffer from cognitive impairments. Nursing homes are facilities that provide skilled nurses that generally provide around-the-clock care to its residents (*Exploring Senior Living*, 2020).

For the older adult, moving from a home that they may have lived in for decades, is often a negative life event causing stress, depression, and an overall decline in one's health (Smith, 2009). Relocating from one's home to an ALF or other facility, can cause the older adult to feel as though they have lost their familiar self-defined role and can

impact their transition to a long-term care facility (Gibbs, 2005). The structure of such facilities may limit what earlier roles and familiar tasks residents are even able to perform (Mulry, 2012). Loneliness can accompany such situations and feelings of loneliness can have a direct impact on the older adult's satisfaction with the services they receive (Aartsen & Jylhä, 2011). The newness of communal living, losing one's independence and privacy (Kane, 2001) may outweigh the positive impact of being around other older adults. A study by Kajonius and Kazemi (2016) revealed that residents in nursing homes were lonelier than those who received in-home care, noting that there is a common misconception of a positive correlation between loneliness and being around others (Kajonius & Kazemi, 2016). An older study demonstrated that older adults who reported feeling lonely were more likely to be admitted to a nursing home (Russell et al., 1997).

Loneliness

Loneliness is a serious problem for those it affects to the point that the media has described loneliness as an epidemic (Hafner, 2016; Kar-Purkayastha, 2010; Murthy, 2017). Weiss (1973) stated that "loneliness is among the most common distresses" (p. 1). Perlman and Peplau describe loneliness as an "unpleasant experience that occurs when a person's network of social relationships is deficient in some important way, either quantitatively or qualitatively" (1981, p. 31). More than quantitatively or qualitatively relevant, Weiss (1973) described loneliness from the perspective of social or emotional loneliness, which is how my research on loneliness was viewed. Many other psychologists in the field agree with these two categories of loneliness (Young, 1982),

though they may not always identify them using the same terms. Another good example of this is in Rook's (1984) definition of loneliness:

Loneliness is defined as an enduring condition of emotional distress that arises when a person feels estranged from, misunderstood, or rejected by others and/or lacks appropriate social partners for desired activities, particularly activities that provide a sense of social integration and opportunities for emotional intimacy. (p. 1391)

Weiss (1973) divided loneliness into the two previous discussed categories of social and emotional loneliness and through my literature review, many of the definitions of loneliness fell into one of these two categories. For example, de Jong Gierveld (1989) stated that loneliness is an unpleasant feeling experienced by a person based on either the quality or quantity of existing relationships as perceived by the individual, where quality would relate to emotional loneliness and quantity would relate to social loneliness. One's actual level of social contact does not causally relate to their level of loneliness (Jones, 1981). Being alone or seeking solitude does not necessarily correlate with loneliness and can occur while being alone or while socially active (Kajonius & Kazemi, 2016; Peplau et al., 1982; Weiss, 1973). From the social needs perspective, loneliness is viewed as an actual deficit in social contact or social intimacy (Weiss, 1973).

Though there may be some differences in the definition of loneliness, many of the legacy researchers such as Sullivan (1953) and Fromm-Reichmann (1959) universally viewed loneliness as a painful event. There were early philosophers and social psychologists such as Hofstätter that proposed a positive view of loneliness, one that

included self-isolation to withdraw from societal hassles to pursue loftier goals, such as communicating with God, for example (Hofstätter, 1957; as cited in de Jong Gierveld, 1989) and was referred to by van Tilburg (2020) as existential loneliness. For my research, I viewed loneliness from a negative rather than a positive perspective, similar to Sullivan (1953) and Fromm-Reichmann's (1959) description of loneliness. Sullivan noted the power of loneliness, stating that it could make the shyest person seek out social contact, and noting that it was even more terrible than the effects of anxiety (1953). Fromm-Reichman noted that it was "such a painful, frightening experience that people will do practically everything to avoid it" (1959, p. 1).

While many of the definitions of loneliness seem to fall into either the emotional or social loneliness categories, other researchers have described other types (Rook & Peplau, 1982) and dimensions (Sadler, 1974, 1978) of loneliness. For example, Young (1982) described three different types of loneliness, which are chronic, situational, and transient. Chronic refers to feelings of loneliness associated with long-term loneliness. Situational loneliness is a disruption in a person's social relationships, and transient loneliness are feelings one experiences with occasional loneliness (1982). Sadler (1974, 1978) described five different dimensions of loneliness. These are psychological, interpersonal, social, cultural, and cosmic. Psychological loneliness is when one does not feel as though they are in touch with themselves. Interpersonal loneliness is the feeling of being separated from others. Social loneliness is the feeling of being alienated from others. Cultural loneliness is the feeling of being separated from others for cultural reasons, either from cultural change or a lack of culture, and cosmic loneliness is the

feeling of being separated from God or nature (Sadler, 1978). Others ascribe to a three-dimensional model of loneliness, which consists of intimate, relational, and collective loneliness (Hawkley et al., 2012).

Intimate loneliness relates closely with Weiss's (1973) description of emotional loneliness (Cacioppo et al., 2015b; Hawkley et al., 2012). This type of loneliness has been associated with the absence of a significant, intimate relationship, such as one would have with a spouse (Weiss, 1973). Past research has shown a positive correlation between intimate relationships and lower levels of loneliness (Cacioppo & Patrick, 2008; Hughes et al., 2004; Lopata et al., 1982; Russell, 1982; Waite & Gallagher, 2001; Weiss, 1973). From Dunbar's (2014) description of intimate loneliness, this would include a person's inner core-group consisting of up to five people. Relational loneliness is like Weiss's (1973) definition of social loneliness. This type of loneliness relates to the lack or absence of quality family and friend relationships (Cacioppo et al., 2015b; Hawkley et al., 2008; Hawkley et al., 2012) and would generally consist of 15 to 50 people (Dunbar, 2014). Collective loneliness, though not specifically mentioned by Weiss (1973), is a person's active network that relates to a collective space and can range in size from 150 to 1500 people (Dunbar, 2014). Though collective loneliness seems to relate more to a collective space (Dunbar, 2014), it seems to fall into Weiss's (1973) social loneliness description.

Social and Emotional Isolation/Loneliness

What Weiss suggested is that there are basically two types of loneliness, which he described in relation to emotional and social isolation where each have their different

causes and remedies (1973). Though both types of loneliness are important, emotional isolation seems to bring on the more negative feelings of loneliness compared to social isolation (Green et al., 2001; Weiss, 1973). Drennan et al. (2008) described emotional and social isolation as emotional and social loneliness. From the different definitions of loneliness, it is still obvious that most of the definitions can fit into social or emotional loneliness categories, which will be discussed in detail in the next section.

Social Isolation

Weiss described social isolation as the “absence of an engaging social network – the ‘loneliness of social isolation’” (1973, p. 19). This does not seem to relate directly to physical isolation, since one can be around others and still feel lonely (Peplau et al., 1982; Weiss, 1973). This type of loneliness can happen despite one being emotionally satisfied. For example, a wife could be happily married and not emotionally lonely, but if she becomes separated from her friends (social network) that she shares similar interests and concerns with, she may still have feelings of loneliness that are associated with social isolation (Weiss, 1973). The feelings of loneliness that are associated with social isolation are like feelings of boredom, exclusion, anxiety, emptiness, or marginality (1973) and are associated with a lower quality of life, poorer mental and physical health, cognitive decline (Cacioppo & Cacioppo, 2014) and increased mortality (Cacioppo & Cacioppo, 2014). Steptoe et al. (2013) note the particularly troubling aspects of social isolation as it related to older adults because of the decreasing economic resources, mobility, ability to travel, and death of family and friends. From Steptoe’s perspective, social isolation was viewed more as the physical isolation from society, or what he referred to as being

socially isolated (Steptoe et al., 2013), as opposed to those who may not be geographically isolated but isolated from social networks. In Steptoe and colleague's study (2013), they attempted to determine if the effects of loneliness were independent from social isolation. They found that mortality was higher among socially isolated individuals, but not among those who were considered lonely. This is important from the perspective of my research. I viewed social isolation more from Weiss's perspective of feelings of loneliness that are related to not being a part of social networks, more than from a geographical isolation, although geographical isolation from one's social network was still an important part of this study from the perspective of older adults who live in ALFs and were not physically near their social networks.

Emotional Isolation

Emotional isolation is the loneliness felt by the lack of a close emotional attachment to another, or what Weiss (1973) referred to as an "attachment figure" (p. 89). Bowlby (1946) noted early in the study of loneliness that humans form special affectional emotional bonds with a few individuals in their lifetimes and if these bonds are broken by separation or death, feelings of anxiousness and distress can follow. The feelings of loneliness that are associated with emotional isolation can mimic those feelings of a child being separated (separation anxiety) or abandoned by a parent (Weiss, 1973). More recent studies have found that emotional loneliness is more prevalent than social loneliness (Diehl et al., 2018) as well as causing more physical damage (Peerenboom et al., 2015) to the point of being positively correlated to all-cause mortality in a recent study by O'Suilleabhain et al. (2019). Although marriage is often considered a buffer

against loneliness (Stack, 1998), just being in a marriage or a serious relationship does not guarantee one will not experience feelings of loneliness. This was confirmed by a more recent study conducted by de Jong Gierveld and Broese van Groenou (2016) where they noted that approximately 17 % of married older adults still had feelings of intense loneliness. Indifferent marriages have little impact on a marriage's level of strain or support (Kim & Waite, 2014), possibly being null as a buffer to loneliness.

One of the most significant events in the life of an older adult is the loss of a spouse (King et al., 2019). Since older adults tend to have an ever-shrinking social network, the spouse becomes an important part of an older adult's life (Förster et al., 2018). Not only can the loss of a spouse be devastating emotionally, but there may also be other underlying problems that may arise that can lead to social isolation. The widowed individual must now function as a single individual without the benefit of the buffering that comes from marriage (Moen, Kim, & Hofmeister, 2001). Affection and conflict can coexist in the same relationship. So even though a spouse can be the most important source of social support, they can also be the greatest source of social strain, which is backed up by a study in 2013 by Huxhold et al., which found that participating in family activities increased both positive affect (PA) and negative affect (NA), while activities with friends increased PA and decreased NA. How and who older adults interact with while using ICTs can have a positive or negative affect on that person (Leist, 2013). My study attempted to capture narration related to the "how and who" of ICT use from both the positive and negative perspectives.

Perceptions of Loneliness Through Ageism

Some of the issues related to loneliness have to do with the perceptions people have about loneliness as well as those they perceive as being lonely. Shiovitz-Ezra et al. (2018) discussed how negative perceptions of older adults' loneliness could be exacerbated by ageism, which is being prejudice, stereotyping, and discriminating against older adults.

Our society seems to glorify youth, while either dismissing older adults or minimizing them to the point of being targets of discrimination and prejudices (Shiovitz-Ezra et al., 2018). Our distaste for growing old seems to be verified by a predicted 216.5-billion-dollar industry by 2021 designed specifically to fight the aging process (Zion Market Research, 2018). As humans, we seem to have a hate for the inevitability of aging and all that it entails; as a society we tend to have a negative view of aging and the aging process, which in turn can lead to negative feelings towards those who are considered older adults (Shiovitz-Ezra et al., 2018). This negative attitude of some towards older adults is a relatively new phenomenon compared to the 1800s when older adults were looked upon in a more positive light (Ng et al., 2015). These negative stereotypes seem to be based on the younger generation who view older adults as an economic drain (Ng et al., 2015). These types of negative attitudes towards older adults can cause societal problems, such as people harboring prejudicial attitudes to aging and older adults, discriminating practices related to assuming social roles or employment, and institutional practices that may not have been intended to cause harm, but that were based on stereotypical beliefs (Shiovitz-Ezra et al., 2018). These stereotypes were noted in a study

by Hummert (2011) when a question was asked of respondents about what they thought of older adults. The study yielded four negative and three positive stereotypes but seem to fall into the category of high warmth (good and trustworthy), but low in competence (Cuddy & Fiske, 2002). Older adults were generally viewed with sympathy even though they were often neglected and socially isolated (Shiovitz-Ezra et al., 2018). These attitudes were most prevalent in the areas of the labor market (Pasupathi & Löckenhoff, 2002) and the healthcare system (Ben-Harush et al., 2016), which is particularly relevant to those who live in ALFs. The other critical issue with stereotyping, which were noted by a research study conducted by Pikhartova et al. (2016) is that individuals who are stereotyped can start to believe the stereotypes, thus falling into a self-fulfilling prophecy. One-third of the participants in this study already had preconceived expectations of being lonely as they aged.

Sutin et al. (2015) researched the longitudinal association between perceived discrimination which was based on age, weight, and physical disabilities and the participants' feelings of loneliness. This research followed 7,622 participants 50 years of age and older every day for 5 years. It was determined that there was a positive correlation between perceived feelings of discrimination and loneliness.

Conditions Likely to Cause Loneliness

For those who have not experienced loneliness to any significant level, it is hard for those people to understand why a person who is lonely cannot simply engage in a social activity that will allow the lonely person to be around others? In fact, doing this may enhance that person's feelings of loneliness (Archibald et al., 1995). Unlike grief or

dejection, loneliness can continue until there is a replacement relationship for one who has been lost (Cacioppo et al., 2015b). There are specific age-related experiences that can lead to feelings of loneliness such as a loss of a spouse, health issues, and a reduction of social interaction (Qualter et al., 2015). With the loss of loved ones and close friends, the older adult's dwindling social network can contribute to their level of loneliness (Wrzus et al., 2013). Burholt et al. noted in a 2017 study using a bivariate correlation that showed physical disabilities and cognitive impairments are directly correlated to loneliness. In contrast, marriage has usually been associated with lower levels of loneliness (Stack, 1998), though more recent studies have found that this may not be as prevalent among more recent generations who have different views on marriage and divorce (van Tilburg et al., 2015). There seems to be mixed results when discussing loneliness among older adults. Some recent studies have reported either no increase in older adult loneliness levels (Victor et al., 2002) or decreased levels of loneliness were reported (Eloranta et al., 2015), while other studies show an increase in loneliness with age (Dahlberg et al., 2015). There are many variables that impact a cohort when it comes to determining causes and levels of loneliness. Dahlberg et al., (2018) categorized many of these variables into sociodemographic, social, and health related. Some sociodemographic factors are age, education level, and gender. Social factors might include such variables as marital status and social group affiliation, while health problem factors are health related issues that can affect one's level of loneliness (2018).

There are other causal attributions to loneliness, such as one's level of self-esteem, which is based on one's self-evaluation (Peplau et al., 1982), as discussed earlier.

There is a strong link between low levels of self-esteem and loneliness that have been confirmed in many studies (Russell et al., 1980; Wood, 1978). Low self-esteem can be a gateway to loneliness (Peplau et al., 1982) or may be the consequence of feeling lonely (Wood, 1978) making them reciprocally interrelated (Peplau et al., 1982). Rubenstein and Shaver (1980) also found that feelings of being unattractive, ashamed, or unintelligent often accompanied those who felt lonely.

It is important for a lonely person to be able to understand the reasons for their loneliness (Peplau et al., 1982) and like most problems, one must accept the fact that they have a problem before it can be addressed. People tend to view loneliness from two points of view; loneliness is either viewed as being caused by one's self or by their situation or environment (Peplau et al., 1982). These are also referred to as internal and external attributes, where internal attributes would be a physical attribute like being unattractive, or a lack of motivation, and an external attribute would be their situation, such as a lack of opportunities to meet others (Michela et al., 1981).

Older adults are particularly vulnerable to feelings of loneliness based on illnesses, loss of energy, and loss of loved ones (Hedge Forsund et al., 2014; Weiss, 1973). Retirement or having to move into an ALF can have dramatic effects on older adults, and with diminished abilities to travel, they can become geographically isolated. Retirement can have its own special impact on older adults. This is a time when a retiring older adult may feel lonely due to feeling that they are no longer productive, as well as losing work companions and comradery (Weiss, 1973). At this point in an older adult's

life, retirement can also bring moving to a new location, thus bringing on the earlier mentioned feelings of loneliness associated with geographical isolation (Weiss, 1973).

Results of Loneliness

There are affective cues in the form of feelings associated with loneliness, though Rubenstein and Shaver (1980) noted that there were no specific set of emotions that were associated with loneliness, there were serious maladies that could be attributed to loneliness. For example, stress related illnesses and psychological disorders (Cacioppo et al., 2010; House, 1981), alcohol abuse (Akerlind & Hörnquist, 1992), anxiety (Cacioppo et al., 2014; Weiss, 1973; Young, 1982), depression (Blair et al., 2016; Young, 1982), elevated blood pressure (Cacioppo et al., 2002), greater use of healthcare facilities (Gerst-Emerson & Jayawardhana, 2015), increased morbidity and mortality (Holt-Lunstad et al., 2015; Holwerda et al., 2016; Hawkey & Cacioppo, 2010), cognitive issues (Shankar et al., 2013), and suicide (Rudatsikira et al., 2007) are all positively correlated to loneliness. Warner et al. (2017) noted the correlation between one's number of physical stressors brought on by illnesses and an increase in one's risk of loneliness.

More recent studies, such as those by Sundström et al. (2019) demonstrated an increased risk of dementia associated with loneliness. This study was comprised of 1905 baseline participants who were selected from the Betula study in Sweden (Nilsson et al., 2004), which spanned a 20-year period. Sutin et al. (2018) study showed a 40% increase in the risk of developing dementia for every 1-point increase in loneliness.

Countering Loneliness, Coping

“Strong social connections are central to our physical and mental well-being. When vulnerable older adults experience setbacks or life transitions, those connections may unravel” (Marsh Ryerson, 2017, p. 124). This statement is particularly relevant to this research effort because it expresses the importance of maintaining social connections. My research examined older adults and if ICT use assisted or hindered with maintaining healthy social connections, a form of coping with loneliness. Another point that was addressed was the negative aspects of life transitions; when an older adult is moved from their current home and social network to an ALF, which may be a setback or significant life challenge that may require social support to ensure psychological well-being for those who transition (King et al., 2003). Many of the situations and conditions can be offset by introducing coping strategies that maintain social connectedness as a theme to deal with the negative feelings of loneliness and related factors associated with loneliness. Social connectedness is a human need (Townsend & McWhirter, 2005) and a recent study by Czaja et al. (2018) noted that ICT use may enhance older adults’ connectivity, especially those with mobility issues or that may live alone or in isolated areas.

