

EFFECTIVENESS OF MOBILE PHONE MESSAGING TO REDUCE SOCIAL ISOLATION OF OLDER ADULTS

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ABSTRACT

Social isolation and loneliness in older people are major public health problems currently topping the untreated healthcare listed. In the United States alone, 162,000 deaths per year are attributable to social isolation, third only behind cancer (321,000) and heart disease (319,000). With an increase in the older adult population (55 of age and older), health care demands from the aged are rapidly increasing across the globe. Social isolation and loneliness in older people are major public health problems currently topping the list of untreated healthcare. The ability to alleviate social isolation amongst a vast population through mobile technology and the ease of text messaging is viable. Information communication technology, specifically mobile phone messaging, is an under-studied method of maintaining or expanding social networks in older adult communities.

Keywords: social isolation, loneliness, mobile technology, mobile text messaging

INTRODUCTION

After a preliminary description of mobile phone technology and the increased older adult population, this paper addresses the findings of previous literature on the nature and causes of social isolation and loneliness amongst older adults. Then the framework for research examines what organized mobile technology communication affects older adults and how these activities measure up to the desiderata suggested by the literature. This paper will also consider the relative roles played by mobile technology and the ability of older adults to reduce social isolation and loneliness via text messaging (SMS). This paper aims to show a gap in literature re of mobile technology to monitor Activities of Daily Living (ADL) to reduce social isolation of older adults.

With an increase of older adult population (55 of age and older), health care demands from the aged are rapidly increasing across the globe. According to data from World Population Prospects: the 2019 Revision, by 2050, one in every six people in the world will be over the age of 65, an approximate 16% (World Population Prospects 2019). In 2018, for the first time in history, individuals aged 65 or above outnumbered children under five years of age worldwide. Furthermore, in a 2015 report, "An Aging World: 2015 (2016)," 17% of the world's population by

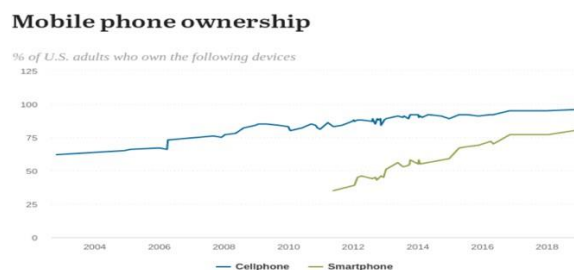
2050 (1.6 billion) will be over the age of 65. The number of persons aged 65 years and older will increase from approximately 35 million in 2000 to 70 million in 2030. With a dramatic increase in a growing population, the social isolation of older adults can be an even larger epidemic than in the current day. According to a recent Pew Research Study (2019), approximately one out of six individuals over 55 live alone.

Healthcare providers worldwide are currently facing various obstacles in providing quality health care, including the increasing size of the aging population, a shortage of healthcare workers, workers formal and informal, patient needs for increased access to health information and participation in healthcare decision making, as well as increased healthcare costs (Armstrong, 2007). Social isolation and loneliness in older people are significant public health concerns currently topping the list of untreated healthcare. Social isolation and loneliness in older people have been associated with poor psychological and physical outcomes and increased mortality (Nicholson, 2012, Steptoe et al., 2013). Loneliness is troublesome as it is associated with reduced health, increased mortality and negatively impacts the wellbeing of older adults. The connection between social isolation and loneliness does not always correlate with each other. However, people may feel lonely despite being surrounded by family and friends, whether rural or metropolitan.

Health risks associated with social isolation have been compared in vastness to the well-known hazards of smoking cigarettes, heart disease, and obesity (House, 2001). Social isolation can be defined as the lack of sustained and meaningful connections to other individuals, while loneliness is defined as a perceived lack of interaction with others (Poscia et al., 2018). Despite the fact, there is a better understanding of the role of social determinants in the social isolation epidemic in older adults, programs, and policies targeting social determinants have been arduous to implement and evaluate. According to an Agency for Healthcare Research and Quality report (2019), in the United States, 162,000 deaths per year are attributable to social isolation, the third only behind cancer (321,000) and heart disease (319,000) (Weir et al., 2017). Yet, compared to health behaviors such as smoking and obesity, much less is known about how and why social isolation affects health (Cornwell, 2009). Further research and methods are needed to determine how to correct and treat individuals suffering from social isolation and loneliness to reduce comorbidities and improve the overall quality of life.

