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Caring Calls: A weekly phone call intervention and the correlation with loneliness in rural dwelling adults

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Abstract

Purpose: This pilot study's aim was to examine the impact of weekly phone calls from interprofessional students on loneliness in rural dwelling adults.

Design: A pretest and posttest quasi-experimental design was utilized.

Setting: The intervention was based in southeastern Minnesota, although the participants could have lived anywhere. Zoom for Healthcare © was utilized, and students were able to make the phone calls from their homes, therefore, no travel was necessary.

Subjects: The subjects were rural dwelling adults (over the age 18 years old).

Intervention: Interprofessional students made weekly social phone calls to rural dwelling adults over ten weeks.

Measures: The University of California, Los Angeles (UCLA) Loneliness Scale was used to compare the level of loneliness prior to the intervention to after the intervention.

Results: A Wilcoxon non-parametric test was conducted to analyze results. The overall average of the scores was -0.39, showing there was a decrease in loneliness over the ten weeks among participants, although not statistically significant ($p = 0.25$)

Conclusion: Although there was a decrease in loneliness among the participants, the sample size was small, and the results were not statistically significant. More research is needed on this topic to determine if phone calls from students can decrease loneliness in rural-dwelling adults.

Purpose

Loneliness can affect any age group. Knowing that loneliness may have adverse effects on health status and the perception of quality of life, it is a topic to be explored (Hawton et al., 2011; Theeke & Mallow, 2013). Prior to Sars-CoV-2 (COVID-19) pandemic, 40% of older adults reported experiencing loneliness (Cudjoe & Kotwal, 2020). With restrictions on physical contact due to the COVID-19 pandemic, people are potentially at greater risk for loneliness and social isolation. Social isolation and loneliness may influence an individual's health status and quality of life. Hawton et al. (2011) found that even when accounting for depression, physical mobility, age, gender, living alone, and employment status, social isolation was significantly related to health status. In another study, researchers found that individuals with more chronic illnesses, used more prescription medications, and had a perception of lower of quality life were more likely to be lonely (Theeke & Mallow, 2013). However, it is unknown if social isolation and loneliness occur because of chronic illness or if social isolation and loneliness lead to poor health and quality of life (Chopik, 2016; Hawton et al., 2010). This project explored if receiving an intentional phone call once a week impacted on feelings of loneliness in rural-dwelling adults.

Studies done prior to the COVID-19 pandemic examined the impact that technology use may have on loneliness. Technology use included phone calls, texts/emails, and video calls. Participants who had more frequent daily phone use, especially incoming phone calls, reported statistically significantly less loneliness as measured by the University of California, Los Angeles (UCLA) Loneliness Scale (Petersen et al., 2016; Gao et al., 2016).

A variety of interventions for decreasing loneliness include phone calls, text/emails, and video calls. Two studies found that participants who had more incoming phone calls, typically from family members or friends, had decreased social isolation and loneliness levels compared to

those who did not have as many incoming phone calls (Petersen et al., 2016; Gao et al., 2016). However, the number of outgoing calls did not demonstrate decrease in loneliness (Petersen et al., 2016; Gao et al., 2016). Feng and Astell-Burt (2016) also found an increase in social interaction correlated with a decrease in psychological distress.

Many studies focused on any phone call or specifically, phone calls from a family member or known social contact. However, one study involved volunteers making a weekly phone call to adults discharged within 24 hours of arrival from the emergency department (ED), short-stay observation unit, or acute medical ward for three months (Lowthian et al., 2018). The researchers found that participants receiving the incoming weekly calls had a decrease in loneliness over the three months (Lowthian et al., 2018).

Video calls have been utilized and studied to determine if there is a decrease in loneliness when compared to phone calls and face-to-face contact. However, much of the literature did not report a statistically significant decrease in loneliness with video compared to phone calls or face to face contact (Noone et al., 2020; Zamir et al., 2018; Burtholt et al., 2020). In a systematic review by Noone et al. (2020), no statistical significance was found between video calls and decreased levels of loneliness. Burtholt et al. (2020) also found no statistically significant decrease in loneliness among older adults receiving video calls. Another study found that some nursing home residents experience decrease loneliness from video calling their loved ones; however, findings were inconclusive due to the inconsistency among the staff members in facilitating the sessions with residents (Zamir et al., 2018).

There may be biases among adults and the use of technology for communication. Zamier et al. (2018) found that some staff members did not offer the Skype session to residents assuming they would not know how to use the technology or assuming they would not be interested.