Lazarus and Folkman (1984) described coping as “the constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (p. 141). How one copes with a negative situation can have a serious impact on a life stressor. For example, one can address a stressful event or feelings of loneliness by using a positive or negative

coping style (Thiruchelvi & Supriya, 2012). Positive coping revolves around thinking about the negative stressor (loneliness) and changing the nature of that stress to wield a positive outcome, whereas negative coping strategies, such as withdrawal, can lead to harmful activities and negative states, such as substance abuse or withdrawal from others (Thiruchelvi & Supriya, 2012). Unfortunately, those who were already experiencing loneliness tended to be more apt to using a negative coping strategy (Zhang & Wang, 2011).

DiJulio et al. (2018) reported two different approaches to coping, which are positive and negative approaches. The positive approach methods that most people use encompass distraction techniques that include watching television, playing video games, talking to friends, browsing the internet, and interacting with social media. Some negative coping strategies include overeating, smoking cigarettes, and abusing alcohol and drugs. Along with these suggestions for coping, a recent study by Loidl and Leipold (2019) discussed the dual-process model of assimilation and accommodation and its two modes of coping (Brandtstädter, 2017, as cited in Loidl & Leipold, 2019). Though both strategies of coping are important to all ages (Loidl & Leipold, 2019), the accommodative coping process seemed to be more relevant to older adults since it allowed for a more flexible process for adjusting goals and is considered a part of successful aging (Brandtstädter, 2017). The assimilative mode of coping is modifying one's situation to accommodate one's set goals (Brandtstädter, 2017). This can be much more difficult as one ages with health and living condition restrictions. The accommodative process of coping gives the older adult more flexibility to adjust their

goals using multiple adaptive processes, which include accommodation through reevaluation and accommodation through reorientation and disengagement (Brandtstädter, 2017). The reevaluation process of one's goals can be accomplished through cognitive reappraisal, such as viewing a critical life event from another perspective. Another method of coping is through adjustment of aspirations (Pinquart et al., 2008), which can be accomplished by replacing unattainable goals with lower, more reasonable goals (Freund, 2002), which is also a form of reorientation (Heckhausen, 1999).

Goal reevaluation could in fact be a part of what older adults will have to do to move from constant face-to-face interactions with their social networks, to using ICTs to accomplish their social networking needs. Personal interactions will have to be reevaluated and the artificial affectionate communication process may be used to assist with older adult loneliness in ALFs.

Social Support/Social Networks

The level of an older adult's loneliness is causally related to their social support network (Dykstra & de Jong Gierveld, 2004) and a decrease in social support is directly correlated to an increased perception of loneliness (Chen & Feeley, 2013). Older adults' social networks help to protect older adults from loneliness (Cacioppo et al., 2010; Chen & Feeley, 2013). Frey (1989) defined social support as "an exchange of positive affect, a sense of social integration, emotional concern, and/or direct aid or services between two persons" (p. 140). Social support may be a way to enhance successful aging among older adults (Frey, 1989; Pruchno et al., 2010). This supportive behavior from one individual

onto another can be placed into four categories (Goldsmith, 2004). These categories are emotional support, informational support, instrumental support, and appraisal support (House, 1981). Emotional support consists of support that encompass feelings of trust and love. Instrumental support includes support from spending time with someone or providing material support. Informational support is the support that comes from providing someone with information or advice, and appraisal support is providing support to someone in the form of feedback (House, 1981). All these types of support should be able to be provided using ICTs independent of the level of support received, which is important. One's level of social support has directly been linked to their well-being and probability of survival against multimorbidity, with a 50% greater chance of survival for those with a strong support structure (Holt-Lunstad et al., 2015), and an increase in loneliness being linked to a declining social network (Myers & Palmarini, 2017). Social networks provide more than just being around other individuals, according to Weiss (1973) they help to provide one with information, advice, and feedback relating to one's life and life issues from someone who they have things in common with.

Chen and Feeley (2013) suggested that feelings of loneliness may not come from a lack of social contact as much as a lack of quality social relationships. High social strain and low social support from an older adult's social network can increase their mortality (Birditt & Antonucci, 2008). Other aspects that are critical to this research are related to research by Stevens and Westerhof (2006) that declared social support from partners and friends were significantly related to lower feelings of loneliness, where

social support from family members was not related to loneliness. Cantor (1979) stated that the preferred social support for older adults was that support received by a spouse.

Social networks are also a good Segway into social events that may lead one to meet more like-minded people. One important aspect of social networks is spatial proximity (Small & Adler, 2019). Small and Adler (2019) noted the importance of spatial proximity in maintaining social networks. One must have the ability to interact face-to-face to cultivate relationships. This is relevant to my research as ICT use was studied to determine if and how they may help with buffering against loneliness by substituting actual face-to-face interactions (affectionate communications) with an artificial form of affectionate communications (using ICTs as a means of communicating affectionately).

Affectionate Communications

Floyd and Morman (1998) described affectionate communications as “an individual’s intentional and overt enactment or expression of feelings of closeness, care, and fondness” (p. 145). Expressing feelings of fondness can be expressed verbally, nonverbally, and through one’s behaviors (Floyd, 2006). Floyd (2006) described affection as a permanent feeling and having a good disposition towards another person or idea. Displaying feelings of affection towards others is critical since receiving such affection has been noted in early studies as being a fundamental human need (Rotter et al., 1972) and is a fundamental building block to acquiring and maintaining quality human relationships (Floyd & Morman, 1998, 2000). Affectionate communications have been proven to be positively correlated to increased physical health (Komisaruk &

Whipple, 1989), better mental well-being, and decreased loneliness (Downs & Javidi, 1990).

Since maintaining contact with others and expressing affection is important to one's well-being (Rotter et al., 1972), affectionate communications were an integral part of this research. For my research, artificial affectionate communications, which is using an artificial means of communicating affections using ICTs (videoconferencing ICTs for this research) was viewed from the perspective of the older adult users. This research examined, from the older adults' narrative, how they used ICTs to maintain contact with their social network and their related feelings of loneliness. ICTs (videoconferencing) were perceived as a means of expressing and receiving affectionate communications even though the users were physically separated from their social network. One of the key elements of this research was to determine the positive and negative aspects of using this form of communicating by older adults who live in ALFs from their personal narratives.

Information and Communication Technologies

Schlomann et al. (2019) described ICTs as “devices and applications that provide access to information and enable electronic communications” (p. 2). This includes such acts as communicating via telephone text messages or using other applications via the internet, such as teleconferencing. Communicating via ICTs requires the user to use a device, such as a cell phone or a computer, along with an application, such as text messaging, Facebook or other applications (Cotten et al., 2014). This act of communicating can be done via the internet, which Schlomann categorizes as “web-connected” or they can operate by “non-connected” devices such as a cell phone (p. 2).

This relatively new study by Schlomann et al. (2019) related closely to my research as it also viewed ICT use among older adults in a restricted environment (retirement communities). This research determined that 25.9% of the 1698 participants aged 80 years and older stated that they used web-based ICTs compared to 38.5% who did not use ICTs at all. Though Schlomann and colleagues' research concentrated on the oldest-old, the results seemed promising with the ICT users reporting lower levels of loneliness (2019).

Even though my research targeted an older adult population who lived in ALFs, ICTs have positively impacted other cohorts such as the oldest of old and younger cohorts. Younger cohorts have benefited by using ICTs, which were credited with increasing their sense of mattering (Watulak et al., 2014). Another recent study by Francis et al. (2017) on ICT use by older female adults, studied the impact of ICT use on the participants' feelings of mattering. Mattering is a person's perception of their importance and acknowledgement by others (Thoits, 2011). The concept of mattering is positively correlated to feelings of well-being, self-esteem, and overall wellness and is inversely related to loneliness (Thoits, 2011). The study by Francis's team was limited geographically and demographically, which was conducted in the deep South with participants who were predominately white women. Another limitation was the narrow focus of the study; the researchers note that future studies should also include different types of ICTs that are being used as well as their frequency (Francis et al., 2017), which are some aspects that were addressed in my research. Though Francis's research had

some limitations, it did reveal the positive aspects of ICT use among different cohorts (2017).

Studies such as the Scholmann et al. (2019) on ICT use, as well as many others, to include this research, is important and relevant because ICT use has become an integral part of everyday life for many people in modern societies (Hunsaker & Hargittai, 2018; Wahl & Gerstorf, 2018). ICT use can increase older adults' feelings of connectedness with friends and family (Cotten et al., 2013, 2014) and is critical for good health, one's quality of life, and overall well-being (Damant et al., 2017; Rowe & Kahn, 1998). This form of social networking provides older adults with the ability to receive support, gain information, and maintain contact with their social networks (Cotten et al., 2014), as well as increases their feelings of mattering (Francis et al., 2016). Another critical and relative aspect of maintaining social networks is that ICT use can give older adults a symbolic connection to their social networks (Cotten et al., 2014).

Information and Communication Technologies and Older Adults

Technology use among older adults has been of interest to researchers since the 1980s (Robinson et al., 1988) with the concentration being on how technology can be adapted for older adult use (Clark et al., 1990). In more recent studies, such as those by Nimrod (2019), it seemed evident that ICT use could not only be adapted for use by older adults, but that they gain something positive from their use. Though it seemed the benefits of ICT use among older adults and their correlation to lower levels of loneliness would be obvious, there are contradictory results, as mentioned previously. One important reason for this research was to add to the knowledge of ICT use among older

adults, especially since there have been contradictory results relating to loneliness. There have been some studies that have shown a correlation between ICT use and lower levels of loneliness and overall well-being among older adults (Cotten et al., 2013; Damant et al., 2017; Forsman & Nordmyr, 2017; Forsman et al., 2018; Jun & Kim, 2016; Kim et al., 2016), while other studies show the inverse (Bell et al., 2013; Caspi et al., 2019; Khosravi et al., 2016; Matthews & Nazroo, 2015; Woodward et al., 2011). A recent study by Czaja et al. (2018) demonstrated a positive outcome, with a reduction of social isolation related issues, decreased loneliness, and increased connectivity. One downside to this study was that it concentrated on a specially designed computer system that included its own software. The study was a randomized field trial of 300 older adults that was conducted at three different locations. Again, there were positive results, but the ICT required special equipment and software (Czaja et al., 2018). One observation from this study that related to my research study was a comment stating, “It would also be interesting to examine if new forms of communications such as videoconferencing result in added benefits” (Czaja et al., 2018, p. 475).

The Cotton et al. (2013) study was a regression analysis of 205 older adults designed to determine the association between the amount older adults went online and isolation and loneliness. The results of this study indicated that a 1-point increase in going online correlated with a decrease of .147 in loneliness. Though there was a positive correlation between online usage and loneliness, there was no change in perceived social isolation. Overall, the study indicated a direct positive impact between online usage and a decrease in loneliness. The Damant et al. (2017) research study noted both positive and

negative aspects of the older adult participants' quality of life (QOL). This research consisted of a review of related literature between 2007 and 2014 using a framework analysis approach. Their research noted that there was an increase in the participants' sense of control and independence, with an improvement in overall well-being. This research suggested that most of the qualitative studies that were reviewed concluded with a positive outcome for ICT use in relation to loneliness, while the quantitative studies showed a negative or insignificant correlation. While the Damant research showed more negative results relating to ICT use and loneliness for the quantitative studies that were reviewed, the Forsman and Nordmyr (2017) study, which was a systematic review of 18 quantitative and 14 qualitative studies, noted a positive correlation between internet use and mental health. Similar positive results were identified from the 14 qualitative studies that were examined. Though the Forsman et al. (2018) study was a review of only six other studies that were considered of high or moderate quality; three of these studies did show that using computing and the internet did have a positive impact on participants' well-being and reduced loneliness. The Jun and Kim (2016) study also found a positive correlation between internet use and lower levels of depression and suicidal ideation and increased social relationship satisfaction. This study examined 6,306 adults 50 years and older from previous Korean Welfare Panel studies. Kim et al. were also involved in another related study in 2016 about ICT use and successful aging. Kim et al. (2016) used data from a 2011 National Health and Aging Trends study with 6,476 older adults. One overall result was a positive correlation between using communications technologies and positive formal and informal social participation among both women and men.

Along with the positive aspects of ICT use and well-being, are some negative or insignificant study results. Bell et al. (2013) research study was a cross-sectional survey of 142 older adults that examined the relationship between Facebook use, loneliness, social satisfaction, and their confidence in using such technologies. The research determined that there were no significant changes in the participants' level of loneliness between social network users and nonusers. Caspi (2019) completed a study of 151 adults aged 18 to 83 to determine if their subjective age was impacted by technology use. The younger participants' subjective age assessments were not negatively impacted by using unfamiliar technology, whereas the older adults felt older, suggesting that using technology may evoke stereotype threats related to self-perception and that the older the participant was, the more likely they were to feel less successful with using technology. Khosravi et al. (2016) conducted a systematic literature review of research that involved the use of different types of technologies and the impact of these technologies on alleviating social isolation among older adults. In the general ICT category, it was determined that three of the fifteen studies showed no positive correlation between using technology and the reduction of loneliness. Under the social network sites category, three of the five studies showed no difference in loneliness between social network site users and nonusers. Khosravi and colleagues (2016) noted that since there was a possibility of adverse effects on long-term older adult technology use, further studies should be conducted. The Matthews and Nazroo (2015) research, which was based on data gathered from a review of existing literature and an analysis of the English Longitudinal Study of Ageing (Stephoe et al., 2013) determined that frequent internet use positively correlated

with higher levels of loneliness. The Woodward et al. (2011) study was a randomized controlled trial using 45 participants in the experimental group and 38 participants in the control group. This research was designed to determine if training on ICTs would increase their use and if it would impact the participants' social support and overall mental health. The results of the research indicated that there were no significant improvements in social support measures, loneliness, or depression.

Dickinson and Gregor (2006) suggested that the benefits of ICT use among older adults have been overstated, while researchers such as Sum et al. (2008) found that ICT use correlated positively with lower social isolation but inversely to emotional isolation. There have even been some studies that showed no impact at all from ICT use (Slegers et al., 2008; Woodward et al., 2011). The Slegers et al. (2008) study was a randomized controlled trial of 191 participants. Though this study was related to computer use and the internet, the study did conclude that there were no significant changes in loneliness among the intervention and controlled groups. Forsman et al. (2018) found that many of the different outcomes to many of these studies had to do with methodological discrepancies or insufficiencies, while Hunsaker and Hargittai (2018) found differences in many of the common definitions. Lifshitz et al. (2018), on the other hand, found that many of the studies adopted a macro level approach to ICT use, thus allowing for misleading generalizations. Szabo et al. (2019) referenced three different forms of ICT use, which were described as communication, information, and task performance. With the multiple uses of ICTs, categorizing their use in such broad categories may have been one reason why Szabo et al. noted some discrepancies in generalization. Even though

Szabo's research confirmed that ICT use as communications did reduce loneliness (2019), the context seemed to be related to past research simply addressing ICT use as a one-category system, since studies that examined a specific type of technology and use "provided a deeper understanding of the benefits of ICT to older adults" (Nimrod, 2019, p. 2). The Nimrod (2019) study noted the benefit of ICT use among retirees, giving them the ability to stay in touch with former colleagues as well as helping widowed older adults to better cope with loneliness. This study noted the positive aspects of filling the distance gap between older adults and their families and friends, as well as being a vehicle for knowledge growth. Nimrod (2019) noted "The most dominant compensating ICT function appeared to be communication, which preserved social engagement, offered a channel for social support, and decrease loneliness" (p. 8). Even though I researched ICT use via videoconferencing for communications purposes, as Nimrod (2013) noted, more than one event can occur at the same time, such as communicating and gaining information.

Older adults are not viewed by friends, family, or themselves as old, as long as they stay active and productive (Kaufman, 1986), which could be related to the predictors of cognitive function, where one's education level was a strong predictor of high cognitive function (Albert et al., 1985). This predictor could be enhanced by older adults using and maintaining proficiency with ICTs even though many older adults have decided not to interject technology into their lives based on multiple misconceptions, to include fear of breaking the technology and fear of not being able to learn the new technology (Waycott et al., 2016). There are also other negative considerations to

consider with ICT use. For example, Leist (2013) noted that there have been negative aspects of communication with ICTs, such as misuse of personal information, or the sharing of incorrect information. Again, having multiple studies with different results related to a complicated subject, is one of the main reasons this research addressed both positive and negative aspects of ICT use as it related to loneliness.

Data released from the Pew Research Center in 2017 revealed that older adults are more digitally connected than in the past, with 67% of older adults using the internet and 43 % of them using smartphones (Anderson & Perrin, 2017). 81% of the Pew research participants believed that using technology to maintain contact with family and friends was essential and particularly important for older adults with mobility issues (Francis et al., 2017), since being mobile would allow them to maintain physical contact with friends and family (Vroman et al., 2015).

Summary and Conclusions

Chapter 2 is an overview of the concepts and key relative themes associated with loneliness as it related to older adult ALF residents who use ICTs to maintain contact with their social network.

The literature review began with some brief statistics on older adults as a growing population, discussion on the perceived gap and ongoing problems related to older adults and loneliness, and an explanation of the purpose of the research. This was followed by an explanation of the literature review process, to include literature related to the two main overarching concepts of this study, the social needs model and the buffering hypothesis. This was followed by a literature review of the main themes related to this

study, which were aging and older adults, older adults and ALFs, loneliness and related concepts, coping with loneliness, affectionate communications, and ICTs.