However, enhanced mobile technology and ease of use of cellular phones can effectively overcome the obstacle of social isolation. A recent study from the Pew Research Center (2019) found that among older adults ages 65 and above, about 85% owned a cell phone. Of those seniors, 46% used a smartphone, and 40% used a regular cell phone (See Table 1). According to the same 2019 Pew Research Center report only 67% of older adults ages 65 and above have access to the internet. According to a 2017 AARP study, text messages (SMS) and emails are the most popular methods to stay in touch for older adults aged 50 – 69, who use technology at 94%. Older adults age 70 and over prefer text messaging and email with cellular phones at a rate of 73% (Anderson, 2017) (See Table 2). With a high threshold of current mobile phone owners over the age of 55, an intervention with mobile technology can be a success.

Table 1



Source: Surveys conducted 2002-2019.

SELECTION OF PUBLICATIONS

A narrative approach in this literature review is used rather than a meta-analytic approach because it allows for a wide range of studies that use different methodologies. Also, a narrative process is logical, given the relatively limited body mobile phone use to increase medical access for older adults' research.

To find articles, I searched well-known databases, including EBSCO, Ageline, PubMed, Mandalay, University of North Texas Library, ITSA, and Medline. Search terms included mobile phones, health access, medical for aging, and social isolation. A combination of other words also yielded results in the literature search, such as health disparity, comorbidity, and successful aging through mobile technology.

Expected findings of the research will show a willingness and aptitude toward using technology that has been misrepresented in past research. The ability for an individual to maintain connectedness and the ability to remain independent will outweigh the negative of an actual face-to-face meeting when concerning healthcare. The significance of the study will show the ability to reduce or eliminate social isolation and loneliness through mobile technology. Other components that may be uncovered are that quality and effective healthcare for older adults while maintaining minimal to low expense from the comfort of their own home is achievable. The study will also show that the simple mobile technology of text messaging can reduce social isolation and increase activity for older adults, reducing comorbidities. An increase in physical activity and a reduction in social isolation and loneliness will prove to be a health determinant across multiple demographics, most notably for those aged 55 and older.

LITERATURE REVIEW

Several researchers and studies have undertaken literature reviews on quantitative analyses into social isolation and loneliness interventions with older adults. Previous research has shown that a lack of accessibility can cause social exclusion in rural areas, whereas, in urban areas, a lack of accessibility is often a consequence of social exclusion (Currie, 2009). Agency for Healthcare Research and Quality report (2019), in the United States, 162,000 deaths per year are attributable to social isolation, third only behind cancer (321,000) and heart disease (319,000) (Weir et al., 2017). Studies show that older adults use significantly more health care services than age groups below the age of 55 (e.g., Brodsky, 2007; Shmueli, 1996; Stump, 1995) due to increased morbidity and disability. Although there are variations in utilization of health services among the elderly population itself, it was found that the oldest old (90+) used fewer health care services than the younger elderly (Lecovich, 2009). There is considerable potential for new and existing technologies to overcome medical access challenges for older adults in America. The existing literature on mobile phones and medical access for older adults inspired the development of research questions and hypotheses in the present study. The literature review has helped to formulate the following research questions.

RQ1: What are older adults' perceptions of mobile phones and the ability to access wanted needs from home?

RQ2: To what extent do older adults currently use mobile phones to reduce social isolation and loneliness from home?

RQ3: Could social isolation and loneliness be two independent processes affecting health differently, or could loneliness provide a pathway for social isolation to affect health.

H1: Mobile phone anxiety concerning social isolation decreases with use.

H2: Mobile phone and human interaction interest and efficacy increase with use.