However, one study found that 70% of the older adults sampled stated they were open to learning more about new technologies (Chopik, 2016). This paper further explores if incoming phone calls assist in decreasing loneliness in rural-dwelling adults.

Methods

Design

A pre-test post-test design was utilized to answer the following PICOT (population, intervention, comparison, outcome, and time) question: Do underserved rural-dwelling adults who engage in a video or phone call once a week have a decrease in loneliness on the UCLA Loneliness Scale from pre-intervention to post-intervention over a 10-week period?

Nursing and social work students from both undergraduate and graduate programs at a Midwest university made weekly social phone calls to consenting participants, in a program called Caring Calls. Participants were recruited through local stakeholders, who received permission to pass on the contact information of the participants. Participants gave verbal consent through Zoom for Healthcare ©, with at least one witness present. The first week of the intervention involved public health students contacting consenting participants to complete the UCLA Loneliness Scale and recorded the results. During the 10-week intervention, the nursing and social work students made weekly social phone calls to the participants. The phone calls typically lasted 30 minutes and revolved around the participants interests, ideas, or thoughts for that day. Phone and video calls were available as options to the participant. At the end of the 10-week phone call intervention, the public health students called participants to complete the UCLA Loneliness Scale to compare pre-and post- test scores.

Sample

A total of 5 participants consented to take part in the program involving completion of the pre-and post-instrument and weekly phone calls over the course of 10 weeks. Participants received a phone call at the beginning and at the end of the intervention to complete the UCLA Loneliness Scale. One participant was lost to follow up and one participant did not answer two questions on the post test. While five participants consented to the study, Caring Calls continued to recruit participants to sessions, and by the end of the 10 weeks, there were a total of 8 participants receiving weekly phone calls. The sample consisted of adults over the age of 18, although most participants were either middle age or elderly. While we did not collect specific ages from the participants, many talked about their retirement and missing their grandchildren during this time.

Recruitment of participants was done through stakeholders in the communities including local nursing homes and community health workers. Stakeholders shared information with individuals who may be interested in or benefit from this intervention. After the stakeholders received approval from the individual to refer to Caring Calls, the researchers contacted each participant to explain the study and obtained consent. This study was approved by the affiliated institutional review board (#1650549-1).

Measures

The University of California, Los Angeles (UCLA) Loneliness Scale Version 3 was used to determine a loneliness score prior to and after the intervention. The UCLA Loneliness Scale is a 20-question instrument asking a series of questions to determine an individual's subjective feelings of loneliness and social isolation (Russell, 1996). There are nine positive and ten negative questions in the questionnaire (Russell, 1996). For analysis, there were nine questions that were reversed and then summed together for results (Russell, 1996). The higher the score,

the greater the degree of loneliness (Russell, 1996). Permission to use this scale was granted by Professor Daniel Russell, creator of the scale.

The UCLA Loneliness scale is a 20-item questionnaire to examine the subjective relativeness of a person's loneliness rating (Russell, 1996). The scale has been tested for reliability and validity through multiple studies and appropriate for use in adults aged 18 or older (Russell, 1996). Reliability of the UCLA Loneliness Scale Version 3 showed a coefficient alpha range from 0.89 to 0.94 among the samples (Russell, 1996). Validity was tested through using a variety of samples including college students, teachers, nurses, and elderly that have completed the UCLA Loneliness Scale with result comparison to other reputable scales (Russell, 1996). The use of negative (lonely) questions along with positive (nonlonely) questions showed evidence of consistent response tendency among the samples (Russell, 1996).

Intervention

Caring Calls was implemented in southeastern Minnesota at a local university by interprofessional students from undergraduate and graduate nursing and social work programs making calls to participants. Calls were made every Thursday with three different sessions spaced throughout the day. Social work and nursing students made the weekly phone calls utilizing Zoom for Healthcare ©. At least one graduate student and one undergraduate student participated in each session, with one student leading the conversation, and supervising clinical faculty were present. It was attempted to have the graduate and undergraduate students be from different programs (i.e. one from social work and one from nursing), however, that was not always feasible due to student staffing. Training was provided to participating students, which included an introductory script, protocols, and other useful tips the students have available. The phone sessions were intended to provide social support and therefore students were trained to

allow the conversations to be reflective and drive by topics the participant wanted to discuss. Health promotion and wellness were encouraged but not the focus of the conversations.

Microsoft TEAMS was utilized as a common place for resources, education, and processes and procedures. An Excel spreadsheet was created to track participants, de-identified demographic information, phone numbers, date of last phone call and topics of interest to the participant. Due to the technology used, messages were not able to be left by the students if the participant did not answer the call. No more than two attempts were made in a day to reach the participant.