During the literature review, conflicting results emerged on the impact of ICT use and their impact on loneliness, specifically older adult loneliness. This led to Czaja et al. (2018) and Siniscarco et al. (2017) to state that the limited data on older adult ICT use warranted further study. This research was undertaken based on their research and the lack of studies relating to videoconferencing and older adult ICT use. Chapter 3 will discuss the research design and rationale in detail.

Chapter 3: Research Method

Introduction

The purpose of my qualitative research was to examine the role that ICTs have on loneliness from the perspective of older adults who have moved to ALFs and are a significant distance from their physical social network. This research delved into the experience of older adults who had used videoconferencing technologies to maintain contact with their social network, and how this population described their experience with ICT use as it related to their feelings of loneliness. For this research, the ICTs discussed are videoconferencing hardware and software.

Chapter 3 consists of the research design and rationale, including discussions on the importance of and the role of the researcher and the researcher–participant paradigm. This is followed by a detailed section on methodology, where instrumentation and procedures for recruitment and data collection are explained, as well as the data analysis plan. The chapter closes with a section on issues of trustworthiness and a chapter summary.

Research Design and Rationale

This study explored older adults' ICT use among residents of ALFs and how this technology related to the participants' feelings of loneliness. This research addressed the following qualitative research question:

RQ1—Qualitative: How do older adult ALF residents describe their experience with ICT use as they perceive it relates to their feelings of loneliness?

Central Research Concepts

My research was grounded in two conceptual ideas, the social needs model that states that all humans have a universal basic need for social contact (Kupersmidt et al., 1999) and the buffering hypothesis, where Cohen and Wills (1985) pointed out that social support acts as a buffer against possible stressful events and the absence of close relationships can increase depressive events (Lowenthal, 1965, as cited in Russell et al., 1997). Cutrona et al. (1986) described the buffering hypothesis as involving social interaction that assumes a protective role during times of high stress through the use of coping mechanisms. The social needs model and the buffering hypothesis were the best lenses through which to view older adult loneliness as it related to ICT use. I believed that the best method to acquire experiences relating to loneliness and ICT use from this population was by using a narrative inquiry approach. This population is a small sample of the older adult population who resides in ALFs, which is a population whose members are limited in their ability to travel and thus in their ability to meet their social needs. With these central concepts in mind, my research used the narrative inquiry approach to ensure that an in-depth exchange of experiences was relayed about this population, ICT use, and loneliness.

The Research Tradition

This research was based on the qualitative research tradition. Unlike quantitative research, which is used to test theories by examining the relationships between variables that are measured using a statistical tool, qualitative research is an exploratory approach designed to understand a social or human problem from the individual's perspective

(Creswell, 2014). The qualitative approach allows for data to be collected in the participants' setting from open-ended questions that allow the participant to describe their experiences and feelings as they relate to a particular subject (Creswell, 2014). Only recently, in the latter half of the 20th century, did this form of inquiry begin to gain popularity in the social sciences, becoming even more prevalent in the 21st century (Creswell, 2014). This inductive style of inquiry allows for one to gain knowledge from an overarching perspective based on what can be years of one's experiences (Creswell, 2014).

Though my research could have been accomplished to some degree using a quantitative approach, I believe that a qualitative inquiry allowed for a more open, two-way process that gave a deeper understanding of how older adults felt about ICT use from their experiences and how they felt that the use of ICTs related to their loneliness, both positively and negatively. Though a postpositivist, quantitative approach may have given some direct statistics about specific questions, this approach would not have allowed for elaboration of the intricacies that an older adult may feel from an overarching perspective about ICT use. The qualitative approach from the constructivist worldview allows for an open, broader approach that may assist participants in developing subjective meanings of their experiences (Creswell, 2014). This less structured approach can allow participants more flexibility in telling their stories, thus lending to the possibility of further discussions into areas that might be relevant but were not questions that were initially asked. The nature of the qualitative inquiry approach allows for broader, open-ended discussions that can bring other factors such as historical, sociodemographic, or

cultural aspects into the research. This was particularly relevant to this research from the perspective of the participants being physically isolated from their social networks.

Another positive aspect of the qualitative approach is that the data are collected in the participant's natural setting, which allows for observations and discussions about their behaviors in a comfortable setting. This helps in acquiring information that comes from what the participant means rather than meaning acquired from the researcher or literature (Creswell, 2014).

Within the qualitative research approach, there are several designs that were considered but ultimately rejected in favor of the narrative research design. I first looked at using the phenomenological qualitative approach because it involves approaching research from descriptions of participants' lived experiences (Creswell, 2014). I felt that this would have been a viable approach, but it seemed more restrictive in its structure when compared to the narrative approach, which allowed for more "storytelling" and thus allowed me to collect more relevant information from multiple perspectives of the participants. The grounded theory approach is directed more from the derivation of a theory based on the view of the participants. The ethnography approach is based in anthropology and is focused on the cultural aspects of behaviors and actions of an individual; case studies seem to be tailored more toward a program or process (Creswell, 2014). Looking at all the benefits and disadvantages of the all the qualitative approaches, along with the quantitative approach, I decided that qualitative narrative inquiry was the best design for my research.

The Narrative Research Method

The narrative research method of inquiry is a qualitative approach that is built on gaining information from detailed accounts from individuals' experience by having them tell stories about a subject in their own words (Creswell, 2014). Narrative research is accomplished by studying a person's experiences and their meaning from that person's perspective. One of the main goals of the narrative method is to assist in the generation of detailed explanations of accounts rather than brief or generalized answers. This is done by the researcher being an active participant in the narrative process (Creswell, 2014).

The narrative methodology is rooted in sociology and anthropology, with its beginning noted in a 1918 work by Thomas and Znaniecki (as cited in Laureate Education, 2013) and is based on constructivism, which means that the narratives are created by the individual based on their personal experiences and are the primary way that humans explain their life experiences (Kohler Riessman, 2008).

Role of the Researcher

As a qualitative researcher, I was the key instrument (Creswell, 2014) or "primary data collection instrument" in this research (p. 207). Though I was the key instrument in my study, from a narrative analysis approach using a responsive interviewing style, I formed relationships with the participants that were built on mutual trust and respect (Rubin & Rubin, 2012) to accomplish my goals as the researcher. One of my first goals as a researcher in building a relationship was to foster a sense of collaboration and partnership (Laureate Education, 2013). The research process was accomplished with the underlying knowledge that both researcher and participant were emotional beings who

bring their own experiences and biases to each conversation, and that this required the sharing of mutual feelings about the subject being discussed (Rubin & Rubin, 2012). It is important to remember that my background and experiences as the researcher assisted in shaping my interpretation of the data and the direction of this research (Rubin & Rubin, 2012). Fink (2010) summed up the role of the qualitative researcher with this quote:

The qualitative researcher must be expected to feel very personally involved in every step of the research process, because every consideration and decision will have to be based on entirely personal grounds. A role I believe that seen from the researchers' perspective is experienced as very complex to handle. (p. 7)

Personal biases notwithstanding, the quote from Fink demonstrates the complexity and emotional involvement of all those involved in this type of research. It was critical that as the researcher I kept my personal background and sociodemographic factors in mind that might have impacted my interpretation of data, as well as the positive interaction with participants. Specifically, I maintained awareness of my past experiences with ALFs, including residents and staff. For the past 5 years, my mother-in-law has been an ALF and memory care resident, which has afforded me multiple interactions with many residents of these facilities, as well as staff and facility owners. This year, I also fell into the older adult category; I have not yet decided whether this was a negative or positive development when it came to my research. I do believe that most people feel more comfortable when dealing with people with whom they are able to relate on some level. As superficial as it may sound, I believe that my outward appearance played a role in my interactions. For example, I believe that being older (having a white beard) assisted

in establishing a level of commonality. I believe that the participants decided that they could relate to me, at least initially, just based on outside appearances. This assisted in building an environment of trust and mutual respect.

I do know that I have taken this research seriously not only because of my time spent with older adults in ALFs, but also because this research will have a profound impact on me personally sooner rather than later. Keeping these potential biases at the forefront of my thought process while conducting this research assisted me in maintaining an appropriate level of objectivity and professionalism while still allowing the participants to feel comfortable.

Methodology

Participant Selection Logic

The population that was chosen for this research consisted of volunteers who were residents of ALFs in North Alabama. The age requirement for a participant was based on the WHO's (2019) definition of people 60 years or older, although much of the past research and statistics were directed toward those 65 years of age and older. The participants were also required to have past or current experience using videoconferencing ICTs and to be physically separated from most of their social network. Another criterion for inclusion in this research was that the participants must not suffer from any mental or physical ailments that would interfere with their participation, and they must be able to communicate in English. Participants were selected based on meeting the earlier mentioned requirements and volunteered based on a posted flyer (Appendix A) in each facility. Participants had to give consent to participate and

understood that they could withdraw from the study at any time, and that their identities and data that were collected would be protected and secured until being destroyed after a 5-year period from the time the data were collected. Coding was used to ensure that participant identities were kept private, and relevant name/code information was also secured with raw data and would be destroyed after the 5-year period.

Sampling Strategy

Although sample size is an ambiguous topic in qualitative designs, the reasoning for smaller sample sizes was justifiable, as well as flexible (Patton, 2015). For this research, I used a purposeful sampling strategy, selecting older adults who resided in ALFs with experience using ICTs. Purposeful sampling is sampling that is based on selecting participants with extensive experience with the phenomenon that is being studied (Patton, 2015). I selected a sample of participants who resided in North Alabama ALFs, accomplishing my objective of reaching a point of redundancy/saturation with as few participants as possible. Of course, this was based on the quality of data that were recovered during the in-depth interviews. Qualitative studies are known for having fewer participants than quantitative studies based on the depth of the data rather than the breadth (Patton, 2015). Qualitative inquiry is based on gaining in-depth data from the participants, so sample size estimates needed to be flexible (Patton, 2015). I was able to gain a credible amount of data from the five participants. Patton (2015) stated that “sample size depends on what you want to know” (p. 311), as well as the credibility of the data that are recovered. Understanding and reminding myself of the purpose of the study assisted in guiding my intellectual judgement. Patton (2015) mentioned several

qualitative studies with as few as one participant that ended up being breakthrough studies in the field of psychology. An example of research that was completed with just a few participants is the research underlying Freud's entire theory of psychoanalysis, which was based on his work with fewer than 10 of his client cases (Patton, 2015).

Keeping the importance of rich, in-depth interviews in mind, quality open-ended initial and follow-on questions were critical for gaining credible, information-rich data that led to a valid study.

Instrumentation

As the primary instrument for this qualitative study, I used in-depth telephone interviews to minimize my interaction with the participants during the pandemic. I audiotaped and maintained field notes of relevant comments and observations to ensure that the data that were collected were related to the phenomena being researched. As a qualitative researcher, I relied on my own collected data and observations instead of depending on other external instruments (Creswell, 2014). I personally collected and transcribed the raw data to minimize the number of individuals who had access to personal data. I completed two interviews with each participant to ensure validity of data. A form of triangulation was accomplished by performing multiple interviews to gain different perspectives from the participants (Creswell, 2014).

Procedures for Recruitment, Participation, and Data Collection

Recruitment Procedures

Upon Institutional Review Board (IRB) approval and approval from participating ALFs, the recruitment flyers (Appendix A) were posted. The ALF selection process

included an ALF Participation Request Letter or Email (Appendix C). After IRB approval, this letter was sent to each potential participating ALF to request permission for this research to take place at that facility.

The participants were selected based on a purposeful sampling strategy. Patton (2015) described this strategy as one in which the selection of participants is made based on them being “information rich” in the phenomenon being studied (p. 46). Along with meeting the requirements of being past or present ICT users, there were other demographic and health-related requirements that had to be met for individuals to qualify to participate (See Participant Selection Logic section for requirements). Participants had to initially contact me via telephone or by email to volunteer. Prescreening questions (Appendix D) were asked to ensure that each volunteer met the qualifications for participation. Once potential participants passed the prescreening and verbally agreed to participate, they were informed of the nature, benefits, and risks of the study. Participants were then given a participant informed consent form for review and signature, which addressed the research timeline, potential risks, potential benefits, and security/confidentiality of retrieved data and personal information. The participants were notified that they would be given a \$25 token of appreciation prior to each interview session and that they could opt out of the research at any time while still receiving the token. The Participant Informed Consent Form was signed by the participant prior to the start of the initial interview. After the prescreening process was completed, a follow-up phone call occurred to establish the time, date, and specific location for the initial

interview. The Participant Informed Consent Form was explained in detail before the participant signed the document prior to the first interview.

Data Collection

I used primary sources of data gathered from the older adult participants, which were collected from in-depth qualitative interviews that I conducted. These interviews were audio recorded (Rubin & Rubin, 2012) to gain knowledge about loneliness and technology use from the perspective of the older adult participants. I performed all transcriptions of audio to ensure the accuracy and privacy of the respondents' information. An observation protocol consisting of field notes that were taken to record descriptive notes such as the physical setting, unusual behaviors or events, as well as a place to note any personal thoughts, feelings, ideas, or impressions (Creswell, 2014) was used. The interview process followed an interview protocol (Appendix F) that consisted of the interview questions (Appendix B), as well as an outline to follow during the interview process. It covered an introduction and recap of the research, what occurred during the interview, a reminder that the respondent could exit the research at any time, a review of my contact information, the exit procedures, and a closing statement.

The data were collected in a setting that was comfortable for each participant. The telephone interviews were conducted from each participant's room at their ALF. This ensured a level of purpose and seriousness was maintained during the interview process, as well as made it more comfortable if a participant wanted to exit the research. To enhance data triangulation, field notes were taken of observations relating to the context of the participants' actions to assist in the validation process. This triangulation of the

participants' experience was accomplished by performing two interviews to confirm previous data, thus increasing the research validity (Scott, 2007). The concept of performing more than one interview was mentioned in the recruitment flyer (Appendix A). Most interviews lasted less than an hour. More than two interviews were not necessary. Participants were also required to complete an informed consent form. The consent form was collected prior to the beginning of the interview process. After the final interview, participants were given an exit interview/briefing. The exit briefing (Appendix E) consisted of a debriefing that covered an overview of our interactions, as well as a review of data storage and privacy procedures that would be employed:

- participant name/code information would be password protected on a separate document and secured on the researcher's computer
- all data would be converted to electronic format and stored on researcher's secure computer
- all electronic data would be destroyed after 5 years of secure storage
- data would be stored on a separate hard drive that could be removed and stored/secured when not in use
- all raw data would be loaded into a qualitative software package called NVivo, which is a graphics-based qualitative data analysis tool

The follow-up recruitment plan was to be initiated if there were too few participants resulting in insufficient data being collected. This plan consisted of attempting to locate additional participants from the current approved facilities, followed

by contacting new facilities, and finally, by increasing the number of interviews with the current participants as required. The follow-up recruitment plan was not needed.

Data Analysis Plan

The process of data analysis began once the raw data were transcribed and loaded into the NVivo analysis software. Creswell (2014) noted that data collection and pattern analysis in qualitative research proceeds “hand-in-hand” during the development of the other parts of the study, such as the data collection and writing the findings (p. 195). Data were analyzed in chronological order for each participant to prepare data for coding, analysis, and theme placement. Raw data from field notes and recordings were transcribed and organized for the preparation of the data analysis (Creswell, 2014). The data were read and coded using the NVivo software. The coding phase consisted of organizing the data into coded sections that represented each segment of data (Rossman & Rallis, 2012). The codes were determined based on the data that were collected and maintained in the NVivo database. The data were then incorporated into patterns and themes, which were interpreted (Creswell, 2014) for the research findings.

Issues of Trustworthiness

Credibility

Credibility for my research was accomplished by following the guidelines proposed by Creswell (2014) for internal validity or accuracy of the research. Although Creswell (2014) discussed eight different strategies to assess the accuracy of one’s findings, all eight were not required. For this research, I used triangulation, saturation, clarifying the bias, and reflexivity.

To enhance credibility, triangulation was used by performing more than one interview to confirm previous data (Scott, 2007), which was discussed in more detail in the previous data collection section. I used related field notes to add to the interview data. Saturation was accomplished when the data acquired became redundant and no new information was available (Charmaz, 2006). Reflexivity and clarifying the bias are joint concepts that required me to reflect on my past experiences, my background, and culture (Creswell, 2014) and clarifying the bias happened with additional self-reflection to ensure biases were brought to the forefront, understood, and noted (Creswell, 2014).

Transferability

Transferability for my research was accomplished using rich, thick descriptions to assist in conveying the findings to ensure the reader is transported into the setting (Creswell, 2014). Though a variation in participants is ideal, this research used purposeful selection based on the facilities that were willing to participate in North Alabama.

Dependability and Confirmability

The element of dependability was established in this research by ensuring the process of data collection, analysis, and presentation would be repeatable when performed by other researchers during different research projects (Gibbs, 2007). This was accomplished by using best practices during data collection, analysis, and reporting. Confirmability is the qualitative counterpart to objectivity and is a process of instilling trustworthiness (Lincoln & Guba, 1985) by process verification (Creswell, 2014). This

was accomplished in this study using reflexivity, reflecting on my past experiences as the research progressed through each phase (Creswell, 2014).

Ethical Procedures

The overarching ethical guidelines by which this research was conducted were the American Psychological Association's (APA) *Ethical Principles of Psychologists and Code of Conduct* (2017). My research was performed keeping the five general principles of this handbook in mind. The principles are, (a) beneficence and nonmaleficence, meaning that I strove to ensure my research was beneficial to those who I interacted with and that I did no harm, (b) fidelity and responsibility, meaning I acted in a professional manner and built trust with the participants of my research, and maintained a friendly and professional demeanor, (c) integrity, meaning I acted like a professional and never cheated, stole, engaged in fraud, or misled those who I interacted with, (d) justice, meaning I ensured my research was available to all those that may benefit from it, and to do so without bias, and (e) respect for people's rights and dignity, meaning I treated everyone I interacted with respectfully and with dignity. This was also a major step in building trust between me and those who participated in this research.