Relevant literature is identified via searching peer-reviewed material with EBSCO, University of North Texas Library, PubMed, and Mandalay. There are multiple combinations and terms used to derive the number of articles found. Terms included "Cellular Phone" and "Aged" as well as keyword terms, such as "Mobile devices" and "Older adults." Furthermore, the subject heading of "Aged" with other keywords of "elderly," "older adult," with keywords for mobile phones, including "mobile phone," "cell phone," "cellular phone," "cellular telephone," and "mobile telephone" were utilized. I included articles if they were published between 1981 and 2019. A total of 288 articles were uncovered through this search. Approximately six studies with relevance were found on the National Institute of Health website as well.

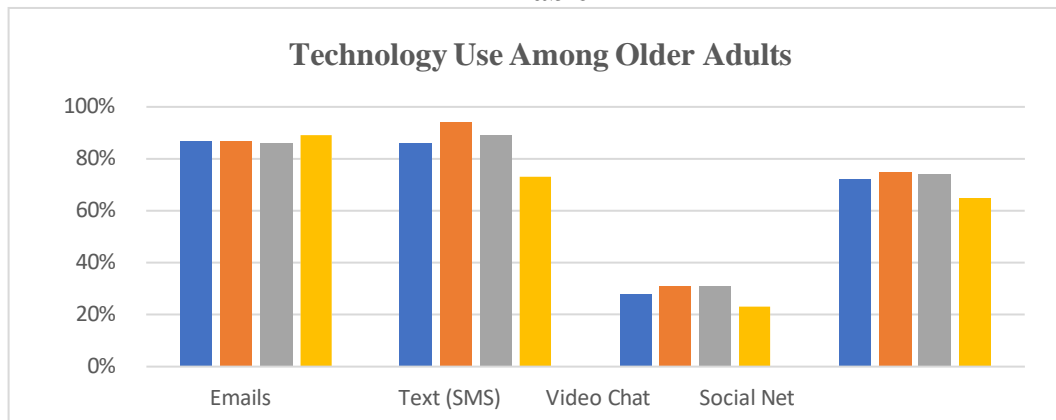
THEORETICAL FRAMEWORK

For the earlier formed literature review, the online library services of the University of North Texas, Scopus, and Mandalay were initially used. Next, as mobile technology is still emerging in various user-friendly forms, a pre-adoption perspective was applied when forming the conceptual understanding for this study that involved combining the theories. The Diffusion of Innovations theory factor of compatibility, service quality, trust, and risk will be attempted or incorporated in the model and individual differences between social isolation and loneliness. Social cognitive theory and successful aging will be significant components of the framework as well. Social cognitive theory synthesizes concepts and processes from mental, behavioristic, and emotional models of behavior change. Social cognitive theory can be readily applied to mobile technology intervention for social isolation and loneliness management.

Mobile Technology

Mobile technology innovations, for example, the ease of text messaging, have been used to reduced health disparities and meet the unmet needs of diverse populations, including adults aged 55 and older. Consumer health mobile technology interventions can help individuals monitor their health, provide information and social support, and remote home monitoring (Gustafson et al., 2001 and Skeels, 2010). A majority of evidence-based interventions to promote regular physical activity have used in-person instructional formats. Many of the constraints of such approaches are time, intervention fidelity challenges, transportation, and costs. Such resource-intensive undertakings can be problematic for maintaining health behavior change over any given period. Mobile technology approaches to health behavior change provide an empirically supported, convenient, and potentially low-cost alternative for reaching large proportions of the public over a more extended period (Wilcox et al., 2008). Mobile phones have gained significant popularity for older adults because they allow people to stay in touch and easily access information anywhere and anytime.

Table 2



The more recent growth of cellular phone use is a phenomenon that crosses all socioeconomic and demographic boundaries. More than just the latest technological gadget, cellular phones have become an integral part of business and personal lives. The use of cellular phones is up in the United States by older adults. A recent study from the Pew Research Center (2019) found that among older adults ages 65 and above, about 85% owned a cell phone. Of those seniors, 46% used a smartphone, and 40% used a regular cell phone (See Table 1). Furthermore, according to a 2017 AARP study, text messages (SMS) and emails are the most popular methods to stay in touch for older adults aged 50 – 69 who use technology at 94%. Older adults age 70 and over prefer text messaging and email with cellular phones at a rate of 73% (Anderson, 2017) (See Table 2).

