

Mental Health Ramifications of Social Distancing in the Elderly: What effect does social distancing brought about by the Covid-19 pandemic have on perceived loneliness and depressive symptoms of elderly people?

Thomas Larson¹ and Janette Sierra^{1#}

¹Pinecrest Preparatory High School, Miami, FL, USA

#Advisor

ABSTRACT

There were many unknown factors that arose from the spread of COVID-19 worldwide. Many researchers began to conduct research on questions surrounding this pandemic. One such question is how the COVID-19 pandemic affects people's mental states. This is, of course, far too broad of a question to properly research, but this study narrows down that question to discover the effect of the pandemic on the elderly's self-perceived loneliness and depression. This question was researched using a survey design that collected quantitative data, which was then interpreted with qualitative statistics to better understand the meaning of the results. This survey was conducted in a nursing home in February of 2021. This nursing home is in Miami and a total of 40 participants were used in the data collection, though two were later omitted due to incomplete responses. In keeping with the common demographic of Miami, many of the participants were Spanish speaking, and the questionnaires and consent forms were translated and offered in both English and Spanish. Of the 40 participants that responded, all used the Spanish translation forms. Because of how recent this pandemic is and the length of time it takes for professional researchers to report findings accurately, there are few resources. The data that does exist is from earlier phases in the COVID-19 pandemic, and thus rather indefinite.

Literature Review

There has been significant evidence for a strong correlation between elderly populations and an increase in loneliness (Desai et al., 2016). In America and other western countries, the trend of loneliness has seen an upward spike in elderly populations. For example, many people tend to look to elderly homes or nursing facilities to care for the elderly family members, and many studies have found that this can cause the residents to feel and be physically isolated from friends and family (Singh & Misra, 2009).

Now that the number of elderly people living by themselves is increasing around the globe, this topic is even more relevant than ever before (Grover et al., 2018). There are also some emerging studies relating elderly population to loneliness through various causes, including the Covid-19 pandemic. The present study examines how the Covid-19 pandemic affects elderly populations but addresses a research gap by identifying its effect on loneliness, but also analyzing its effect on depressive symptoms.

The studies analyzed focus on supporting the findings that loneliness can be a cause for an increase of negative mental health, with a focus on depressive symptoms. Some studies also explain the evidence found that social distancing can lead to an increase in loneliness. In this literature review acknowledgment will be given to the impact of social distancing factors upon loneliness, but this correlation will not be explored as heavily as possible, as this is the focus of this study, and a meager amount of research on the topic has been conducted by others as of February, 2021.

1. Loneliness as the cause for depression in elderly

There has been much research into the world of the psychological well-being of elderly people and some of the research conducted has focused on perceived loneliness, defining it in the process. According to Desai et al. (2015), loneliness is the action of being unsatisfied with one's own emotional and psychosocial needs, with another definition being provided by Grover et al. (2018, Par. 2) stating that loneliness is the "discrepancy between desired and real social relations."

Studies have also shown that elderly patients have a significantly high rate of depression (Grover & Malhotra, 2015). Others have analyzed possible causes for depression in the elderly. Singh & Misra (2009) found that an increase in loneliness can lead to an increase in depression among both the female and male elderly. These researchers gave several reasons for this loneliness, which will be discussed later in this review.

Other studies have shown that loneliness is not only something that is more prevalent among the elderly, but actually a natural companion to old age (Desai et al., 2015). These researchers found that loneliness and depression are not only slightly correlated, but completely linked, with one affecting the other, and vice versa.

1.1. Causes for loneliness in elderly

It has already been identified that loneliness and depression go hand in hand, so the next step in this review would be to identify the main causes for loneliness in elderly. Many different studies identified a variety of answers to this question. Singh & Misra (2009) identified that some of the main causes of loneliness are living alone, lack of close family ties, and reduced communications with their place or community of origin, which, they explained, can lead to lack of the ability to participate in community events.

Another approach to viewing how loneliness is caused is less straightforward. This approach focuses on how, as a person ages, they become more reliant on others, and as this happens, they continue to expect the same amount of love, care, and respect as beforehand. When this does not happen, the person can be left feeling discouraged, which can lead to them cutting off ties with others (Shafiq et al., 2020).

These two outlooks on how loneliness can be formed in the elderly do not necessarily need to compete. Either theory can equally be responsible for causing loneliness in geriatric people. However, there is also one additional theory as to what can be a primary cause of loneliness that, due to the relatively new nature of it, has little research conducted on it. This theory is the idea that social distancing is another primary cause for elderly loneliness.