To ensure I followed the proper procedures in accordance with the Internal Review Board (IRB) of Walden University, no research was conducted before IRB approval. Once IRB approval was granted, I used the *Research Ethics Approval Checklist* (Walden University, n.d.) to ensure I followed the ethical guidelines set by Walden University.

The participants were informed of the research process, to include what the research was about, potential benefits and risks, how their data would be collected, stored, used, and how and when the data would be destroyed. The participant informed consent form was discussed and explained in detail to the participants, which covered the research timeline, potential risks, potential benefits, and security/confidentiality of retrieved data and personal information. The Participant Informed Consent Form was signed by each participant prior to the start of the initial interview. After the pre-screening process was completed, a copy of the Participant Informed Consent Form was given to the participant for review. These documents were collected prior to the start of any research. Participants were treated with respect and dignity in an environment that they were comfortable in. I ensured that they understood that they could withdraw from the research at any time and still receive their token of appreciation. I ensured that the participants understood that I would guard their personal information, which was coded in qualitative software files, along with raw data, and recordings and secured on password-protected files on a computer that was only accessible by the researcher.

Summary

Chapter 3 began with an introduction and discussion about the research design and rationale. I explained my reason for using the narrative inquiry and its benefits for this research. The next section discussed the central research concepts, which are the buffering hypothesis and the social needs model. This was followed by an explanation of the research tradition, covering qualitative research and, the narrative research method. The role of the researcher was discussed in detail because of its importance to the

qualitative research process. The methodology section followed with an explanation of participant selection, sampling strategy, instrumentation, recruitment procedures, participation, data collection, and the data analysis plan. The next section covered issues of trustworthiness, followed by the final section that covered ethical procedures related to my research. The results of the research will be reported in Chapter 4.

Chapter 4: Results

Introduction

The purpose of my qualitative research was to examine older adults' experience with ICT use as they perceived it related to loneliness from the perspective of older adults who had moved to ALFs and were a significant distance from their physical social network. This research delved into the experiences of older adults who had used videoconferencing technology to maintain contact with their social networks, and how this population described their experience with ICT use as it related to their feelings of loneliness. The research question for this research was the following:

RQ1—Qualitative: How do older adult ALF residents describe their experience with ICT use as it relates to their feelings of loneliness?

Chapter Organization

The primary goal of this research was to understand how older adult ALF resident ICT use related to feelings of loneliness, with the main objective being adding to the knowledge base on older adult ICT use and loneliness. The chapter is organized into a category and subcategories developed from the interview questions that were asked, based on answering the RQ. The narrative feedback from each participant is discussed in detail in the Results section of this chapter. Along with the interview question results, there are detailed sections on the research setting, participant demographics, data collection, data analysis, evidence, and trustworthiness. The chapter ends with a summary.

Setting

The research study took place in the summer of 2021 in ALFs that were in North Alabama. I used telephones and recording equipment to conduct the interviews. Each telephone interview was conducted at a time that was convenient for the participant. The participants conducted the telephone interviews from the privacy and comfort of their own rooms.

There were no personal conditions from my perspective that influenced the participants or their narratives at the time of the study that might have influenced the study results. From an organizational point of view, there were no conditions that influenced the research process. COVID-19 restrictions were in place, but this did not impact the research because all the interviews were completed by telephone. I was able to communicate effectively with the facility leadership, staff, and participants telephonically with no major issues. Though the interviews were conducted via telephone, instead of using a face-to-face method, I did not see any indication of a condition that might have interfered with the data collection process.

Demographics

The demographics of the participants are listed in Table 1. The particular demographic data collected were specifically related to this research study, with some of the data acting as study qualification matrices. For example, requirements for inclusion in the study included age and status as a current ALF resident. Other relevant demographic data were collected for a general understanding of who the participants were and possibly to assist future researchers. The demographic categories were age, race, gender, marital

status, education level, whether the participant still drove a vehicle, whether the participant had other means of transportation, and length of residency in the ALF. The length of residency demographic was added based on some of the data that were collected. Though this was a small participant pool and length of residency was never intended to be a key point of interest, the data collected, which are discussed in later sections, tend to point to different attitudes toward ALFs in general depending on residency length.

Table 1

Demographic Characteristics of Participants

Demographics	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5
Age	89	88	88	85	87
Race	White	White	White	White	White
Gender	Female	Female	Male	Female	Female
Marital status	Widow	Widow	Widower	Widow	Widow
Education level	2 years, no degree	3 years, no degree	4 year degree	High school	High school
Drive a vehicle	No	No	No	No	No
Other means of transportation	Yes	Yes	Yes	Yes	Yes
Length of residency in ALF	> 36 months	< 1 month	< 2 months	> 96 months	>30 months

The participants in Table 1 were all from two ALFs and were chosen based on a series of prescreening questions (Appendix D). It was extremely difficult to obtain interest from ALFs to participate in this research. Over 50 ALFs were contacted, and approximately five showed any interest. Out of those five, only two facilities participated.

Data Collection

Once the interested participants contacted me, I determined their feasibility as participants by using the prescreening questions in Appendix D as a guide. Once the participants qualified and agreed to participate in the research study, they were given the participant informed consent form to read and sign before any research began. The participants were given a copy of the consent form, and I maintained one for my records. Upon receipt of the consent form, a date was established for the first interview. Once the first interview was completed, an additional date was set up for the second and final interview. The second interviews took place approximately 7 days after the initial interviews. The same interview questions (Appendix B) were asked during both interviews to increase research validity and data trustworthiness. The interview lengths are listed in Table 2.

Table 2

Length of Participant Interviews

Interview length	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5
Interview 1 length	25 minutes	61 minutes	53 minutes	85 minutes	44 minutes
Interview 2 length	22 minutes	46 minutes	35 minutes	97 minutes	26 minutes

The interviews followed an interview protocol (Appendix F) that consisted of interview questions (Appendix B). The first interviews ranged from 25 to 85 minutes. The second interviews ranged from 22 to 97 minutes, with most of the interviews lasting less than 1 hour. The average participant interview time for both interviews was 49 minutes. When the longest and shortest interviews from Participants 1 and 4 were removed, the average interview time was 44 minutes, which seemed adequate and allowed for in-depth interactions. The highest and lowest interview averages were from Participants 1 and 4, respectively. These extreme differences in interview times between the two participants were specifically related to their personalities. Participant 1 was direct in answering her questions and did not elaborate much, even with additional prompts. Participant 4 was the exact opposite of Participant 1; she was very talkative and related many of her answers to stories, which contributed to a much better understanding of her feelings and is why more information was gleaned from Participant 4. The interviews were recorded using an iPhone 12 Max that was integrated into a Zoom H6 Handy Recorder. I transcribed all recorded data to Word documents, which were then analyzed and transferred to the NVivo (March 2020 version) software into thematic categories (see Data Analysis section). Themes were not pre-established but were created based on the participants' narratives.

All data collected from each participant were stored electronically in a password-protected system, along with a removeable hard drive that was secured separately from my computer. There were no data collection variations from the data collection plan

(Chapter 3). Participants were assigned participant numbers based on the order in which they joined the research study (Participants 1 through 5).

Data Analysis

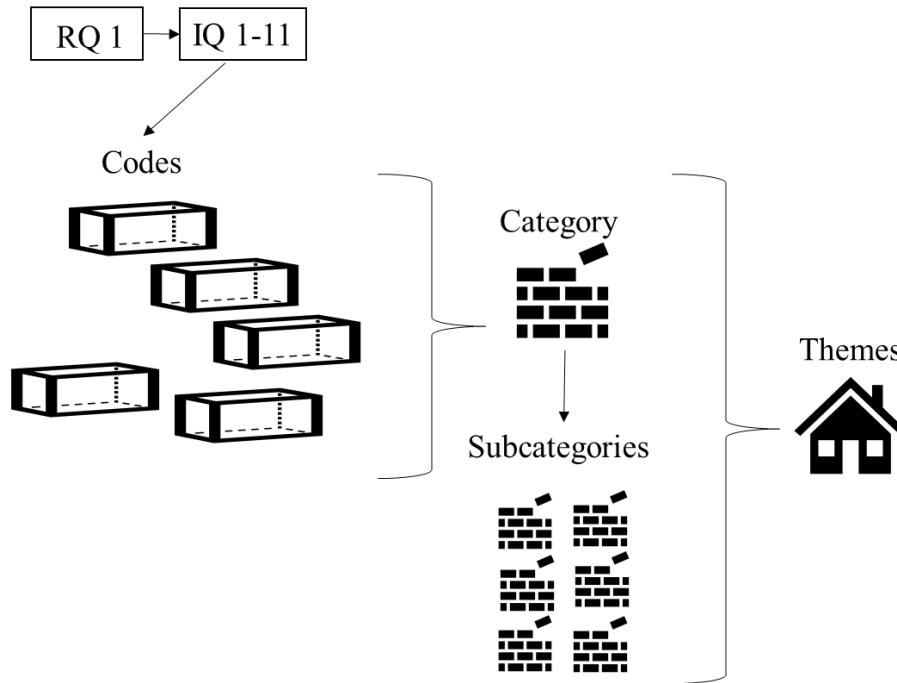
As each interview was completed, the data were transcribed and placed into the NVivo software under participant interviews, with the participants being identified with the numbers 1 through 5. Once all the transcribed raw interview data from each participant were input into NVivo, the data were analyzed, coded, categorized, and placed in themes according to Saldaña (2016). Data were transcribed into specific codes, which were then categorized. These categories were then developed into overarching themes. Approximately a week after the first raw data were collected from each participant, the second interview was conducted to ensure that there was thematic consistency between the two interviews.

The raw data retrieved from each interview were compiled from the narratives of each participant based on the particular interview question. Though some of the questions did not initially seem to be particularly relevant to the research question, ultimately, all the questions assisted in gaining a clearer overall picture of each theme. For example, some of the initial interview questions did not directly relate to ICT use or loneliness but were directed more toward the participant's overall feelings about living in an ALF and the relationships that they had developed since living there, as well as some of the relationships that were lost due to living in an ALF. Though the first couple of questions were not directly related to ICT use and loneliness, they did provide an overall picture of the participants' feelings about their current living environment and internal ALF

relationships, which ultimately seemed to have an impact on their need for ICT use. Since these areas were not the primary concentration of my research, there is a need for further research. I discuss this in more detail in Chapter 5.

As the interview transcripts were read and reread several times, sections of narratives were coded into one main category and subcategories. Figure 1 depicts the process of raw data moving from coded data to a final theme. As Figure 1 depicts, all the data that was obtained from the 11 primary questions, were directed at answering the research question. From this single research question, 11 primary interview questions (IQs) were developed (Appendix B) and focused on answering RQ1. Sections of raw data from the interviews were then coded and placed into a primary category and subcategories. The category and subcategories uncovered themes, which are discussed in the results section.

Similar codes across all the interviews developed the primary category and subcategories. The primary category was loneliness—loneliness-related issues. This primary category has three subcategories, with some having their own subcategories. The subcategories are ALF life, outside relationships, and technology infusion. Under the subcategory of ALF life are the categories of living in ALFs, living in an ALF and communications, and ALF relationships. The subcategory of outside relationships is not broken down any further. The subcategory of technology infusion is further broken down into videoconferencing length of use, videoconferencing negatives, videoconferencing positives, and videoconferencing other. These codes and categories were then incorporated into themes that will be discussed in detail in the Results section.

Figure 1*Research Question to Themes Model*

Note. This model depicts the process used in this research of moving from the research question to the interjection of the interview questions, to the process of theme development based on codes and categorization of data.

The theme model in Figure 1 assisted in developing the overall themes throughout the data analysis stage. As depicted in Figure 1, the codes acted as a form of “building blocks” or “bricks” that were used to develop the category, subcategories, and ultimately, the themes. An example of the raw data transition from participant narratives to themes is depicted in Table 3.

Table 3*Example of Research Question to Theme Development Path*

RQ	IQ	Participant response	Category	Subcategory	Theme
RQ1—How do older adult ALF residents describe their experience with ICT use as it relates to their feelings of loneliness?	OK, so related to that question about how you feel about living in an assisted living facility is, how do you think this impacts your ability to stay in touch with your friends and family?	Participant 2: I'm already feeling a little distance. I don't think my kids call quite as frequently as they did when I was at home living and living at home, because they apparently feel reassured that I have what I need. There's people around to help me if I need help. And I think the basically my kids are going through a stage of relief that Mom is taking care of.	Loneliness— Loneliness-related issues	ALF life, ALF relationships— Negative	Contributing factors impacting one's feelings about living in an ALF

The category and subcategories assisted in the development of three primary themes: (a) feelings related to using ICTs, (b) difficulties with using technologies such as ICTs, and (c) contributing factors impacting one's feelings about living in an ALF.

Evidence of Trustworthiness

I entered this research with the clarity of my potential biases. The research was conducted with the knowledge that both the participants and I were emotional beings with our own beliefs and past experiences (Rubin & Rubin, 2012). Because of these potential biases, it was critical to complete two interviews where the same questions were asked, but with a period between interviews that allowed for a fresh perspective.

Credibility

Credibility was established and maintained during this study by following Creswell's (2014) strategy for maintaining research accuracy. Though Creswell's credibility strategies consist of eight different strategies, it was only necessary to use four of them during my study, which were triangulation, saturation, clarifying the bias, and reflexivity.

Triangulation was accomplished by conducting two interviews for each participant to cross-reference answers between each interview, as suggested by Scott (2007). I also maintained field notes of relevant data that might assist with data analysis. Charmaz (2006) described data saturation as obtaining enough data to the point that the data are redundant, and no further data would add to the analysis. For this research, data saturation was reached after interviewing five participants, with a total of 10 interviews. Clarifying the bias and reflexivity are joint concepts that can be accomplished by reflecting on one's past experiences, cultural experiences, and their overall background (Creswell, 2014).

Though I believe the responses from both interviews for each participant were informative and adequate for the questions being answered, it was harder to obtain overall feelings from participants who gave shorter answers. This caused me to have to use more prompting questions, which sometimes did not garner any further useful information. This was most obvious with Participant 1, who gave more direct answers without going into any additional detail. I was aware of Participant 1's shorter responses because I interviewed Participant 2 first. Participant 2's first interview was twice as long

as either of Participant 1's interviews. After the first interview with Participant 1, I was aware of how much shorter the interview was and attempted to elicit more detailed information from her in the second interview, to no avail; the second interview was 3 minutes shorter than the first interview. Ultimately, I attributed this to her personality and possibly just being uncomfortable with being interviewed, though there were no events that would have led me to believe this.

Transferability

Transferability of the research results should be used as adding knowledge to older adult ALF residents who have used ICTs but would not be representative of all ALF residents since the research was limited to a small participant pool with similar demographics. The research was limited to two facilities in North Alabama. What did come from this research and will be discussed in more detail in the Results section of this chapter and the Recommendations section of Chapter 5, is that there is a need for further research into the use of and need for ICTs among this population.

Dependability and Confirmability

The research was dependable based on Gibbs's (2007) description of conducting research that is capable of being repeated when conducted by other researchers. The interview protocol was used for an interview guide, as well as an area to take notes during the research process. All the raw data, which included notes, audio recordings, and transcriptions were secured and maintained throughout the conduct of the research. The same research questions were asked for each participant during each interview. Some additional questions were asked based on the participants' responses to ensure that the

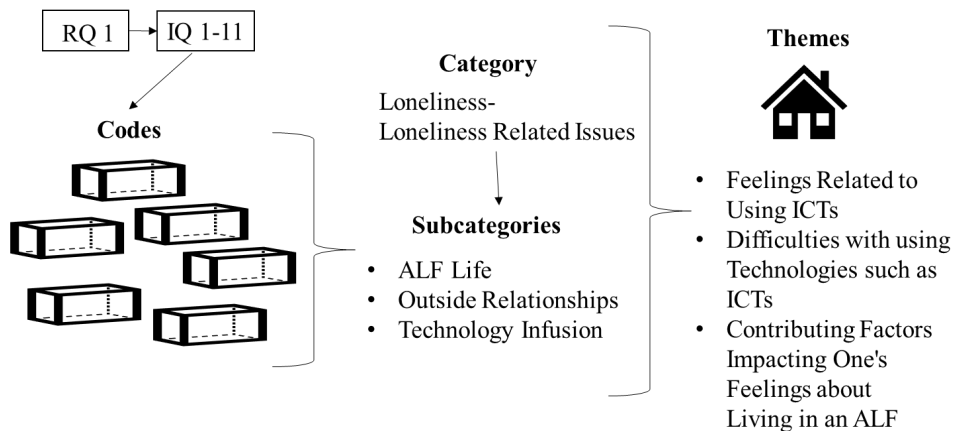
participants were given the opportunity to fully express their feelings about each question.

Results

The intent of this research was to add to the knowledge base of older adult ALF residents who use ICTs, and how the use of these ICTs relates to their level of loneliness; this was based on the research question.

RQ1—Qualitative: How do older adult ALF residents describe their experience with ICT use as it relates to their feelings of loneliness?

All the research questions were designed with the intent of answering the RQ. I initially began acquiring and coding data with the intent that the results would be discussed based on each interview question. As more data were acquired and coded, patterns and themes began to emerge. It became evident based on the strong subcategories that it would be advantageous to discuss the results of the research based on the main category and subcategories and how they developed into the three main themes (Figure 2).

Figure 2*Research Question to Themes Model*

Note. This model depicts the flow of raw data in this research from codes to themes.

A note to be aware of while reading through this section is that discussions about the participants were written in the order they were interviewed for each session (interview one or two). For example, Participant 1 was not the first person interviewed for each interview, so discussions about a specific subject may not start with Participant 1. Also, any names used in this research, to include quotations, are aliases.

Loneliness—Loneliness-Related Issues—Primary Category

Under the primary category of Loneliness-Loneliness Related Issues are the subcategories of ALF Life, Outside Relationships, and Technology Infusion.