Mobile technology has presented an opportunity to reach older adults across various socioeconomic statuses to close the health disparity gap. Individuals in the general population use their mobile phones at a higher rate to communicate with others via text messaging. Strong evidence shows that text message-based health interventions improve health (Arambepola, 2016) and increase healthy behaviors across various communities and demographics (Orr, 2015). Configuring messages and using participants' preferred language may contribute to individual satisfaction with text message-based health interventions for older adults (Park, 2014). A study published in 2010 confirmed the benefits of text message campaigns, concluding that text messaging is a promising tool for improving health because of its availability, relatively low cost, widespread use, technological ease, and applicability to many health conditions (Cole-Lewis et al., 2010).

Social Isolation

Social isolation and loneliness in older people are major public health problems currently topping the list of untreated healthcare. Social isolation and loneliness in older people have been associated with poor psychological and physical outcomes, as well as increased mortality (Nicholson, 2012, Steptoe et al., 2013). Agency for Healthcare Research and Quality report (2019), in the United States, 162,000 deaths per year are attributable to social isolation, third only behind cancer (321,000) and heart disease (319,000) (Weir et al., 2017). Health outcomes of seniors are affected not just by biomedical issues but also by psychosocial factors. Social isolation and loneliness are among risk factors that negatively affect seniors' health (Holwerda et al., 2012). These risk factors can include but aren't limited to obesity, depression, cardiovascular disease, amongst others.

Social isolation has been defined inconsistently, which limits research into this phenomenon. Social isolation can be defined as the lack of sustained and meaningful connections to other individuals, while loneliness is defined as a perceived lack of interaction with others (Poscia et al., 2018). The negative impact on health associated with older adults being socially isolated, and the predicted increase of the growing population of the numbers of older adults in the future, it is crucially important to focus on eliminating social isolation to its greatest extent. Older adults who reside alone or have become homebound for various reasons are at increased risk of being socially isolated (Lien-Gieschen, 1993). Social isolation, which represents the opposite of wellbeing, may be preventable or reversible if risk factors are accurately identified and addressed (Nicholson, 2019). Through contact and mobile technology intervention, social isolation can be reduced if not eliminated.

Socially isolated older adults are at increased risk for all-cause mortality, lower quality of life, lower cognitive function, poor nutrition, and lower overall wellbeing (Golden, 2009). These adverse health outcomes are well documented, yet few methods are available to measure social isolation in older adults concisely and in a way that distinguishes it from related concepts such as social networks (Nicholson, 2019). Social withdrawal, loss of independence, death of others, and insufficient control due to physical changes and impairment, being more typical of old age (Victor,

2000). Furthermore, socially isolated older adults are at risk for negative behaviors, such as heavy drinking and poor nutritional habits (Locher, 2005).

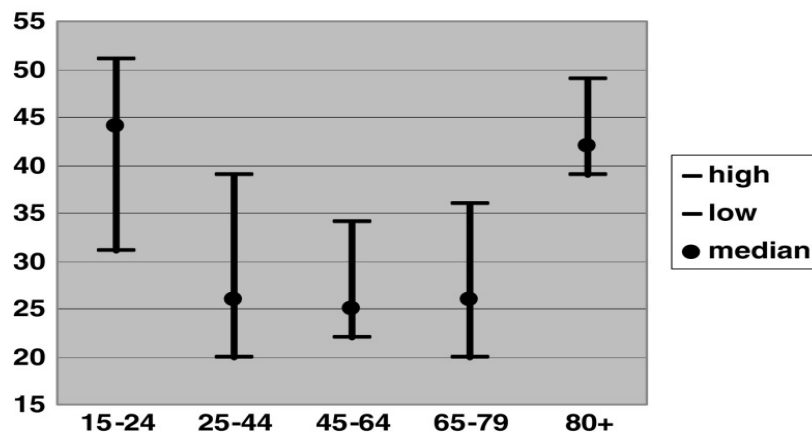
Loneliness

Loneliness has become of worldwide concern, having a more negative impact on health than obesity, and affecting all groups from adolescents to especially older adults. Loneliness is understood to be a clinically relevant cognitive state with demonstrated adverse effects on physical and mental health (van Beljouw et al., 2014). Research conducted by Dr. Caprio found that; "Being alone and loneliness are different but related. Social isolation is the objective physical separation from others (living alone), while loneliness is the subjective distressed feeling of being alone or separated. It's possible to feel lonely while among other people, and you can be alone yet not feeling lonely (Cacioppo, 2018)."