Students limited the sessions to 30 minutes to allow time for debriefing and documentation to be completed. Students completed an SBAR (Situation, Background, Assessment, and Recommendation) note for each phone call to communicate among the students from week to week. Students were expected to review the SBARs prior to the sessions for needed follow-up and to maintain continuity of care. Each participant had an individual folder where the SBARs were placed and labeled accordingly to the date of the phone call. No participant identifying information was kept in the SBARs and only students involved in program were allowed access to this information. All students completed a privacy and confidentiality training and signed a Health Insurance Portability and Accountability Act (HIPAA) agreement at the beginning of the program.

Analysis

Analysis of the data was done using a Wilcoxon non-parametric test. Five pre-tests and four post-tests were completed as one person was lost to follow up. The UCLA Loneliness scale asks both positive and negative questions, and therefore a reverse scale for Q1, Q2, Q5, Q6, Q9, Q10, Q15, Q19, and Q20 was completed using a 5-x score to align scales in data. Differences

were then computed as a Post Score – Pre Score. A positive difference implies that loneliness increased among the participants whereas a negative difference implies that loneliness decreased among the participants. Statistical significance was set with a p-value of less than 0.05.

While the results showed there was a decrease in loneliness among the individuals, there was no statistical significance found. The overall average for the difference in scores was -0.39 ($p=0.25$). The negative value is for the difference in scores, not the actual scores reflecting an overall decrease in loneliness by 0.39 points. Analysis was conducted on each individual question as well, described in Table 1. Most questions showed a decrease in loneliness but were not statistically significant. Question 5 “How often do you feel a part of a group of friends?” showed the greatest change in decrease among all the questions ($x = -1.5; p = 0.25$). This showed that from the pretest to the post test, participants answered higher on the scale that they felt they were apart of a group. However, Question 9 “How often do you feel outgoing and friendly?” had a positive result, meaning participants felt less outgoing and friendly at the end of the intervention ($x = 1.5; p = 0.25$). One explanation for this result could be the implications of the COVID-19 pandemic. At the beginning of the project, statewide restrictions were not as controlled, and cases were not as high. By the end of the intervention, cases were significantly rising, and state shutdowns were beginning to be implemented again. This unique context could have impacted the response on this question.

Discussion

Caring Calls was a pilot study to examine if there was a decrease in loneliness in rural dwelling adults receiving weekly phone calls from interprofessional students. While the sample size was small, a program that may assist with decreasing loneliness in rural dwelling adults was

developed and is ongoing. Barriers to this study include recruiting clients to consent to the study, stress and unknown nature of the pandemic, and technology discomfort.

A challenge existed in getting participants to consent to the study, even though they wanted to be involved in receiving phone calls. Many individuals did not want to be in a study focusing on loneliness. It was noted that participants did not appreciate the term “lonely” or feeling that someone thought they were lonely or that a service like this was needed for them; it felt negative for them. Many participants seem to respond better when they heard students were involved and wanted to assist in education. To overcome this barrier, callers explained to participants that they were assisting in student learning and involvement in the study may assist researchers in identifying ways to help others in times of loneliness. Additionally, raising more awareness in taking care of mental health could assist individuals to be more open about their mental health.

The COVID-19 pandemic created its own barriers with this study. While it was noted that this study could be beneficial during a time of physical distancing, no matter the intervention, the stress of the pandemic seemed to still weigh heavily on the mind of the participants. Additionally, recruiting participants was challenging during the pandemic due to limited physical contact. Building rapport and connections with stakeholders was beneficial but proved challenging with a difficult topic as loneliness when reaching out to participants individually, especially when no prior relationship had been initiated, and having to do so through email, phone, and Zoom for Healthcare © limited the personal connection with prospective referral sources. To overcome this barrier, reconnecting with the stakeholders and referral sources mentioned to explain how the program was going to gain more recruitments was necessary. Additionally, finding alternative ways to decrease loneliness through phone call strategies

including reminiscence therapy, mindfulness, and gratitude and building these into the sessions may be useful strategies.

Technology is a great asset and allows us to interact with participants while social distancing, however, there are barriers. When placing a call from Zoom for Healthcare ©, a New York or Chicago number is what the receiver sees, and some people would not answer the phone call, assuming it was an unsolicited phone call. This made recruiting very difficult, especially since a message could not be left. Technology was also challenging during severe weather, causing outages and loss of calls. However, participants expressed happiness by stating how much these phone calls meant to them and would regularly answer and participate in conversation.