Although loneliness was one of the primary categories that I wanted to gain more knowledge about, it seemed to be a subject that only garnered general responses but did affirm Schlomann et al.'s (2019) research where they determined that ICT use was positively related to lower levels of loneliness. Though all the participants agreed that videoconferencing did help with loneliness, the discussions were much shorter than I was

hoping for, as I mentioned earlier in the Credibility section. It did seem as though the subject of loneliness caused some agitation, which led me to not push further in discussing the subject, other than what I will discuss now.

Participant 1 agreed that videoconferencing helped with loneliness and stated, “I felt it helped with the loneliness tremendously, and I felt fortunate to, to be able to do it and it was almost a closer personal relationship with each person rather than an entire family in a room.” Participant 1 closed the conversation on loneliness by stating that videoconferencing helped with her levels of loneliness “for the better.”

Participant 2 also stated that using videoconferencing technologies, in relation to loneliness, “definitely reduces it” and stated,

Oh, it definitely helps. It's reassuring. I don't worry about them as much because I can see they're doing well. They're living their lives, which is exactly what I want for them, achieving things on their own and moving out. I'm all for it.

Part of this discussion was covered in the Videoconferencing – Positives section referencing the feeling of relief. Though the other participants did not specifically mention a feeling of relief being directly related to reduced feelings of loneliness, that sense of relief seemed to be detectable in their voices when they discussed family members. Participant 2 related her feeling of relief with reduced feelings of loneliness.

When I discussed feeling of loneliness with Participant 3 and how videoconferencing might impact his feelings of loneliness, he stated, “It certainly helps. You know, I, yeah just, a you know, just to be able to see them, you know, it's better than

just verbal” and “it makes me feel good.” I specifically asked Participant 3 if he thought using this technology helped with loneliness and he replied, “certainly.”

Participant 4 stated that she was able to feel lonely even when living around more than fifty people. She also stated that using videoconferencing technology, “wipes it out, it wipes it out,” when we discussed her level of loneliness after a videoconferencing event. She also stated that even a telephone call can wipe out loneliness. I had her clarify her feelings about loneliness and using videoconferencing technology when I asked her how it made her feel being able to see the faces of her family when they are talking to each other. She stated that, “seeing her is one thing, talking to her on the phone is another. Skyping is almost like seeing.”

I asked Participant 5 how she felt about her level of loneliness after videoconferencing with her family and she stated, “it just sent me sky high I guess you might say, it was a very special, special thing to talk with them and see their faces while I was talking with them” and that being able to see their faces definitely helped with her level of loneliness. She also said that “it makes you feel very happy and it makes you feel not lonely.” Participant 5 was the only participant who used another technology other than what residents typically used, such as a phone or computer; even though she agreed that using videoconferencing technologies helped with her loneliness, she stated that she got more out of using an internet connected still-image picture frame that was continuously updated by her family.

ALF Life—Subcategory

Under the subcategory of ALF Life are subcategories of Living in ALFs, and Living in ALFs and Communications, and ALF Relationships. Each of these subcategories were viewed from both the positive and negative perspective. Though this research concentrates on answering the RQ, which is directly related to older adult ICT use, it became evident from the participant narratives that the ALF environment could and did impact their overall outlook and wellbeing. There were more negatives associated with living in an ALF environment from the participants who were residents for the shortest periods and during the earliest stages of transitioning to the ALF environment. There seemed to be less negatives the longer residents lived in the ALFs, which related to a lesser need to maintain contact with individuals outside of the ALF. There were many positive aspects associated with ALF living as well, which will be discussed in detail under each subcategory.

Living in ALFs. Though the data are mixed between positives and negatives associated with living in an ALF, many of the negatives directly associated with living in an ALF seemed to be related to low-time ALF residents in the earlier transition phase. Though the participant pool was small, there were extensive discussions about living in an ALF. The negative data seemed more prevalent among the participants who were the newest residents with the least amount of time living in this type of an environment. There were many fewer complaints about living in the ALF from Participant 1 and 4 who had been residents for more than 36 months and 96 months, respectively. There were more negative attributes about ALF living associated with Participant 2 and 3 with time

as ALF residents at less than one month and less than two months, respectively.

Participant 5 seemed to have some initial difficulties transitioning to the ALF environment, stating that “at first, I missed, I missed home.” Some of this early negativity towards ALF living seemed to be contributed, in part, by the initial shock of adjusting to the ALF lifestyle, which aligns with the earlier works of Smith (2009) where the negative impacts of transitioning to ALFs were reported. In the interview with Participant 2, it was evident that there were some confusing feelings associated with adjusting to the ALF life:

- Participant 2: “Right now I'm pretty confused. It's a huge adjustment. I've been here a little less than a month.”
- Participant 2: “It still sometimes feels a little closed-in because I'm used to big house, big yard around it.”
- Participant 2: “I'm getting up earlier than I like because I'm naturally a night owl and I don't get to bed till midnight sometimes I'm up and down through the night and along about 3:00 am I maybe as much as an hour and back to bed. And to get breakfast, you have to be up at seven and dressed and in the dining room. And that is pushes my day to start a little earlier than I would prefer.”

Participant 2 seemed to have trouble adjusting from the past 10 years of taking care of a spouse with Alzheimer's to being alone in the ALF and no longer having to care for the spouse. Participant 3 seemed to have difficulty adjusting to the quality of the food in the ALF, stating “The meals are adequate, but sometimes they're not all that tasty.”

Participant 5 seemed to have more difficulty with being placed in an ALF without her acknowledgement or initial approval.

As with most of the negative responses towards living in an ALF, the routineness and regimented lifestyle seemed to impact Participants 2 and 3 enough to discuss in detail. Again, Participant 1 and 4, being the longest residing residents of the five participants, did not seem to have an issue with the routine lifestyle of the ALF and seemed satisfied with the routine and activities. This issue with the daily routine and regimented lifestyle is evident by the discussions below:

- Participant 2: “The days are similar in that the routine is pretty established, meal hours are firm, and if you're not there, by the time the meal starts, the personnel come and see what's holding you up.”
- Participant 2: “. So now it's a little structured, which is something I'm having to adapt to. I've never been an early riser because I'm a night owl. I rarely get to bed before 12:00 and to be up at six in order to be dressed and ready for breakfast at seven is a demand on my time that I don't really enjoy.”
- Participant 3: “You know, it's very routine, repeatable.”

One’s personal privacy and freedoms were also issues with two of the participants. Again, Participants 2, 3, and 5 had issues with personal privacy and a feeling of having a lack of personal freedoms, as noted by some of the below statements:

- Participant 2: “And so one day it's a blessing. I have people around when I need them, and the next day it's a nuisance. I have people around when I don't want them.”

- Participant 2: “When you've lived alone for a few years, you sometimes, you, you get feeling a little crowded if you have to have people around all the time. I value my privacy and that I've discovered is no longer possible.”
- Participant 2: “The staff will tap on the door if I don't answer, they use their door key and they walk in, which is it's good because if I were unable to answer or needed help, it's nice to know they would check on me.”
- Participant 2: “It's another adjustment. Yeah. Oh, I'm not accustomed to stepping out of the shower and having somebody standing there looking at me.”

Participant 3 seemed more concerned with personal freedoms as it relates to having to move into an ALF, as noted below:

- “I've been asking myself that question for several weeks now. Oh yeah. Let me put it this way. You know, I look back, I really didn't have much of a choice.”
- “it's hard to get that complete feeling of freedom, you know what I mean, when you live somewhere like that.” Here the participant is referring to living in the ALF.

Participant 3 also mentioned issues with privacy, stating “you can have no privacy in these facilities” and “they knock on the door and instantly their opening it. I was even on the potty one day and they walked into the bedroom there. So that's one thing, that you totally lose your, your independence.”

Participant 5's primary issue was that her family made the decision to place her in an ALF, stating, "and actually I didn't realize I would be in assisted living to begin with."

Another area of concern for three of the participants was outside support, or the lack of. Participant 2 reminisced about her neighbors visiting often and how she missed that, as well as not having the same access to family and friends as before becoming an ALF resident: "I miss, but they haven't been a daily part of my life for some time."

Participant 1 also complained about not having that many family members or friends who were that close to where she lived.

Participant 4 seemed to have the biggest issue with outside support or the lack of, which crossed into multiple issues. Though Participant 4 made her own decision to move into an ALF after several falls, she did not receive the support from her family that she thought she would receive. Since this issue was of particular concern to Participant 4, it will be discussed in more detail under the ALF Relationships section. Participant 4 seemed to have other issues related to living in an ALF that concentrated around her inability to help her family as she had always done in the past. Participant 4 was a single mother with daughters who depended on her for most of their lives and when she moved to the ALF, she felt as though she could no longer fill her self-defined role (Gibbs, 2005), stating about her daughter, "I was not able to help her, I've always been right in the middle of their life because they grew up just with me." Participant 4 seemed to have deep issues with not being able to help her daughters as she had in the past.

Participant 1 complained about the quality of residents not being up to the cognitive level thought necessary to be in assisted living. She stated, "The biggest

problem I'm encountering is they're bringing a lot of people in who really need to be in the other unit." Reference to the "other unit" was to the memory care facility, meaning that a lot of the new residents did not seem competent enough to socially interact with Participant 1. This is evidenced by another statement made by Participant 1, "There aren't many that I can carry on a conversation with." The only other minor negative was with Participant 3 who complained about not being challenged enough by the organized activities; "In the afternoons, there's the organized activity that I participate in some, I'm not a, you know, I'm not too challenged with Bingo and stuff like that." The complaint of not being challenged only seemed to be an issue with Participant 3. This could be attributed to the Participant 3's technical background as an electrical engineer, possibly requiring more difficult activity levels. This may also be an area for future research.

Participant 4's primary concerns with ALF living seemed to center around staff shortages and not having her own transportation. She did state that when she was unhappy about other issues, she would bring it to the staff's attention, and it was usually taken care of.

During my interview with Participant 4, a staff shortage at her facility seemed to cause her much concern. Although at one point she stated that it did not bother her much, because she did not need much assistance, she described a situation where if a person on another floor needed medical assistance, the one staff member on her floor would leave to assist and there would be no one on her floor to aid if the need arose. Participant 4 stated that "we need more staff" and that staff turnover was comparable to having a

“swinging door” in the facility. She also alluded to being afraid of having a major health event, such as heart failure or a stroke, and that the staff might not know what to do.

Participant 4 made a particular statement about leaving their past lives and moving into an ALF. She described this transition as experiencing a “loss,” again, touching on Gibbs’s 2005 research about the difficulties of transitioning to ALFs. She said, “We went through that loss, we went through having to leave our homes, we went through losing a whole bunch of stuff. And I've lost everything because my driver's license are taken away from me.” She describes this transition to the ALF environment by describing the losses that occurred during the transition. One of the big issues for Participant 4 was the loss of her freedom to travel when she lost her ability to drive. She described the process of losing her ability to drive as “trickery.” Her daughter took her to renew her license and had her license changed to “ID purposes only.” She seemed to be quite upset at how her family went about stopping her from driving. This loss of decision making was an underlying theme throughout many of the interviews. It was not only losing something like her license but not being part of the decision process, seemed to have a negative impact on Participant 4. Participant 4 stated that many of the residents are “aggravated with their family for making them come here.” The negative impact of not being involved in one’s own decisions is highlighted in Participant 4’s particular case, because she was the one who made the decision to move to an ALF. This seemed to have made her later transition much easier to accept. If she were able to make the same decision about her license and driving, she may not have harbored such ill feelings about not being able to drive any longer.

Though these were the main concerns of Participant 4 referencing ALF living, there were other obvious negatives. Participant 4 had difficulty with not seeing her family as much as she believed she should. Although I will discuss this in more detail in the ALF Relationships section, it is worth mentioning here as well. In one particular situation she discussed not being able to see her family, but it seemed more in relation to having to depend on others for something as simple as going to the store to make a purchase. Another negative related to ALF life for Participant 4 was and still is, the impact COVID-19 had on her freedom to travel as well as interacting with her family. The statement below described some of her frustration:

But it seems, it seems like in assisted living that we've given up so much freedom before we came. Our independence, I should say, not freedom, because now we're not locked down and, but we have to wear our mask wherever we go, where it's to the doctor or whatever. There's been times when we had some, but we tested every month. And I know I think if we think somebody might be, might have it, then everybody in the house gets tested.

Participant 4 described her inability to get her hair cut or colored, nor was she able to get her nails and toes done for the past 18 months, equating it to “jail.” She also mentioned that the quarantine caused her to gain excess weight and that “this past year and a half I think everybody has felt a little bit of not having the togetherness that they had before.”

Although Participant 5 was not a long-time ALF resident, she did not seem to have too many issues, other than she was not in the decision-making process when it came to her being moved to an ALF and she of course, missed her home and her family.

Living in an ALF is not all negative according to the participants and many of the negative areas had positive counterparts. For example, some of the participants complained of a lack of privacy, but in the same discussion did like the security some of these inconveniences provided. Participant 2 demonstrated this with the comment relating to privacy being a blessing to have people around and the next day feeling as though it is a nuisance – “And so, one day it's a blessing. I have people around when I need them, and the next day it's a nuisance.” Again, though Participant 2 complained about the lack of privacy, the security provided by having others around was a positive. Participant 2 stated, “I feel secure. I feel safe, which is pretty much saying the same thing. And my, my intent was to relieve my children of as much responsibility as I could, and I'm feeling good about the way that's working.” An important point to the feeling of security from Participant 2's perspective seemed to be relief by being able to unburden family members of being the primary caregivers. As mentioned earlier, Participant 3 was not satisfied with the quality of the food at the ALF, but in the same discussion seemed to be satisfied with being able to receive “three squares a day.” Participant 3 noted that even though there were three different cooks, “there menu is fixed” stating that they use the same menu but just change the days those meals are served. Participant 3 also seemed to like the fact that there was someone there to remind them of things, to include when it was mealtime.

Although Participant 4 had serious issues about losing her ability to drive her own car, she seemed to be extremely happy with the staff and, one staff member who became her means of transportation, stating that, “The caregiver here that takes me everywhere.” Participant 4 had not only acquired many new and close friends at the ALF she resided in, but she also had a particular fondness for many of the staff, which I will discuss in more detail in the ALF Relationships section. Participant 4 discussed how fortunate she was to live in an ALF and not to have to live in a house by herself, not to mention all the other residual benefits she discussed, such as not having to cook, clean, buy groceries, doing laundry, or even bathing if a resident needed assistance.

Participant 5 felt that she was in an “upscaled” facility and overall, was pleased with living in an ALF and was particularly fond of the birds and birdcage they had on the premises. She seemed content with ALF living and stated that she had everything she needed “and I just appreciate the fact that I have resources enough to be in an assisted living facility.”

Living in ALFs and Communications. Most of the narrative data collected on communications as it related to being an ALF resident, mainly arose from IQ 1a, where the question asked if living in an ALF impacted their ability to communicate with family and friends. Participants 1, 3, 4 and 5 did make some comments about communicating outside of the ALF environment. Participant 1 stated, “I do stay in touch with them, but I don't see them often except for one daughter who lives here.” This statement was in response to how living in an ALF impacts the communications process with family and friends. Participant 3 discussed visits received by a neighbor, but thought they would

gradually end, stating “I’ll talk to him a couple times. I really don’t expect that to, you know with time, that’ll probably go away, because we’re not talking about long term friends.” Participant 3 did state that living in an ALF did hamper outside communications.

Participant 2 complained about the transition process into the ALF negatively impacting the ability to use the computer and agreed that it would be nice to have some type of ALF in-house IT support.

I spent an awful lot of my time on the computer when I was at home by myself and when I moved the computer connection here didn’t get done for several days. And now my computer’s giving me all kinds of problems. It’s not working like it did. So, I’m having to spend a good part of my day. Two or three times I’ve been on the support system, for the computer, trying to get the bugs out. I’ve had to make some changes in the way I access information and alter in order to get it working.

Participant 1 stated that she did maintain external communications with a relative who lived close enough to visit occasionally but was not able to see other relatives that often. Participant 3 had an old school mate who maintained communications, though it was only once or twice a year. There was an interesting conversation about internal communications with Participant 2 that was based on the ALF routine. I mentioned that having a routine where you see people at set times of the day might assist with maintaining a good line of communications with other residents, which Participant 2 agreed.

Participant 4 stated that she did not get to do face-to-face communications very often with friends and family and that she had lost many of her friends. She also did not like being seen on the phone, especially during the pandemic, when she was not able to get her nails and hair done.

Participant 5 stated that there were no negative attributes associated with communicating with her family and contributed this mainly to a piece of technology that she had. Her family set up an electronic picture frame that allowed the family to upload pictures and voice messages via the internet. Participant 5 viewed this as a form of communications, because she would often call the sending family member to discuss the new photos, thus completing the communications process. This piece of technology had a positive impact on her, which I will discuss in more detail in the Videoconferencing – Other section.

ALF Relationships. Although the relationships that the participants established at the ALFs are not a primary point of this research, this category, like many of the other categories, related to one's overall feelings, which in turn, related to their overall feelings of wellbeing and could have an impact on whether residents of ALFs feel the need to communicate as much with outside friends and family members. The process and the ability to establish new relationships at the ALFs seemed to be a critical event for each of the participants, especially those who were newer to the ALF experience. Three areas mentioned that rose above the others were mealtimes, relationship building, and coordinated activities, which will be discussed in detail.