Losing a sense of connection and community can change a person's point of view of the world. An individual experiencing chronic loneliness may feel threatened and mistrustful of other individuals, which activates a biological defense mechanism. According to Steve Cole, Ph.D., "Loneliness acts as a fertilizer for other diseases, the biology of loneliness can accelerate the buildup of plaque in arteries, help cancer cells grow and spread, and promote inflammation in the brain leading to Alzheimer's disease. Loneliness promotes several different types of wear and tear on the body." (NIH, 2019)

One definition of loneliness is an unwanted discrepancy between the relationships one has and the relationships that one would like to have (Perlman, 1981). Loneliness can be seen in three different factors. The first factor pertains to social network characteristics: the number of individuals within the network and the quality of the relationships within the immediate network in which people are involved (Wenger, 1996). Research has repeatedly shown that unmarried individuals are lonelier than married and that individuals with unsupportive networks are more desolate than those actively engaged in social networks (Dykstra, 2009). The second group of determinants pertains to relationship standards: the preferences, expectations, and desires for personal relationships (Dykstra, 2009). The concept of loneliness can occur when the relationships someone has does not meet their goals, needs, or standards. The third factor pertains to predisposing conditions: factors that might explain why people have deficiencies in their social networks. These predisposing conditions may result from multimorbidity, lack of physical attractiveness, lack of personal confidence, and a lack of confidence in the individuals' network itself (Dykstra, 2009). Loneliness can also be found to correspond with age (See Table 3).

Table 3



METHOD

Methods used in this research would extend to the user-centered paradigm by designing a study in which participants are tasked with assessing health information resources rather than a study that assesses participants' comprehension of these materials. The User-centered design process outlines the phases throughout a design and development life cycle, all while focusing on gaining a deep understanding of who will be using the product or service (Usability.gov, 2019). By concentrating on document features rather than participant skills, these methods can be applied to studies that engage participants who might experience similar challenges when practicing health literacy, such as English-language learners or adults with specific intellectual disabilities (Morales, 2017).

According to Van Teijlingen and Hundley (2002), researchers should conduct pilot studies to develop adequate research instruments, design a research protocol, and identify potential logistical problems. Therefore, several research methods will be employed, such as meta-analysis, qualitative research, and possibly research software. Also, a multitude of surveys will be conducted covering various demographics to find what technology older adults are willing to use and their aptitude in using technology. Upon approval from the University of North Texas Internal Review Board, surveys can be conducted in various communities such as Good Samaritan in Denton, Texas, Wyndemere in Keller, Texas, and different other polling areas will be assessed for high interaction. If increased numbers are needed, Amazon Turk is possibly another tool, understanding that data collected from Amazon Turk is not always reliable. The United States Census Bureau data set will be utilized to target specific areas within communities of need.

An extensive search of the National Institute of Health and National Institute on Aging databases for prior funded research will be conducted to locate possible surveys and questionnaires to assist in collecting data. Assistance in filing for potential grants to fund the research process may be obtained in this manner equally. Prior research of similar studies may yield fruitful gains in both theories and data to conduct an IRB-approved survey from the University of North Texas. Furthermore, previous studies can potentially provide unforeseen errors and biases such as attitudes of participants, lack of a proper measurement system, and correctly applied theories.

LIMITATIONS

Possible limitations for this research include a lack of more recent material, including mobile phone technology and the barriers of older adults. The current aging generation, Baby Boomers (Birth Cohort 1946-1965), have a better understanding and higher use of mobile technology. Other limitations may include willing participants and the trust factor of an aging population and technology. Older adults are slower to adopt new technologies than younger adults but will do so if those technologies appear to have value, for example, maintaining their quality of life (Heinz, 2013). Other unforeseen limitations may include a lack of desirability for participants to use mobile technology.