1.2. Pandemic as a contributor for loneliness

When the pandemic hit all around the world, social infrastructures immediately began to change, but the pandemic may be harsher for the elderly populations. Geriatric people around the world were already considerably isolated due to their increased care needs, causing them to be put in elderly homes or other types of assisted living. In addition, elderly populations are more at risk of developing and dying from Covid-19 (Yang et al., 2020), so they have been forced to follow the social isolation guidelines more rigorously.

Several studies have found that adhering to social distancing guidelines, takes a toll on your mental health, especially on perceived loneliness and even depression (Gonçalves et al., 2020). While the Gonçalves study was conducted on adults of all ages, rather than only on elderly people, there are studies that analyze the effects of social distancing guidelines on adults themselves. Robb et al. (2020) did focus on elderly people in the UK and discovered that out of the 7,127 men and women that participated in their study, 12.8% of them reported feeling worse on the depression components of their study as opposed to before the pandemic began. Although a 12.8% increase in elderly depression may not seem like very much, it is still vastly important to the psychological care for elderly populations and warrants more research.

In conclusion, it has been studied and shown that loneliness in elderly people has always been an issue worthy of attention, and with the pandemic having a clear association with the increase in loneliness, now is as important as ever to study this part of elderly's mental health. However, this is a topic for separate research because the focus of this study will be separated from this, as it will analyze the effect of the pandemic on not only a senior's perceived loneliness, but their depressive symptoms as well, and how these two affect each other. This defines the gap in my research, as little to no studies analyze the effect of all three of these factors, instead opting to only analyze the isolated effect of the pandemic on loneliness, or only the isolated effect on depression.

Methods

This was a sampling survey study using mixed methods to analyze the data, carried out in a large South Florida assisted living facilities or (ALFs), after receiving direct approval to conduct said study from this facility. This survey used convenience sampling to decide the participants to take part in the study. Using this technique, the target population was around 70 possible participants at *The Residences of Miami*. Out of this target population, convenience sampling was used to wean out 40 questionnaires to make up this study's demographic. However, two of these forty surveys had to be omitted due to illegible/incomplete responses, reducing the number to 38.

Structure of the Survey

The actual survey had questions that were influenced by both the UCLA Loneliness Scale (Russel, 1996), and the Geriatric Depression Scale (GDS) (Greenberg, 2018). The survey was developed solely on the context of Covid-19 related social distancing and consists of 9 items. Of the 9 items, 4 questions were used to determine perceived loneliness (question numbers 1, 5, 6, and 8), and 4 others were used to determine perceived depressive symptoms (question numbers 2, 3, 4, and 9). The remaining question (question number 7) was used to analyze the correlation between disliking the social distancing rules, and a participant's perceived loneliness or depression. These are all true for the Spanish variant of the survey as well.

In this survey, most of the responses were yes or no, while the last two had vastly different responses, with the same goal in mind. Question 8 identified if a participant preferred group activities or independent activities at the start of the pandemic. The final question considered how often an individual was in good spirits before the pandemic, compared to now. Since these questions were adapted primarily from scientific and scholarly scales, the results can be considered both reliable and valid.

The surveys (both in Spanish and in English) were printed separate from the facility and mailed directly to them. To properly conduct the survey without risk of contamination due to Covid-19, instructions were given to let the papers sit in quarantine, or away from any elderly, or anyone who may come in contact with the elderly, for a full 24 hours, just to make sure that all the necessary precautions towards the pandemic had been taken by the time the survey was ready to be given out.

The consent form, which was administered before the survey, was designed to allow the participants to review the type of study they would be participating in, as well as how the information they provided would be treated. It was explained that every participant would be coded with a number to keep their identity confidential. The form also explained that no reward would be given upon completion and provided important context about how the timeframe questions were structured. Because Covid-19 is a recent outbreak, it was necessary to define what was meant when a question asked, "In comparison to before the pandemic...?" To define this, in both the consent form and the beginning of the questionnaire it was explained that the "beginning" of the pandemic was as soon as the social distancing rules were set in place where they lived (wearing of masks, staying at least 6 feet apart). This form was handed out with the survey and instructed to be given before it.

ALF Selection

Due to the demographic of the ALF, it was necessary for both the consent form and the survey questionnaire to be translated into Spanish, to maximize the sample size. The ALF was chosen due to its large population and vicinity, allowing for easier transmission of the consent forms and questionnaires. The large population of the ALF was also absolutely necessary to draw accurate correlations, as smaller demographics would have made it near possible to make even basic assumptions.