Mealtime, Relationships, and Relationship Building. The ability to establish relationships, even with a few individuals, was a crucial part of the participants' lives. Surprisingly, mealtimes became an important social event as well as a place to obtain one's daily sustenance. Participant 2 described one event, which seemed to encompass the importance of mealtimes in her ALF. Participant 2 recalled a conversation with her minister prior to moving into the ALF. Her minister told her, "You probably already know this, but I've got to tell you something, and I want you to keep it in mind. So, you are now going back to junior high school." Participant 2 assumed the minister was joking with her, but after one particular event, she stated that she understood what he was talking about. Participant 2 explained the situation as follows:

So, I got over here and one of the first things that happened on the second morning that I was here, the first day to go to the dining room for breakfast. I met a couple of ladies in wheelchairs in the lobby and we struck up a conversation and watched the clock, and when it was time to go into breakfast, I went with them up the hall to breakfast and they sat down at this table that seated four and there was one lady already seated there, the two that I was with sat down. And so, I moved over to take the fourth chair. And one of the ladies said to me, you can't sit there. That's Joe's seat. And I oh, well, I don't want to take anybody's place. So, I moved over to the table that had nobody seated at it and sit by myself. Well, the waitress or the attendant, the nursing assistant or whatever you want to call her, she was taking orders for breakfast. She came over to me

and she said, you can't sit there. There's a man and his wife that sit at that table. And, oh, well, I got up. Where would you like me to sit? Well, she went across the room to a table for six and pulled a chair out for me to sit there. And I realized, OK, where I sit now is going to be more or less my designated seating from now on.

Though this is a long quote, I felt it necessary to make the point clear on the seriousness of mealtimes and the establishment of “clicks” within ALFs. Participant 2 stated that “there are little clicks.” This episode not only shows a form of tribalism and clicks but demonstrates the participation of the staff in such behavior. This led to what Participant 2 described as her “first episode of sitting down to cry.” Ultimately, Participant 2 found a two-seat table on the outskirts of the dining room that she “claimed” as her seat to use from that point forward. Participant 2 did maintain a positive attitude about the event and thought that “I think after I've been here a while that there will be a somewhat change in attitude. Right now, everybody's pretty cautious, pretty standoffish.” Participant 2 did mention that from this negative incident, she did end up obtaining a good friend from it. After she went to her room to cry about the event, she received a visit from another resident who was told about the event from other resident bystanders that observed it. She stated, “my name is Jane, I just want to know if you're OK.” Participant 2 and the other resident became good friends based on this incident. Participant 2 described how Jane would sit with her on different days during meals but would not just sit with her. Jane understood the importance of sharing her time with several different people during mealtime.

Participant 2 described one problem was the fact that her past close relationships were related to coworkers and her deeper relationship was with her husband, who is now deceased. Participant 2 seemed more interested in developing relationships with men and noted that there were “not very many men in this group.” Again, male companionship for Participant 2 seemed important with her stating, “I have encountered a couple of men that, and one of them seems alert and able to carry on a conversation, and he's also alone. He's only been a widow since Christmas. A widower since Christmas and we have kind of struck up a friendship.” Her feelings directly related to King et al. (2019) research where they determined that the loss of a spouse can be an older adult’s most significant life event.

Participant 3, another short-time resident, did not seem to have any main issues with other residents. He stated that, “Most of the residents are friendly and so you soon, you know, choose who you want to talk to” and that he had met some interesting people who were diverse and “from different social economic levels.” Participant 3 described how he established new friendships with two other female residents and a male resident. Important to Participant 3 were the other residents’ ability to communicate well and that they were good conversationalists. He noted that he had contacted some of the other new resident arrivals. He now regularly had meals with the same three residents each day. This daily mealtime interaction led Participant 3 to take daily walks around the facility with one of the

other residents after each meal. Participant 3 agreed with my comment about mealtime being somewhat of a social event.

Participant 1 discussed how encouraging her last two encounters with new residents were, but this was the extent of her comments towards making new friends.

Participant 4 seemed to have a closer relationship with the staff when compared to the other residents. When I designed this research and wanted to discuss internal ALF relationships, the residents' relationships with the staff and caregivers were not considered. Even though this was not considered, it seemed worth mentioning, and may even be an area of interest for future research. Participant 4 mentioned that she "adored the Activities Director" and when discussing another staff member, she stated that she would "adopt her if she didn't have another mother." She stated that there were several other caregivers that she would adopt if she could as well. She spoke highly of the staff throughout both interviews. Being another one of the longer-time ALF residents, Participant 4 had a lot of friends at the ALF and noted that she had her "inner circle" of friends who were extremely close, even referring to them as her second family and that "mostly my friends are here now." One of the key points that Participant 4 made about making friends in her ALF was the fact that her friends there, for the most part, had similar life experiences and were a comfort during difficult times, specifically when discussing the loss of friends and loved ones. As noted earlier by Weiss (1973) it is important to establish social bonds with those that one has things in common with. It seemed that this aspect of their relationship allowed them to become extremely close to

one another and they depended on one another more than their family members. The buffering hypothesis seemed to occur during some narratives and was provided by the friendships of the ALF residents.

I mentioned earlier how important mealtimes were to the ALF residents' social interactions. One unique twist to mealtime was mentioned by Participant 4, which she called "table hopping." This is where she would sit with different people during meals instead of just sitting at her regular table. This allowed her to meet new people more rapidly than she would in a normal setting of the ALF. She mentioned that other residents also table hopped for the same reasons. This table hopping seemed to be a type of positive coping mechanism described by Thiruchelvi and Supriya (2012).

Participant 5 spoke fondly of the many friends that she had at her previous ALF and that she knew she would make many friends here as well. Participant 5 seemed to have an extremely good attitude about making new friends and I will close this section with a quote from her: "it's what you put into assisted living is what you gonna get out of it."

The social relationships mentioned by many of the residents, specifically Participant 4, refuted studies such as Abbot et al. (2013) and Casey et al. studies that stated one-third of ALF residents did not develop positive relationships at ALFs. Although the participant group of five was small, all participants seemed to enjoy the company of other residents, with many establishing close relationships.

Activities. Placing structured and unstructured activities within ALF relationships became more of an obvious choice based on activities and their social impact on the ALF residents. Activities were another avenue for social interaction more than just having something to do. The link between activities and social interaction was brought out by Participant 2 in our first interview. Participant 2 was discussing the activities area and how there was never anyone there unless there was a scheduled activity. She attempted to interact with other residents by starting a puzzle in the common activities area. She stated,

Occasionally, but most of the time there's not anybody there I go with the scheduled activities, but in between times it's pretty empty. So, when I first came, they had a puzzle board sitting out on the kitchen counter and I took the board and a picture puzzle over to the table in the corner and started that. So, I spent most of my time putting the puzzle together, keeps me busy. And I thought it would be a method to mix and meet people it would be a subject for conversation, nobody did come in.

It is evident by the above statement that Participant 2 not only wanted to partake in an activity to keep her busy, but that she was hoping to attract other residents to participate. Eventually, this technique seemed to have worked. Participant 2 stated that after a couple of weeks, one of the other male residents began to assist her with the puzzle and she stated that they seemed to have a lot in common. This activity led to other residents interacting and even participating in other activities, such as playing cards. Though Participant 2 seemed happy about having others participate in the puzzle building, she did

seem disappointed that there were only a couple of people who showed interest. Overall, Participant 2 seemed satisfied with the outcome of using the puzzle building as a tool to interact with other residents. She stated, “there's three or four other people that will stop by the puzzle board when I'm working on it and sit and fiddle with it and talk and visit for a few minutes. They don't last very long.” Though most of the interactions did not seem to last long, it did assist in the social interaction process. Participant 3 mentioned assisting with the puzzle building in our first interview and enjoyed it as well. It was evident by the comments made by Participant 2 that she was hoping that setting up the puzzle in a common area, might attract others to join her for social interactions. This example highlights Townsend and McWhirter's 2005 research involving social connectedness, stating that it is a human need.

Participant 2 discussed another social event that was successful in bringing residents together. She stated that one of the other residents organized a weekly “get-together” on Wednesday evenings where everyone brought their own beverage for an evening social. She stated that this was a successful event that brought more than 15 residents together and that three of the male residents who had served in the military together in Germany were able to reminisce about their time overseas. Participant 2 noted that after being in the ALF for three weeks, that this event was the largest activities gathering that she had witnessed.

Participant 1 did mention participating in some of the activities at the ALF, but that was the extend of the narrative.

Participation in social activities, though not mentioned in too much detail, was mentioned by Participant 3. Participant 3 seemed to revel in the opportunity to interact with other residents, as described in the quotes below:

- “Yeah, and also, the social activities, the little get together, you know, varies between simple games like bingo and. Well, there's even a, you're familiar with, I guess, the game of, of Cornhole.”
- “And so, there's stuff like that goes on, movies. We, we do have an Activities Director. And so, there's, there's always something going on.”

Participant 1 also mentioned how mealtimes were a type of social gathering as well and were good emotionally. This mealtime socialization was also echoed by Participant 3:

You begin to feel more comfortable with certain people and you tend to, you know, eat with them all the time and even the social events similarly. So that's kinda how it works for me. And most everyone else is the same way. I noticed there is some real mixers that seem to make an effort to try to rotate and meet all over people and get to know them. Oh, so it's not it's not a bad thing at all.

Participant 4 seemed to be satisfied with the level of activities that were provided by her ALF. She was excited by the fact that they had a monthly calendar that let them know about the upcoming events. She was particularly fond of Bingo and told me a story about a Bingo event that involved a local news weatherman who acted as the Bingo Caller. She noted that Bingo seemed to be the favorite activity of most of the residents.

She also mentioned exercise events, Bible study, watching movies and ballgames, and made a special note about how each holiday is a “full-blown” event. Overall, she stated that her days are busy and that every day is different.

Participant 5 was also pleased with the activities in her ALF, mentioning a similar activities calendar, though this one lit up and was posted for everyone to see each day. She also mentioned having a birdcage and birds on-site, attending church services, and participating in various activities and noting that “It’s not the same thing every day.”

Looking at the perspective of Participants 4 and 5, it seemed as if both participating facilities provided a variety of different activities for the residents to participate in.

With all the negative and positive aspects of living in an ALF, all of the participants made a positive comment about their overall feelings of living in an ALF:

- Participant 2: “I have everything I need. There's no slacking on anything.”
- Participant 1: I asked the participant if they felt good about living in the ALF and Participant 1’s response was, “Yes. Overall, I do. Of course, not totally.”
- Participant 3: When asked about his overall happiness, “Yeah, I am not. I'm not all that disappointed with how things are developing so. It's not, it's not paradise.”
- Participant 4: “But I have friends here are new friends. And actually, they’re my family, um, they’re my second family I should say.”
- Participant 5: I asked Participant 5 if she was overall happy with the ALF life and she said, “Yes, I am.”

Looking back on the IQs, I would like to have asked more questions relating to activities, both spontaneous and scheduled. Overall, the activities seemed to be a means of maintaining social connectedness (Townsend & McWhirter, 2005) and social support (Chen & Feeley, 2013).

Outside Relationships—Subcategory

All participants had some low-level of outside support. This was usually provided by a relative who lived in the area. None of the participants were totally isolated in that respect, but Participant 2 did mention a lack of support due to a local family member having serious health issues. The interactions, for the most part, between participant and family members did not seem to diminish due to the participants being in an ALF. What did seem to have an impact on the residents, were some of the family interactions, which will be discussed in more detail in the Technology Infusion section. The COVID pandemic also seemed to have a negative on the ability of the residents to interact with family, friends, and even doctors. Where the participants had some level of support during normal conditions, this support was greatly diminished due to COVID and the restrictions that were implemented by the facilities, the state, and the Center for Disease Control (CDC). Again, though most of the participants had some level of family and friend interactions, the COVID restrictions were the greatest impact to maintaining close external relationships during the past year and a half. A good example of how one participant overcame the difficulties of interacting with family members during COVID using videoconferencing ICTs, was described by Participant 2. Participant 2 described FaceTime as being her “salvation” during the COVID visitation restrictions to

communicate with her daughter who was unable to visit her. The ICT videoconferencing capability was also critical, because around this same time, her daughter moved to a foreign country that had a sub-standard mail system, which made even writing and receiving letters difficult. Participant 2 used videoconferencing ICTs to overcome her inability to meet face-to-face with her family during COVID restrictions and daughter's moving out of the United States. The COVID restrictions were also overcome by Participant 3's use of videoconferencing ICTs. Participant 3 interacted with his cardiologist via videoconferencing and noted that it was just as effective as his face-to-face interactions. Participant 5 also mentioned overcoming the COVID restrictions by using videoconferencing ICTs. During the visitation restrictions, Participant 5 mentioned that on her birthday, she was able to videoconference with her family on the front porch of her ALF and with family members in another state during the same interaction. She mentioned what a nice birthday present it was to be able to visit with both groups of family members at the same time. COVID implications are discussed further in the Videoconferencing-Other section and in the COVID-19 Pandemic Implications section in Chapter 5.

Though each participant had some level of outside social interaction with family or friends, the issues with their internal social network seemed to garner deeper emotional expressions of pain and happiness, especially as they related to the participants' initial adjustment to living in an ALF environment.

Participant 4 seemed to have the only negative comments relating to outside the ALF relationships, which predominately related to her family. Participant 4's family

interactions seemed to negatively affect her more than anything else related to living in an ALF. Participant 4 stated that there were times when she felt “warehoused” even though in the same sentence she would admit to being taken care of. Participant 4 had a particularly close relationship with her daughters before moving to the ALF. She also had a history of being a single parent and being an older child who took great personal care of her aging parents until their deaths. She described a conversation with one of her daughters who could not understand why she visited her mother of 96 so often, even though she did not recognize her when she visited. Participant 4 explained to her daughter that she felt that her mother knew she was there and that she was also doing it for her own benefit as well. She closed this particular story by stating, “I guess that’s kind of what I expected from the kids. And I’m not going to get that,” and “they don’t give me anything.” A lot of the resentment towards her children seemed to come from that fact that she was the center of the family and a person who all her children depended on, again, touching on the self-defined role discussed in Gibbs’s 2005 research. Once she moved to the ALF, she felt that she became more dependent on them, and they were “distancing themselves” from her. In many of the discussions, she discussed her anger towards her children, she seemed to understand that it was for her own good and that her daughters had their own families and their own lives. She seemed to struggle with the duality of roles, one role being an ALF resident and the other a role where she still wanted to be the head of the household. A few incidents that were particularly hurtful to her were major negative life events, such as serious illnesses, deaths, and family divorces that she found out about accidentally. Other hurtful incidents were posts to Facebook that

she was able to view where the family all got together and did not bother to even mention it to her.

The feeling of no longer being needed seemed to be the underlying issue Participant 4 was having with her family. She even explained how she did garner some gratification from her daughter contacting her over the loss of her daughter and how as bad as the conversation was, she felt a tinge of gratification when her daughter told her that she needed to talk to her and only her. Along with wanting to be needed (social needs model), Participant 4 did understand her current situation and why she was in an ALF, not to mention that she made the final decision to move to an ALF. At times she made comments about not wanting to be a burden to her family and that her daughter mentioned how happy she was knowing that she was being taken care of.

Participant 4's family interactions were the only external negative events that impacted her life in the ALF.

Technology Infusion—Subcategory

Technology Infusion is the primary category of all technology related issues associated with this research. This subcategory has additional subcategories of Videoconferencing Length of Use, Videoconferencing Negatives, Videoconferencing Positives, and Videoconferencing Other.

Videoconferencing Length of Use. The videoconferencing experience level between the five participants varied drastically from 6 months to decades as noted in Table 4.

Table 4*Length of Videoconferencing Experience Among Participants*

	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5
Length of videoconferencing use (approximations)	6 months	24 months	216 months	24 months	24 months

Participant 3 stated that he had been using videoconferencing technologies since the 90s, specifically Skype. Though it is possible with his background in engineering that he may have had experience with videoconferencing technologies since the 90s, Skype was not introduced until 2003 (Skype Software, n.d.). Since the participant mentioned Skype, I selected the inception date of the Skype software for Participant 3's length of videoconferencing experience. The remainder of the participants had significantly less videoconferencing experience and for the most part, the videoconferencing sessions were initiated by other family members or ALF staff.

Videoconferencing Negatives. The videoconferencing negatives were not necessarily negative, but rather something that was less than being able to perform a real face-to-face interaction. There was one possible negative aspect of videoconferencing that was mentioned, which I will cover in my discussions about Participant 2.

As I stated, most of the negatives that related to using videoconferencing technologies were related to it not being as good as actually having the person physically with you. Participant 2 stated that though it was "better than not being able to see them," "you still could not hug them." Participant 2 also stated that "It'll never take over the

actual warmth of a human body in your arms.” This was reiterated by Participant 3 stating that when using videoconferencing that there was “no hands-on.” Participant 1 also stated that videoconferencing “comes in second, of course” when compared to actual face-to-face interactions. Participant 1 did note that her typing skills were being “destroyed” by using such technologies. Though these comments might be considered a negative, the negativity associated with their comments were slight. The only real issue with using videoconferencing technologies came from a deep discussion I had with Participant 2. I had asked Participant 2 what she thought the impact of sharing bad news or something negative via videoconferencing. Participant 2 stated that “the bad might be worse” if it were relayed while you could see the other person. She gave an example of her daughter breaking news to her about a couple of family members who had passed away relatively close together. She stated that:

They called to tell me about that. I can't imagine how much worse it would have been had my daughter in law told me over FaceTime rather than just over the telephone, I think it would have been much, much worse on FaceTime.

Participant 2 stated that “bad news would be worse” since the person might be able to mask some of their emotions if it were a telephonic conversation as opposed to a videoconferencing session.

Participant 4 and 5's main issue with videoconferencing technologies were their difficulty with using such technologies. This affirmed Waycott et al. (2016) study describing how older adults could have a fear of not being able to learn a new

technology. Participant 4 stated about the technology, “I know how to use it sometimes, sometimes I don’t.” She also complained about trying to use her computer and not being able to connect to Wi-Fi, which caused her to resort to videoconferencing with her phone. During our discussions about using the technology, Participant 4 seemed to get angry at herself for not being able to learn or use the technology proficiently and complained that the technology was so far ahead of her, even though her 5-year-old granddaughter could use it. This statement about her abilities as compared to her granddaughter’s abilities coincided with Caspi and colleague’s 2019 research, stating that older adults may begin to believe the negative stereotypes related to older adults and using new technologies. We did discuss her conversation between her and her daughter about the loss of her granddaughter and if she thought being able to see her daughter’s face would have been better or worse. At one point she thought it would be better to see her face, even when discussing bad news and later in the conversation she thought it would have made it worse. She finalized her thought on this subject by stating that she just was not sure.