Zoom for Healthcare © allowed the ability to make video calls as well as phone calls. This allowed the program to be able to provide video calls as an option for adults who wanted to utilize this option. Due to the limited research on video calls and decreased loneliness, it would be beneficial to continue to encourage the option and gather data to compare video calls to phone calls in decreasing loneliness. Further research in this area is warranted.

There were many learning opportunities throughout this study. Utilizing qualitative and quantitative data may give more insight on why participants answered questions from the UCLA Loneliness Scale in the manner that they did. It would additionally give more specific evaluation on how Caring Calls is helping or not helping feelings of loneliness among participating adults. Some participants expressed gratitude and thankfulness for calls and appreciated that the students remembered details about their lives asked follow-up questions from the conversation the week before.

Qualitative data may give more insight to participant feelings with the phone calls. Elaboration on certain questions from the UCLA Loneliness scale may provide a better understanding if this program is or is not helping to decrease loneliness. With this, future studies need to be conducted with a larger sample size to determine if a weekly phone from interprofessional students decreases loneliness in rural dwelling adults.

The impact that this program had on student learning was an additional unexpected finding. Although it was not part of the study, student learning was profound throughout the timeframe of Caring Calls. Students reported that they developed skills in therapeutic communication and motivational interviewing. The researchers of this study observed all phone calls and reported the students became more comfortable talking on the phone and began to navigate conversations more fluidly. The graduate students would also speak to this in the debriefings about the evident growth that was observed in the undergraduate students specific to communications skills.

Implications

Due to the limited research on decreasing loneliness with either phone or video calls, an intervention and evaluation plan was developed to respond and was found to be sustainable within an existing student-led, faculty-guided clinic. To continue this work and evaluation of participant and student involvement to understand how the intervention decreases loneliness in rural dwelling adults is warranted. The COVID-19 pandemic brought a year of uncertainty and change for all, and this free program was designed to positively impact participants and interprofessional students in their learning. While the intervention provided socialization at a safe distance during a global pandemic, it also allowed students and participants to develop relationships based on socialization.

Chopik (2016) found that adults are open to utilizing technology. Given previous studies demonstrate a correlation among loneliness, negative health outcomes, and quality of life, it is important to continue to find ways to decrease loneliness to those who may not be able to physically gather (Chopik, 2016; Hawton et al., 2010; Theeke & Mallow, 2013).

Declaration of Conflicts of Interest

The Authors declare that there is no conflict of interest.

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Table 1
UCLA Loneliness Scale Outcomes

Outcome	Reversed	Mean	Standard Deviation	N	p-value
Q1: How often do you feel you are "in tune" with the people around you?	R	-0.50	1.29	4	0.75
Q2: How often do you feel you lack companionship?		-0.75	0.96	4	0.50
Q3: How often do you feel that there is no one you can turn to?		-0.50	1.0	4	1.0
Q4: How often do you feel alone?		-0.25	1.26	4	1.0
Q5: How often do you feel part of a group of friends?	R	-1.5	1.29	4	0.25
Q6: How often do you feel that you have a lot in common with the people around you?	R	-0.33	0.58	3	1.0
Q7: How often do you feel that you are no longer close to anyone?		-0.50	1.0	4	1.0
Q8: How often do you feel that your interests and ideas with others are not shared by those around you?		-1.0	0.82	4	0.25
Q9: How often do you feel outgoing and friendly?	R	1.5	1.29	4	0.25
Q10: How often do you feel close to people?	R	-0.75	0.50	4	0.25
Q11: How often do you feel left out?		-0.75	0.96	4	0.50
Q12: How often do you feel that your relationships with others are not meaningful?		0.25	0.50	4	1.0
Q13: How often do you feel that no one really knows you well?		-0.50	1.0	4	1.0
Q14: How often do you feel isolated from others?		-1.0	1.41	4	0.50
Q15: How often do you feel you can find companionship when you want it?	R	-0.75	0.96	4	0.50
Q16: How often do you feel that there are people who really understand you?	R	-0.50	0.58	4	0.50
Q17: How often do you feel shy?		0.0	0.82	4	1.0
Q18: How often do you feel that people around you but not with you?		-0.33	0.58	3	1.0
Q19: How often do you feel that there are people	R	-0.25	0.50	4	1.0

you can talk to?					
Q20: How often do you feel that there are people you can turn to?	R	0.0	0.0	4	1.0