RESULTS

Thirty-eight different articles were found and categorized into several different clinical domains and focus, including social isolation, loneliness, mobile technology, and activities of daily life, among others. The largest group of articles focused on social isolation, followed by loneliness and mobile technology. Areas of interest studied included usability, acceptability, and effectiveness. While many different clinical studies were small, most studies needed more work to establish a more robust evidence base. Six trial interventions were found using mobile technology text messaging as healthcare reminders and self-reported data by the participants. However, no studies have used mobile technology to monitor Actives of Daily Living (ADL) as a driving mechanism to reduce social isolation.

CONCLUSION

Quality of life in late life has been dominated by health issues, social networks, cognitive health, and awareness. Far-reaching matters such as loneliness and other indicators of social determinants have received far less attention. The lack of attention to this understudied area is unfortunate, given that the quality of personal relationships is a crucial best predictor of health and life expectancy (Dykstra, 2009). These considerations formed the reason for focusing on older adults social isolation and loneliness. Social isolation may be perceived in the positive sense of “solitude” and may even be actively sought; however, a person’s isolation may be just what causes loneliness and multimorbidity.

Through a narrative literature search, various studies and articles have been found to show methods of measuring social isolation and loneliness and the direct effect a lack of social network may have on an older person. Based on what is known at present, sufficient data has been found to acknowledge that socially isolated older adults are less likely to be physically active outdoors. Equally, it has been uncovered that exposure to outdoor environments might alter mood, wellbeing, and depressive symptoms and provide long-term health benefits for older adults (Jacobs, 2008).

The findings of this study indicate that it is significant to include several contacts, feeling of being included, fulfilling relationships, engagement with other individuals, and quality of network members to determine an individual’s social isolation. Social isolation has the censorious attributes of engagement and social network, which are also agents of terms. Social isolation could be thought of as a syndrome or association of several recognizable features. Knowing or understanding social isolation is the first step in understanding how to eradicate social isolation, knowing how to measure social isolation, and determine the health determinants and disparities that accordingly are created by social isolation.

REFERENCES

- AHRQ. (2019, Feb). *Effective Health Care Program*. Retrieved from AHRQ: <https://effectivehealthcare.ahrq.gov/products/social-isolation/rapid-product>
- Anderson, G. (2017, December). *Technology Use and Attitudes among Mid-Life and Older Americans*. Retrieved from AARP: https://www.aarp.org/content/dam/aarp/research/surveys_statistics/technology/info-2018/atom-nov-2017-tech-module.doi.10.26419%252Fres.00210.001.pdf
- Arambepola, C. R.-C. (2016, April). The Impact of Automated Brief Messages Promoting Lifestyle Changes Delivered Via Mobile Devices to People with Type 2 Diabetes: A Systematic Literature Review and Meta-Analysis of Controlled Trials. *J Med Internet Res*, 18(4), 86.
- Armstrong, B. G. (2007). Challenges in health and health care for Australia. *The Medical Journal of Australia*, 9(187), 485.
- Cacioppo, J. a. (2018). Loneliness in the modern age: an evolutionary theory of loneliness (ETL). *Advances in Experimental Social Psychology*, 127-197.
- Cole-Lewis et al., H. K. (2010). Text messaging as a tool for behavior change in disease prevention and management. *Epidemiol Rev.*, 32(1), 56-69.
- Cornwell, E. W. (2009, March). Social Disconnectedness, Perceived Isolation, and Health among Older Adults*. *J Health Soc Behav*, 50(1), 31-48.
- Currie, M. (2009). An evaluation of supported bus and community transport services in rural Scotland. *University of Aberdeen*.
- Dykstra, P. (2009, June). Older adult loneliness: myths and realities. *Eur J Aging*, 6(2), 91.
- Golden, J. C. (2009). Loneliness, social support networks, mood, wellbeing in community- dwelling elderly. *International Journal of Geriatric Psychiatry*(24), 694-700.
- Gustafson et al., D. H. (2001). Effect of computer support on younger women with breast cancer. *J Gen Intern Med*, 16(7), 435-445.