Overall, the main negative aspect of videoconferencing centered around someone having to receive bad news and being able to see the other person during the interaction.

Videoconferencing Positives. Most of the participants’ feelings towards using videoconferencing technologies were positive. Some of the positives were related not only to self-relief and less anxiety about family members, but also that it seemed to assist family members’ anxieties about their family member in an ALF outside of their daily care. One particular story told by Participant 2 was a great example of this “two-way”

benefit. Participant 2's daughter had moved to a foreign country, and she explained how videoconferencing helped her and her daughter:

About two years or so ago, my one of my daughters retired and she and her husband picked up, moved to Costa Rica lock, stock, and barrel. And when she got that far away from home and then COVID hit, she was unable to fly back and visit like she had originally planned. She was more or less stranded. And FaceTime has been a salvation since then because that she has trouble communicating in the mail system in that country is very poor. I can't we can't really exchange letters at all. So, we do FaceTime conversations, and she does a video tour of her house under construction as it was being built. I could stay on top of things with her. She'd show me the whales coming up in the ocean and oh, just a lot of interest what she's doing in her life. And when I moved here, I was able to give her a video tour of my place. So, she knows my set up now where I am and what I'm doing. So, it's been our major link of communication with that member of the family.

Participant 2 not only benefited from being able to see how her daughter was doing living in a new country, but she also benefited from knowing that her daughter could feel some relief from knowing that her mother was doing well. The theme of feeling relief was mentioned on other occasions by Participant 2 as well as Participant 1 and 3. During a discussion about separation from family and videoconferencing use, Participant 2 mentioned the concept of "relief" in her situation. Participant 2 explained that because

she was able to see her daughter who lived in another country, she did not have to be “quite as concerned how she’s doing” and that “There’s a satisfaction in having, um, seen them and, and talk with them. It’s a relief.” Participant 1 also mentioned being relieved using videoconferencing with her separated family member. She stated that “There’s some thankfulness? Some relief isn’t quite the, a feeling of well-being.” When I asked Participant 3 how he felt after being able to use videoconferencing, he stated, “Relief!”

Besides the feelings of relief, there was a general satisfaction among the participants with being able to communicate with family and friends who were not with them in person. Some of the most telling conversations had to do with being able to participate in family events and being able to see family members grow in their lives and as people (grandchildren). These results affirmed Nimrod’s 2019 study referencing the ability of ICTs to fill the distance gap between separated individuals.

Participant 2 described another scenario that included the separation between her and her grandson:

I have a grandson that moved to Utah last summer. So, for the past year, I’ve been able to watch the children grow over FaceTime. And the little boy was just a few months old and now he’s walking. And it’s quite exciting to be able to see him that way because otherwise I really would not be able to keep that close contact to them.

Participant 2 discussed a similar situation with another family member. Her granddaughter moved to Mobile, and she was able to maintain visual contact with her and

encourage her during her move and to ensure that she remained a part of her family's lives. This is how she described her separation from her granddaughter:

So, when she moved to, to Mobile, I would drop her a letter in the mail like once a week or something to help her. But she would instead of taking time sitting down, writing, she'd get on the phone, and she'd go and FaceTime and call me. We'd talk and laugh and carry on. And, and it was just a good home visit with Elisa. That lessens the pain of having her out of my life more or less, you know, gone away, doing her own thing, growing up. And she still makes time for grandma.

Being able to maintain a link to their families was an important aspect of most of the narratives about the technology itself. This affirmed the importance of Nimrod's 2019 research noting the importance of ICTs in preserving the communications process, thus preserving social engagement. Participant 1 mentioned one such use of videoconferencing technology during a Christmas family event. Participant 1 explained how thankful she was for this technology and that it enabled her to communicate with around 50 family members, stating that "it seemed a little closer relationship than it would have been had I been there" and that it seemed a little more "personal." She was very pleased with the fact that she was able to speak with each person via videoconferencing and that she might not be able to interact with each person if they were all in one room together. She stated that she was able to speak with each person and was able to ask each of them questions and gave her the feeling that the conversations were more personal (dedicated attention).

Participant 4 described a particular videoconferencing event when her daughter remarried; she stated, “And finally at the reception, we got through to her and we all got to talk to her and she got to see the cake and she got to see her mamma.” She explained how she was able to meet and see faces of several family members that she had not been able to meet yet. When I asked Participant 4 how she felt after such an interaction, she stated, “it’s marvelous!” Participant 4 also stated that she enjoyed being able to see people’s facial expressions while videoconferencing and that this seemed to be lost in regular telephone conversations.

Participant 5 also described her enjoyment from using videoconferencing technologies, in particular a surprise birthday party for her that was set-up by her family. She mentioned how happy these types of interactions made her feel. Another important teleconferencing event for Participant 5 occurred during the pandemic when the ALF set up videoconferencing between her and her family, stating that it was “just like being in the room with them almost” and “that just brings our family close together.”

The following are some of the positive statements made by each participant relative to using teleconferencing technologies:

Participant 1:

- When asked about her feelings towards using teleconferencing technology, Participant 1 stated, “I’m most thankful.”
- “I can connect with those who are very far away that I might not see otherwise.”
- “So, there's nothing negative I can think of about using it.”

- “And I'm just thankful for all of it.”
- “It's something I look forward to.”

Participant 2:

- “You can sometimes tell a lot more if you see an individual than you see their face rather than just the voice.”
- “It's quite an improvement over just a phone conversation.”
- “It's an enhanced telephone call.”
- “It's a step above a good telephone call.”
- Related to her feelings after using videoconferencing technologies, she stated, “It definitely helps.”
- “And there's a satisfaction in knowing that they're doing well, and you can tell by their tone and their expressions and all better when you can see their face.”
- “It has always been positive” and “I haven't had any actual negative face time.”
- “I recommend it.”
- “It's a good move in communications.”
- “Yes, I think it's a positive technology.”
- “Oh, it's exciting. I'm very pleased to have that capability and to have it available. Now, it's almost as big as being around when television came into first being used.”
- “It definitely is an addition” and “It's definitely an improvement.”
- “It's so much more in depth than just regular phone call.”

Participant 3:

- “To me it’s just like, just about like being in the same room sitting across from each other” and “You know I don't see much difference, really.”
- “It’s all positive.”
- “Well, to me, it’s almost the same” referring to how videoconferencing compares to face-to-face communications.
- “It’s certainly relaxing.”
- “Well, you still have the body language, you know.”
- “It's an addition to voice.”
- “I’m happy to use the technology.”
- “I do feel good after.”
- “It’s like getting a letter, but you get to see their face in real-time.”

Participant 4:

- “I like to see her face. I like to hear her voice, but I really love the, if she Skypes me.”
- “It’s not like touching them, but it’s almost like seeing em.”
- “It’s 10 times better. Makes me feel better than just talking.”

Participant 5:

- “I just loved the fact that I could see and communicate with both my sons and their families. It was, it was a very special day for me.”

One other interesting comment about videoconferencing came from Participant 1.

Participant 1 attended weekly Church services and stated that “if I were personally

present in that meeting, I might go to sleep” and that when she is videoconferencing, she does not get sleepy compared to when she attended these types of events in person. She stated that it caused her to stay more alert during the videoconferencing interactions.

The use of ICT videoconferencing technologies, though limited by this population, seemed to affirm Charness and Boot’s 2009 research, that using ICTs to connect to family and friends attributed to a higher level of well-being.

Videoconferencing—Other. There were a couple of unexpected comments relating to videoconferencing use, which led me to have an Other category. Three specific other uses for videoconferencing came up during discussions with two of the participants. Other uses are categorized as falling outside of typical communications between family and friends. During the interviews with Participant 1, I found out that she used Zoom to participate in a church Bible study. She stated, “I use Zoom on Wednesday nights, a prayer service at church Bible study.” Participant 3, having a more technical work history, seemed to revel in the technology and used it often to perform telemedicine. This situation of using videoconferencing with his doctor seemed to be directly related to COVID restrictions and safety when he had to perform more mundane types of appointments:

And then when COVID came along, I was being treated for my heart problem and had. The Cardiologist used. Oh, it's one of the (inaudible) I forget what, I downloaded that app and we videoconferenced.

Participant 3 also had an issue with swelling in one of his hands and was able to videoconference with his doctor to solve his medical problem. On another occasion,

Participant 3 had a technical problem with his computer, so he contacted his son for assistance. Participant 3 described the encounter as follows:

He had to monitor what he was telling me to do. He took he took his computer and, and we had the same type router, so he was he opened his settings in his router and he told me what to do. And so, we used FaceTime then for him to actually look at my monitor to make sure I was following his instructions.

From these three different examples, these participants were able to attend church Bible studies, interact with their doctor, and receive technical support for a computer issue. The participants seemed almost as excited to talk about these other uses of videoconferencing as they were when they spoke about contacting family and friends. The participants' use of ICTs correlates with Goldsmith's 2004 research describing the use of at least two of the four supportive behaviors, which are emotional support and informational support.

Although Participant 5 enjoyed videoconferencing with her family, there was one piece of technology that she enjoyed using much more. Her family installed an electronic picture frame that allowed them to update the photos at any time via the internet. Along with downloading photos for her to view, they would leave messages on the device. She was fascinated with the fact that she was getting pictures of events that her family were currently involved in. When I asked her about comparing that with videoconferencing, she stated that she liked the picture frame better because she could access it any time and she could "look at them longer" and that it was constantly being updated. She stated, "I

can actually get more out of the thing that I've got than I would sitting in front of the computer talking with them." She even stated that it helped her get through the pandemic.

This technology use among older adults may be an area that might require further research.

Themes

Saldaña (2016) described themes as being derived from or can be the "outcome of coding, categorization, or analytic reflection" (p. 15). The themes from this research were developed from the categorization and subcategorization process and led to three main themes, which are depicted in Figure 2.

These themes are, 1) Feelings Related to Using ICTs, 2) Difficulties with Using Technologies such as ICTs, and 3) Contributing Factors Impacting One's Feelings About Living in an ALF. Each of these themes will be discussed in detail in Chapter 5 in the Interpretation of the Findings section.

Summary

The purpose of my qualitative research was to examine the older adult experience with ICT use as they perceived it related to loneliness from the perspective of older adults who had moved to assisted living facilities and were a significant distance from their physical social network. This research delved into the experience of older adults who had used videoconferencing technology to maintain contact with their social networks, and how this population described their experience with ICT use as it related to their feelings of loneliness. This research was based on the one research question, RQ1—Qualitative research question: How do older adult ALF residents describe their experience with ICT

use as it relates to their feelings of loneliness? This primary RQ was answered with the use of 11 primary interview questions that related to ALF life, to include ALF relationships, communications related issues, and various issues related to ICT use.

The overall findings showed a propensity towards difficult transitions into the ALF communities, with a gradual adaptation to the scheduled, active lifestyle and ultimately, establishing strong personal relationships with other residents, as well as staff members. Other results from the study were difficulties of ICT use and related feelings associated with not being technically proficient. The primary RQ was answered; ICT use among older adult ALF residents assisted in lowering their feelings of loneliness, which was positively correlated with videoconferencing technology use. The research also verified the findings of Kupersmidt et al. (1999) findings related to the social needs model, stating that all humans have a universal need for social contact. The research also affirmed Cohen and Wills's 1985 and Cutrona's 1986 research on buffering, where social support can act as a buffer against stressful events. The interpretation of the findings will be discussed in detail in Chapter 5, to include limitations of the study, recommendations, implications, and the study conclusion.

Chapter 5: Discussion, Conclusion, and Recommendations

Introduction

The primary purpose of this study was to determine how older adult ALF residents described their experience with ICT use as it related to their feelings of loneliness. This research was primarily conducted to add knowledge concerning ICT use and loneliness among older adult ALF residents, as suggested by Czaja et al. (2018) and Siniscarco et al. (2017), referencing the need for more research in this area. Along with answering the RQ, other ALF-related subjects arose, which are discussed in detail in the Interpretation of the Findings section. Other theoretical constructs and concepts were explored during this study, specifically the social needs model and the buffering hypothesis. I conducted a narrative qualitative study, which allowed me to gain detailed narrations that related to ALF life, ALF relationships, and issues and benefits associated with ICT use among this population. The 11 primary questions allowed for deep conversations that related to the five participants' experiences within their ALFs and how using videoconferencing ICTs assisted in the reduction of their feelings of loneliness. Along with the results on loneliness, there were narratives that related to the importance of strong ALF relationships, the difficulties of being separated from family, and some of the difficulties in using ICT technologies.

Interpretation of the Findings

The primary focus of this narrative qualitative research was to determine how videoconferencing ICT use among older adult ALF residents was viewed through the lens of the buffering hypothesis and the social needs model. The use of ICT

videoconferencing technologies was described as a positive experience by all of the participants and assisted in feeling less lonely. Although this was the primary focus of this research, other experiences associated with the participants' feelings regarding their overall well-being are discussed in detail and did seem to affect their overall feelings of loneliness. This primarily related to the subcategories of ALF life, outside relationships, and technology infusion.

The findings are interpreted in the following sections, all of which relate back to the three themes. Although The Need to Add to the Knowledge Base section primarily addresses the need for and justification of this research, the remaining sections cover the additional themes, Feelings Related to ICT Use, Difficulties With Using Technologies such as ICTs, and Contributing Factors Impacting One's Feelings About Living in an ALF.

It is important to note that although the main subject of the research was how the participants felt about using ICTs as they relate to loneliness, a multitude of other issues arose during the interviews that did seem to impact their overall feelings of well-being. For example, those who seemed to have strong internal relationships at their ALF seemed to have less of a need to communicate with those outside of their ALF. This also seemed to be the fact with the participants' satisfaction with the ALFs in general. For this reason, these ancillary areas and answers to interview questions were important and incorporated into subcategories of the primary category.

The Need to Add to the Knowledge Base

One of the primary goals of this research was to add to the knowledge base on older adult ALF residents and ICT use as it relates to loneliness. The results from this research help to answer the call from Siniscarco et al. (2017) and Czaja et al. (2018), who stated that more research needed to be done to add to the knowledge base on ICT use among older adults. The results from the five participants verified that using ICTs assisted in buffering against loneliness by lowering their feelings of loneliness while using the ICTs to communicate with family and friends, with no negative effects. One participant did suggest that relaying or receiving bad news when one is able to see the other person on videoconferencing technologies might be more difficult.

The results of this research showed the positives associated with the use of ICTs among this population and lower levels of loneliness, which was consistent with past research by Cotton et al. (2013), Damant et al. (2017), Forsman and Nordmyr (2017), Forsman et al. (2018), Jun and Kim (2016), and Kim et al. (2016), while being inconsistent with other past research by Bell et al. (2013), Caspi et al. (2019), Khosravi et al. (2016), Matthews and Nazroo (2015), and Woodward et al. (2011). This research also supports Damant et al.'s (2017) research, in which the researchers stated that most qualitative studies showed positive feelings related to ICT use and loneliness.

Feelings Related to Information and Communication Technology Use

The first theme encompasses most of the narrative related to ICT use, to include the impact that ICTs had on the participant users, while the remaining themes were

ancillary to the first theme. These include ICT use as a buffer, ICT use and the social needs model, ICT use and adverse effects, and artificial affectionate communications.

ICT Use as a Buffer

My research results are consistent with research performed by Wang et al. (2018) and Sims et al. (2016), who found that ICT use may buffer against loneliness and possibly serve as a substitute for face-to-face communications. My research results also coincide with results from Schlomann et al.'s (2019) research, which showed that ICT users reported lower levels of loneliness. The analysis of the narratives confirmed that using ICTs did act as a buffer to reduce the participants' feelings of loneliness, aligning with Cotton et al.'s (2013) research. Even though ICT use does help with loneliness, it was no substitute for actual face-to-face interactions. ICT use did seem to fill the distance gap between the participants and their families, supporting Nimrod's (2019) research about the importance of ICT use to preserve social engagement and thus reduce one's feeling of loneliness. Not only did ICT use assist in acting as a buffer against loneliness, but its use also assisted with maintaining social connectedness, described by Townsend and McWhirter (2005) as a human need. This also aligned with Cotton et al.'s (2013, 2014) research, which described the use of ICTs as potentially increasing feelings of connectedness and mattering (Francis et al., 2017).

ICT Use and the Social Needs Model

My research showed the importance of the social needs model, which was described by Kupersmidt et al. (1999) as a universal basic human need for social contact. ICT use was reported by the participants as being related to positive feelings and feeling

less lonely by giving the participants the ability to maintain social contact even when physically separated from family and friends. This seemed particularly evident when discussing social interactions during the Coronavirus Disease 2019 (COVID-19) pandemic; participants were able to maintain a line of communications with the addition of being able to see the face of the person who they were communicating with. The participants were extremely happy and thankful to be able to use this technology during a time when family and friends were not able to visit in person.

ICT Use and Adverse Effects

Siniscarco et al. (2017) stated that further research needed to be done to determine if there were any adverse effects associated with using ICTs. My research adds to this body of knowledge and aligns with previous research that showed no adverse feelings associated with using ICT teleconference technologies. There were two areas of interest, with one that might be considered negative. First was an interaction that Participant 4 had with her daughter. Her daughter was discussing a family tragedy via telephone. I asked Participant 4 if she thought that discussing such events would be worse if she were able to see her daughter's face. Ultimately, Participant 4 went back and forth with her answer to this question, but I felt as if it would have been a negative after listening to all her comments. Second would be adverse effects from one's inability to use the technology; this is something that I discuss in detail in the final theme discussion.

Artificial Affectionate Communications

Floyd and Morman (1998) defined affectionate communications as “an individual's intentional and overt enactment or expressions of feelings of closeness, care,

and fondness” (p. 145). The artificial aspect to this communications process lies in the fact that a visual and auditory communications process is occurring without individuals being near one another, thus performing this type of communications through an artificial means. I believe that this research confirms the importance of such a communications process, as well as its validity in maintaining connectedness to one’s social network. This research also highlights the difficulties with using such technologies, which will be discussed in detail in the next section.