During the process of selecting an ALF, several requirements were kept in mind. One of the most important factors that determined if an ALF was suitable for this study was the number of participants that could be drawn. Because of this factor, several ALFs had to be sorted out and could not be selected. Next, the ALF had to be willing to conduct the survey remotely (which will be discussed later into this section), which was quite difficult due to the close regulation of possible contamination of Covid-19 within the facility. Due to this difficulty, it was necessary to approach the ALFs directly by contacting their activities director on campus. Once approached, the sample size and time of completion of the survey was agreed, and the consent forms and questionnaires were given to the director.

Survey Justification

It was decided that a survey would be the best choice for data collection for several reasons. The most important reason was that the pandemic had occurred so recently. While it is true that at the time of this study it is almost a year since social distancing guidelines were set in place, it is still a short enough time that there are few studies that truly cover the same variables that this study aims to analyze. A survey allowed the ability to properly get a hold of these variables, as it allowed for the quick collection of data that is relevant to the time it was conducted. It also allowed for the connection of the analyzed variable (loneliness, depression, covid-19) to be correlated with other topics such as overall satisfaction towards the pandemic.

Data Collection

The survey questionnaires were all converted to a Google Form, which was utilized to automatically generate percentages and results. For each physical questionnaire, a form was filled out that copied it, basically converting all of the physical questionnaires to a digital format. Once all of the 38 surveys were transferred to Google Forms, the data was shown and a spreadsheet was procedurally generated using Google Sheets creation button, which is an option given after reviewing the results of the Google Forms. Using this sheet, correlations between certain questions (such as the correlation between a question pertaining to loneliness, and a question dealing with depression), were analyzed using the filter button, which can be used to only view certain responses in regard to each other.

Results

The survey was conducted with a target population of around 70 participants, and convenience sampling was used to obtain 40 participants that took part in this survey. Of these 40 participants, 2 of the questionnaires were not completed and were omitted from the study, lowering the results to $n=38$. Out of these 38 elderly participants, the mean age was 87.32 (SD-6.7).

To correctly calculate the data, the word terms were required to be coded with numbers. For all of the “yes” and “no” responses found, “yes” was given a value of 2 and “no” was given a value of 1. This shows that the closer the mean is to 2.0, then there were more “yes” than “no” responses.

Due to the one sample nature of the entire survey, a one sample t-test was used for calculations and this required a hypothesized mean. These hypotheses were synthesized by calculating the expected outcome of each question in context. For question 1 (Since the beginning of COVID-19, do you find yourself staying in your room more often?), it can be assumed that this would be a yes from most people, due to the overall nature of the pandemic causing people to isolate themselves according to certain guidelines, so the hypothesized mean was 1.7, or 7 of 10 people will say yes. The actual mean came out to be 1.84, a little higher than hypothesized (t-value: 2.37) (p-value: 0.023). For p-values, it is standard to regard anything below 0.05 as at least slightly significant, and seeing as this value is, this supports the hypothesis as statistically significant. For question 4 (Since the beginning of COVID-19, do you find yourself getting bored more often?) the hypothesized mean was calculated to be around 1.8, with the actual mean being 1.92 (t-value: 2.73) (p-value: 0.009) or extremely significant. Question 6 (Since the beginning of COVID-19, do you feel that you have less people to talk to?) had a hypothesized mean of 1.6 and an actual mean of 1.82 (t-value: 3.39) (p-value 0.001). This p-value suggests that the statistical relationship between the hypothesized mean and the discovered mean is extremely statistically significant, meaning this was very unlikely to happen in regard to the null hypothesis. Questions 2, 3, and 5 will be analyzed further on.

Questions 8 and 9 did not utilize “yes” and “no” responses. Instead question 8 had “group activities” and “independent activities” as responses. “Group activities” was given a value of 2 and “independent activities” was given a value of 1. The reason for this was simply for researcher preference, and the results would be the same if the values were coded differently. Because the question related to before COVID-19 began, it was difficult to determine which response would occur more often, so the hypothesized mean was 1.5, or half of one response, and half of the other. The actual mean was 1.68 (t-value: 2.41) (p-value: 0.021), and the p-value suggests that this relationship is somewhat significant as it is less than .05. This provides the insight that more people preferred to work with others in groups pre-pandemic than those that preferred to work alone. This could possibly explain some of the results that show the participants as feeling more lonely since the beginning of the pandemic. For question 9, there were three responses (less often than now, the same as now, and more often than now), and they were given values of -1, 0, and 1, respectively. The hypothesized mean for this question was decided at 0.7, and the actual mean was 0.87 (t-value: 3.03) (p-value 0.004), with the p-value being close to extremely significant between the hypothesized and found mean. This mean shows a strong curve toward the participants feeling like they were in a good mood more often before the pandemic began than they currently are. This question has a positive correlation with the other questions related to loneliness and could point to a possible correlation between the causes for this lack of overall good mood and loneliness caused by social distancing.