- Heinz, M. M. (2013, Jan). Perceptions of technology among older adults. *J Gerontol Nurs.*, 39(1), 42-51.
- Holwerda et al., T. B. (2012). Increased risk of mortality associated with social isolation in older men: only when feeling lonely? Results from the Amsterdam Study of the Elderly (AMSTEL). *Psychological Medicine*, 42(4), 843-853.
- House, J. (2001, Mar-Apr). Social isolation kills, but how and why? *Psychosom Med.*, 63(2), 273-274.
- Jacobs, J. C.-R. (2008). Going outdoors daily predicts long-term functional and health benefits among ambulatory older people. *J Aging Health*, 20, 259-272.
- Lecovich, E. C. (2009, August). Differences in Accessibility, Affordability, and Availability (AAA) of Medical Specialists Among Three Age-Groups of Elderly People in Israel. *Journal of Aging and Health*, 21(5), 776-797.
- Lien-Gieschen, T. (1993). Validation of social isolation related to maturational age: elderly. *The Official Journal of the North American Nursing Diagnosis Association*, 4(1), 37-44.
- Locher, J. R. (2005). Social isolation, support, and capital and nutritional risk in an older sample: ethnic and gender differences. *Soc Sci Med.*, 60(4), 747-761.
- Morales, M. (2017). Health Literacy Research Methods: A Pilot Study Investigation with Adult Beginning Readers. *International Journal of Qualitative Methods*.
- Nicholson, N. F. (2019, June 15). Psychometric Evaluation of the Social Isolation Scale in Older Adults. *Gerontologist*, 1-11.
- NIH. (2019, April 23). *Social isolation, loneliness in older people pose health risks*. Retrieved from National Institute on Aging: <https://www.nia.nih.gov/news/social-isolation-loneliness-older-people-pose-health-risks>.
- Orr, J. K. (2015). Mobile phone SMS messages can enhance healthy behaviour: A meta-analysis of randomized controlled trials. *Health Psychology Review*, 9(4), 1-36.
- Park, L. H.-E. (2014). A quantitative systematic review of the efficacy of mobile phone interventions to improve medication adherence. *Journal of Advanced Nursing*, 70(9), 1932-1953.
- Perlman, D. P. (1981). Toward a social psychology of loneliness. Personal relationships in disorder. *London Press*, 31-56.
- Poscia et al., A. S. (2018). Interventions targeting loneliness and social isolation among the older people: An updated systematic review. *Experimental gerontology*. 102, 133-144.
- PRS. (2019, June 12). *Mobile Fact Sheet*. Retrieved from Pew Research Center: <https://www.pewresearch.org/internet/fact-sheet/mobile/>
- Skeels, M. U. (2010). Catalyzing social support for breast cancer patients. In: Proceedings of the 28th international conference on Human factors in computing systems. (p. 173). Chicago: ACM Press.
- Usability.gov. (2019, August). *User-Centered Design Basics*. Retrieved from usability.gov: <https://www.usability.gov/what-and-why/user-centered-design.html>
- van Beljouw et al., E. v. (2014). "Being all alone makes me sad": Loneliness in older adults with depressive symptoms. *International Psychogeriatrics*, 9(1), 1-11.
- Van Teijlingen, E. H. (2002). The importance of pilot studies. *Nursing Standard*, 16, 33-36.
- Victor, C. S. (2000). Being alone in later life: loneliness, social isolation and living alone. *Rev Clin Gerontol*, 10, 407-417.
- Weir et al., H. A. (2017). *Heart Disease and Cancer Deaths — Trends and Projections in the United States, 1969–2020*. Retrieved from CDC: https://www.cdc.gov/pcd/issues/2016/16_0211.htm#results
- Wenger, G. D. (1996). Social isolation and loneliness in old age: review and model refinement. *Aging Soc.*, 16, 333-358.

Wilcox et al., S. D.-P. (2008). Active for Life: final results from the translation of two physical activity programs. *Am J Prev Med*, 340-351.

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