This research also supports Nimrod’s (2019) research, where it was stated that ICTs were mostly used for communications purposes to maintain one’s social networks. The participants in this research primarily used ICTs for communications, though two participants did use them for information reasons such as attending Bible studies and telemedicine use.

Difficulties With Using Technologies Such as Information and Communication Technologies

Though the use of ICTs was a benefit to the participants in this research, there were issues related to using such technologies. My research coincided with Berkowsky et al.’s (2018) research, which determined that older adults may be less likely to adopt technologies such as ICTs based on their difficulty of use. The participants seemed to revel in the outcome of using ICTs, but they did not seem to enjoy the actual act of interacting with the technologies. Many of the ICT use interactions were completed with the assistance of a staff member or family member. Unless future technologies are reconfigured for use by older adults, older adults run the risk of evoking stereotype

threats related to self-perception, as noted by Caspi et al.'s (2019) research. As noted by Khosravi et al. (2016), further research would be beneficial in determining any adverse effects of using these current technologies. This is a difficult situation, in that it may be harder to encourage older adults to use newer and more user-friendly technologies.

Waycott et al. (2016) mentioned the fear that some older adults may have about learning new technologies, which also aligns with four of the five participants' narratives.

Participant 3 had an extensive technological background and had used videoconferencing technologies for multiple decades and seemed to have no issues with technology use.

Contributing Factors Impacting One's Feelings About Living in an ALF

Initial Transition

One of the negative aspects of living in an ALF environment was the initial transition phase of moving in and adjusting to living in an ALF. There were no specific timeframes established from this research for how long it took to finally feel comfortable with living in an ALF, but negative feelings about the initial transition were noted by the low-time ALF participants, which aligns with Smith's (2009) research.

Participant 4 had self-defined role issues that were apparent throughout her interviews, specifically when discussing her interactions with her daughters. Again, my research aligns with Gibbs's (2005) research in reference to the difficulties that some ALF residents have with their self-defined roles, especially during the transition phase, even though Participant 4 was a long-time ALF resident. These dramatic effects of being separated from a well-established life to an ALF were noted as far back as Weiss's (1973) research on loneliness.

Importance of ALF Friendships

As I mentioned earlier, ALF life, ALF friendships, and other ALF-related topics were not the primary purpose of this research. With this being said, it became evident while conducting this research how important internal ALF relationships were to the participants. As noted by Dykstra and de Jong Gierveld's (2004) research, loneliness is causally related to one's social network, with a decrease in social support equating to an increase in feelings of loneliness (Chen & Feeley, 2013). Cacioppo et al.'s (2010) research and Chen and Feeley's (2013) research noted the importance of an older adult's social network and its ability to protect the older adult from loneliness (buffering). Another important factor noted by Weiss in 1973, which was evident during my research, was relationships that were built on commonality. This was evident during a discussion with Participant 4 where she explained how important it was to have relationships with people who had common experiences, giving them the ability to empathize. My research is inconsistent with Abbott et al.'s (2013) research and Casey et al.'s (2015) research, which noted that one third of ALF residents did not develop positive relationships with other ALF residents. One of the most important findings of this research supported the importance of the buffering hypothesis, not only from the point of view of videoconferencing ICT use, which I discuss later, but from the aspect of close relationships in general, and the buffering they provide against loneliness. It was evident from the participant narratives that their ALF relationships were extremely important—as important if not more important than their relationships with their families—and seemed to act as a buffer against loneliness. This can be attributed to Stevens and Westerhof's

(2006) research on the importance of close, nonfamily relationships. The importance of establishing these close bonds with others was noted as early as 1946 in research by Bowlby. Participant 2 noted the importance of her relationship with her deceased husband, supporting 2006 research by Stevens and Westerhof who stated that social support from partners and friends had a greater positive impact on loneliness as compared to family members and seemed to be inconsistent with Cohen and Wills's (1985) research results. This was also evident in comments made by Participant 4, not only about other residents, but also about her close relationship with staff, even to the point that she joked about wanting to adopt some of them. This research supports Henderson's (1981) research, which stated that it is the quality of the social support that one receives that is important, not the quantity of support. This was evident in the findings of this research that demonstrated the importance of establishing relationships within the ALF.

One other important aspect of ALF relationships was related to mealtimes and their social and relationship aspect. Mealtimes emphasized the importance of understanding the unwritten rules of a group, dealing with tribalism, and other phenomena that should be areas of consideration for future research.

These relationships that were developed and discussed by the participants were described as being extremely close and important, noting the importance of having close relationships with others that one has things in common with (Weiss, 1973). After many hours of discussions about internal relationships, I believe that it is important to conduct additional research into this phenomenon as it relates to an ALF resident's level of need for outside communications and relationships.

Importance of Outside Relationships

Though mentioned earlier, I felt it critical to discuss the importance of external relationships from the perspective of the ALF environment. The only negative external relationship was discussed by Participant 4 when she described her feelings toward her daughters. Participant 4 had some issues with self-identity, where she had a difficult time accepting her new role as an ALF resident and not the role of being the head of her household. Participant 4 felt as though she were being warehoused, and that her family members were attempting to separate themselves from her. This negative outside relationship seemed to cause severe negative feelings for Participant 4. Though Stevens and Westerhof's (2006) research examined the benefits of relationships with friends and spouses over family in relation to reducing loneliness, it was evident from the conversations with Participant 4 that negative interactions can have a dramatic effect on a person's overall feelings of well-being.

Though all the participants placed positive feelings toward internal ALF relationships, it was evident by Participant 4's narrative that negative outside relationships can have a dramatic negative effect on a resident's life. As noted by Marsh Ryerson (2017), "strong social connections are central to our physical and mental well-being" (p. 124). As noted by Cacioppo et al. (2015b) and Hawkey et al. (2012) as they described emotional loneliness, the absence of close, intimate relationships is correlated to higher levels of loneliness. This seems to align with Dunbar's (2014) description of an inner core group, which usually consists of up to five people who are relationally close.

Other Issues Related to This Research

There were two peripheral issues that I believe did have an impact on the participants' ability to maintain personal contact with their social networks, as well as their overall well-being, which were the impact of the COVID-19 virus and the participants' inability to have their own means of transportation.

COVID-19 Pandemic Implications

As mentioned earlier, the pandemic seemed to highlight the benefits of using ICTs, as well as the importance of internal ALF friendships. Some of the participants had never used ICTs until they had no choice because of the pandemic. Participant 4 described the negative impact of COVID-19 on her feelings of losing her independence. The pandemic was a negative life event that interrupted the participants' normal social interaction process, and to some extent, was overcome by using ICTs. Though this was not a primary consideration for this research, the impact of the pandemic on this population does seem to be an area that requires further research.

Inability to Have One's Own Transportation

Though some ALF residents did still maintain a personal automobile and driver's license, enabling them to physically leave the ALF, all the participants in this research did not have that ability. Many of the participants were also separated from most of their social networks by extended distances, not making personal automobile travel feasible. Czaja et al. (2018) mentioned how ICTs may assist in maintaining connectivity between those older adults who have mobility issues or that are separated by significant distances, or that live in isolated areas. This issue of having mobility and maintaining contact with

family and friends was also mentioned in an earlier study by Francis et al. (2017). In the Living in ALFs section, Participant 4 went in to excruciating detail about the negative impact of losing her license and no longer being able to drive her car. This loss of ability to go where one wants to go, when they want to go, was a serious negative life event, as described by Participant 4. Not only did she lose her ability to drive, but it was also done without her consent, which exacerbated the negative feelings.

Limitations of the Study

The primary limitations of this study were the limited number of participants involved in the research, as well as the limited number of participating ALFs. Though data saturation was accomplished with the five participants, for generalizability, it would have been beneficial to have had participants from multiple facilities throughout the region. Finding facilities willing to participate in this research was a barrier, which caused the data collection process to take much longer than it should have. Another limitation was finding qualified older adults who met all of the requirements, specifically, the requirement of having ICT videoconferencing use experience. Again, with more participating facilities, more qualified persons would have been available. Additional research in this area would be required to establish generalizability.

I attempted to constantly reevaluate my role as the researcher to ensure no personal biases were introduced into the research. Simply due to the structure of the narrative inquiry, it is possible that personal biases were introduced based on the back-and-forth interactions of this type of data collection.

Recommendations

This research was primarily concerned with determining older adult ALF resident ICT users' feelings about using this technology and their feelings relating to loneliness. This primary goal was accomplished with the data that were obtained from the five participants, but it would be beneficial for larger studies, encompassing more participants with varying backgrounds and cultures, over a larger geographical area. Larger, more intensive studies would be beneficial and add to the knowledge base of loneliness and ICT use among this population.

This research also highlighted the importance of social support from partners and friends, as noted by the legacy research of Stevens and Westerhof (2006). Internal ALF relationships were noted as being extremely important to the participants and one that may diminish the extensive use of ICTs. Within this needed research, a closer look at the dynamics of mealtimes at ALFs would be beneficial to determine the positive and negative impacts of personal interactions at ALFs. More research needs to be conducted on the importance of internal ALF relationships, to include the relationships with staff and caregivers, and how this may diminish the need for extensive ICT use. Although this research showed positive feelings towards ICT use and less feelings of loneliness, these technologies were difficult to use and caused anxiety among older adult users. Future research should be accomplished to determine what types of hardware and software would be conducive to increased older adult use. Along with the typical ICTs, a piece of technology used that would not be considered an ICT, was discussed by Participant 5, which expressed positive feelings about this technology. This technology was a Wi-Fi

connected still photo picture frame that allowed family and friends to instantaneously upload photos via the internet. This was only used by one of the five participants, but it seemed to have a dramatic effect on her, thus this may be an area that requires further research as a coping mechanism against loneliness. Another benefit of this technology was its ease of use.

Another major recommendation is that all ALFs and similar facilities provide technical support for its residents. This would include everything from using ICTs to setting up a resident's television remote control.

One last area that needs further investigation is the impact of COVID-19 on the internal and external ALF relationships, as well as its impact on maintaining outside communications with one's social networks.

Implications

The social change implications from this research could add to the knowledge base of a multitude of different research areas, but primarily to research relating to loneliness of older adult ICT users. The implications reach much further than benefits relating to older adult ALF residents, they could provide valuable insight to family members, friends, facility staff and caregivers, as well as other stakeholders related to the ALF and older adult care industry. This research added to understanding a technology that can reduce an older adult's loneliness levels, thus increasing that person's overall wellbeing. This research also added to the knowledge base of older adult life in ALFs, along with some of the positives and negative issues, thus allowing families to make informed future decisions about the placement of their older adult family member into a

particular facility. Though this research was conducted with a small number of participants, it added to the voice of the older adult ALF resident and brings additional issues to the forefront, to include the importance of internal relationships, the importance and impact of staff shortages, the importance of the right type of ICT, and the importance of adequate in-house technical support.

Conclusion

The older adult population that I interviewed in this research were aware of the benefits of ICT technologies but seemed to understand that using these technologies was almost too difficult to use without some outside support. This technology was primarily used to maintain contact with family members and did act as a buffer against loneliness. This research also brought to the forefront many other extenuating and interrelated issues, such as the importance of internal relationships, the importance of good caregivers, how difficult current ICTs were to use, and the difficulties of dealing with transitioning to the ALF environment. These issues need further extensive research.

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Appendix A: Recruitment Flyer

My name is Richard Adams, a PhD student in social psychology at Walden University. I am conducting a research study on older adults that live in assisted living facilities and use information and communication technologies (ICTs) to stay in touch with family and friends. This technology includes using such things as cell phones, iPads, and computers to visually communicate.

I am seeking volunteers that currently or have used electronic devices with videoconferencing to communicate with family and friends. This research will consist of telephone interviews that will last approximately 45 to 60 minutes. There may be as many as two interviews. Each interview is completely voluntary with the participants being able to exit the research at any time with no explanation being necessary. You will be given a \$25 gift card as a token of appreciation before each interview. The interview will take place in the facility that you live in and in an area that you chose and are comfortable with.

Any volunteer may withdraw from this research at any time during the research process and still receive the token of appreciation. The researcher hopes this research will contribute to the field of older adult assisted living facility ICT users and loneliness.

The Institutional Review Board (IRB) approval number from Walden University for this study is 04-29-21-0470766 and expires on April 28, 2022.

If you have any questions about participating in this important research, or just have questions, please feel free to contact me at richard.adams@waldenu.edu.

Sincerely,
Richard D. Adams
PhD Candidate
Walden University

Appendix B: Interview Questions

1. How do you feel about living in an assisted living facility?
 - a. How do you think this impacts your ability to stay in touch with your friends and family?
 - b. What is a typical day like for you?
 - c. How would you describe your current social network, to include where you live now?
2. Can you describe how you feel about your family and friends that are not here with you at this ALF?
3. Can you tell me about how you started using videoconferencing technologies?
 - a. How long have you been using them and how do you use this technology?
4. Can you walk me through the events of a typical videoconference call?
5. Tell me the story of you using videoconferencing technology and how you felt about it afterward?
6. Can you explain your feelings about communicating with your family and friends by videoconferencing compared to when you can speak to them and see their faces?
7. How do you think using videoconferencing technologies affects your level of loneliness?
8. Can you explain to me how you feel during and after you are able to video conference with your family?

9. Can you explain to me how you feel during and after you are able to video conference with your friends?
10. (If applicable) Can you explain to me how you feel during and after you are able to video conference with your spouse/significant other?
11. Are there particular interactions that make you feel better/worse, and who are they with?
 - a. Why do you feel that way?

Appendix C: Assisted Living Facility Participation Request Letter

Richard D. Adams
Doctoral Student, Walden University

April 30, 2021

Ms. Jane Doe
105 Jane St. NW,
Hanceville, AL 35077

Dear Ms. Doe:

I am a doctoral student from Walden University writing my dissertation titled, *Artificial Affectionate Communications and Loneliness*, under the direction of my dissertation committee, chaired by Dr. James Herndon, who can be reached at james.herndon@mail.waldenu.edu. The Walden University Institutional Review Board (IRB) can be contacted through the main phone number, 855-646-5286 or by Email at IRB@mail.waldenu.edu. Walden University's approval number for this study is 04-29-21-0470766 and it expires on April 28, 2022.

My research is a qualitative narrative study that intends to examine the experiences of older adults' use of videoconferencing information and communication technologies (videoconferencing technologies such as FaceTime and Skype) and how their use relates to feelings of loneliness. This research will target older adults that live in assisted living facilities and that are separated from their previous social network (family and friends). The research data will be collected by performing no more than two telephone interviews with approximately 5 to 10 volunteers.

Participating facilities, research participants, and other stakeholders will be given a summary of the study upon its completion and publication.

Names of participants and participating facilities will not be used in the research or released to anyone outside of the research process (Walden University Staff).

I would like your permission to conduct this research at your facility (via telephone interviews) with approved residents that meet the criteria for this research. The basic criteria are:

- must volunteer to participate in the research study
- must be an older adult resident of your facility

- must have experience with videoconferencing technologies
- must be separated from their primary social network (family and friends)
- must be medically able to participate in this research (interviews)
- must speak English
- must be willing to sign an informed consent letter

If these are acceptable terms and conditions, please indicate below by checking the applicable responses, and replying via email richard.adams@waldenu.edu.

Sincerely,

Richard D. Adams
 Doctoral Candidate, Student Number A00470766
 Walden University

Check any applicable:

- I hereby authorize Richard D. Adams, student at Walden University, to use the premises (facility identified below) to conduct a study entitled Artificial Affectionate Communications and Loneliness.
- I hereby authorize Richard D. Adams, student at Walden University, to recruit subjects for participation and to conduct a study entitled Artificial Affectionate Communications and Loneliness.

 Signature

 Date

 Name

 Title

 Address of Facility

Appendix D: Prescreening Questions

Pre-screening will occur in-person, via telephone, or by email, depending on what is easier for the potential participants. My phone number and email will be listed on the recruitment flyer (Appendix A). During the pre-screening, the following subjects will be discussed with the potential participant before the screening questions are asked.

- Discuss nature of the study
 - Potential benefits of the study
 - Potential risks of the study
 - Demographic questions
 - What is your age?
 - What is your race?
 - What is your marital status? If married, does your spouse live in the facility with you?
 - What is your education level?
 - Do you believe you have a medical condition that would prevent you from participating in this research?
 - Do you still drive a vehicle? If so, how often do you travel outside of this facility?
 - Do you have any other means of transportation? If so, how often do you travel outside of this facility?
1. Are you interested in learning more about volunteering for this study? – this research is strictly on a volunteer basis.

2. Are you a resident of an Assisted Living Facility in North Alabama?
3. How long have you lived in an assisted living facility?
4. Are you 60 years of age or older?
5. Do you have past or current experience using videoconferencing technologies, such as Skype, Zoom, FaceTime, Google Hangout, Portal, or others?
6. Are you physically separated from your normal social network (spouse, family, friends, other groups, or organizations)?
7. Do you believe you suffer from any physical or mental ailments that might prevent you from participating in an interview?
8. Do you speak English well enough to answer questions in an interview?
9. Are you willing to consider signing an informed consent form if you decide to participate in this research?

Appendix E: Exit Briefing

The exit briefing will consist of a debriefing which will cover an overview of our interactions, as well as a review of data storage and privacy procedures I will employ:

- participant name/code information will be password protected on a separate document and secured on the researcher's computer
- all data will be converted to electronic format and stored on researcher's secure computer
- all electronic data will be destroyed after 5-years of secure storage
- data will be stored on a separate hard drive that can be removed and stored/secured when not in use

Each participant will be given the researcher's contact information again and will be informed that they can contact the researcher any time after the research if they have any questions.

Appendix F: Interview Protocol

Event Date	Start Time	End Time	Event Description

NOTES

1. Introduction and thank you
2. Recap of research study and what will happen today
3. An exit reminder
4. INTERVIEW
5. Contact information review
6. Explanation of the exit process (completion of research)
7. Closing statement