There were two questions that generated an absolute finding (the data set was entirely the same). These two questions were number 2 (Do you find yourself making more jokes since the pandemic has begun?), and question number 5 (Since the beginning of COVID-19, do you find yourself going out to socialize with others inside your community more often?). Of these two questions the answers were entirely the same. Question 2 (n=38) generated 38 “no” responses, while question 5 (n=38) generated 38 “no” responses as well. This indicates these two findings are greatly significant, as every participant answered the same way.

The next step in analyzing this data was to cross compare the results of the questions coded for loneliness (1, 5, 6, 8) and the 3 coded for depression (2, 4, 9). Number 3 was excluded due to a translation error. This survey found that of the 38 participants that answered the survey, 84.2% (n=32) of them reported staying in their room more often since the beginning of the pandemic (Question 1). This is positively correlated with question number 4, with 92.1% (n=35) of the participants stating that they find themselves getting bored more often. This correlation can be easily explained in the fact that it makes sense as one stays alone in a room often, they would eventually begin to feel more and more bored, or like they have nothing to do.

Another correlation that can be observed is the correlation between the number of jokes told since COVID-19 began, and how often the participants reported going out to socialize with others. It was observed that 100% (n=38) of the participants that did not tell more jokes since the beginning of the pandemic, also did not report going out to socialize more since the beginning of the pandemic (100%, n=38), as stated earlier. Both of these findings are

extremely statistically significant, indicating both a possible increase in loneliness and depression since the beginning of the pandemic.

Fewer participants reported having less people to talk to (81.6%, n=31) since COVID-19 began, than those that reported not going out to socialize with others as much since the pandemic began (100%, n=38). There are various reasons this may have occurred, with the most possible answer being the importance of the internet during the pandemic. Many people utilized external applications to keep in touch with family and friends, and perhaps this is the reason for these mixed results.

Of the 38 participants, 76.3% (n=29) of them stated that, before the pandemic began, they preferred group activities over independent activities. This could possibly mean that the social distancing rules set in place had a bigger impact on those individuals. This can be seen in the population, as the percentage of participants that selected group activities, seems to closely correlate with the number of individuals that chose options that code closely with an increase in both depression and loneliness.

As for the participants' mood changes, 86.8% (n=33) of them reported feeling in good moods more often before the pandemic began. An additional 13.2% (n=5) of the participants felt in a good mood the same amount before the pandemic as they do now. None of the participants reported feeling in a good mood less often before the pandemic began as opposed to now. This shows that most of the participants have had significant drops in their overall mood since the pandemic has begun.

One question was asked that was completely unrelated to neither loneliness nor depression (Question 7). This question relates to the participants satisfaction with the government protocols set in place in attempts to regulate COVID-19. The hypothesis set up for this question was that for the people unsatisfied with the protocols, their loneliness and depression levels would be higher, and a positive correlation would occur. This hypothesis was not supported, as a negative correlation between the satisfaction with the government protocols and self-reported loneliness and depression was observed. A large percentage of participants agreed that the guidelines set in place were to their satisfaction (92.1%, n=35), with only 7.9% (n=3) stating they were not. This seems to suggest that a dislike or dissatisfaction with the government guidelines set in place does not seem to have a correlation with self-perceived loneliness or depression caused by social distancing.

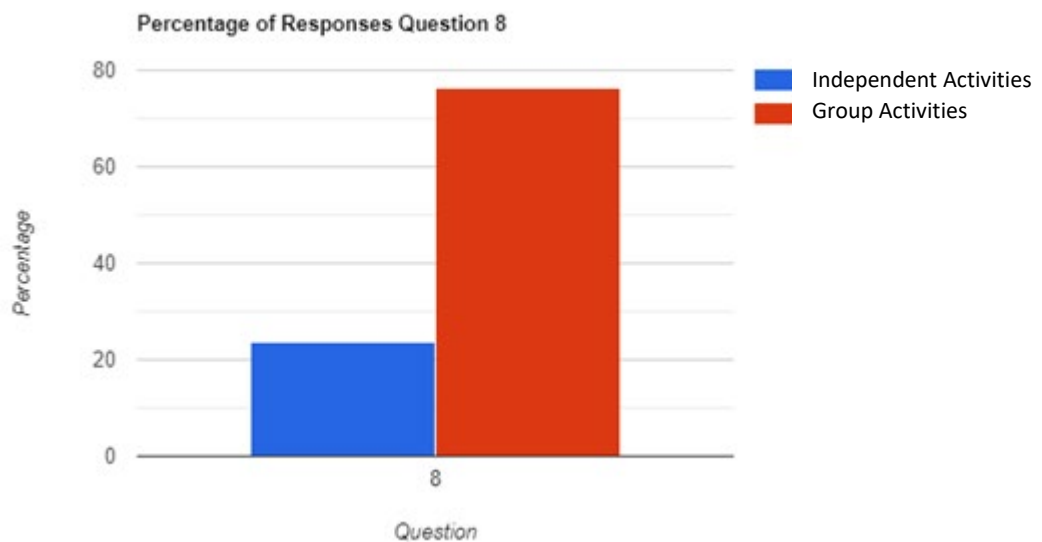


Figure 1. Pre-pandemic preferences for working independently or with others.

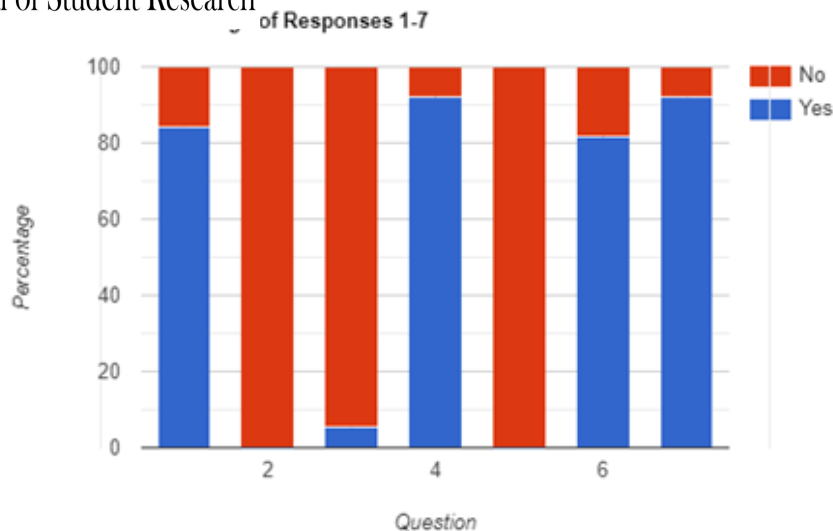


Figure 2. Post-pandemic loneliness indicators.

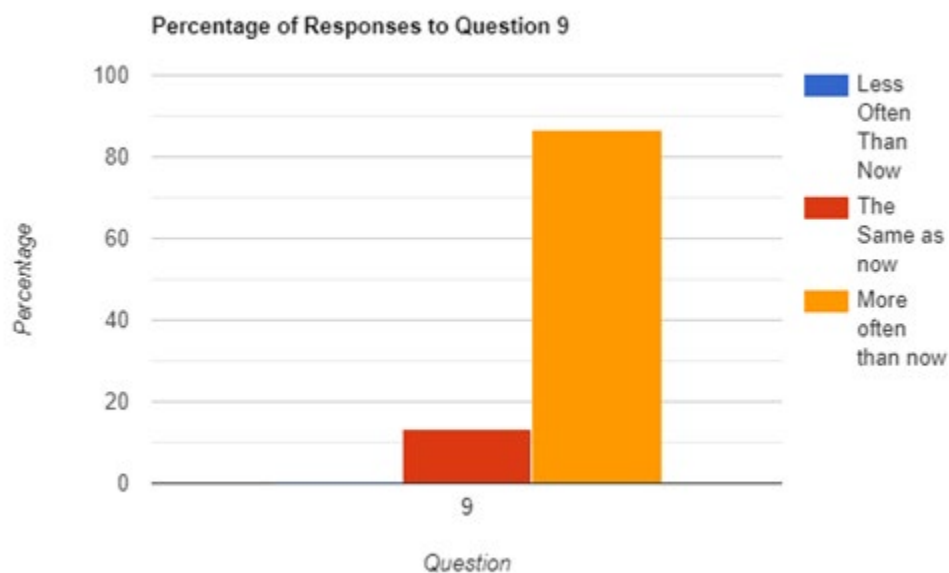


Figure 3. Frequency of good moods pre-pandemic.

Relationship of loneliness and depression

The earlier results indicate a correlation between the increase of self-perceived loneliness and depressive levels of the participants and the duration of the pandemic. Furthermore, these loneliness levels align with self-perceived depressive symptoms as hypothesized. This is also an idea that has been extensively researched, with one meta-analysis reviewing a longitudinal study conducted in Finland that found that loneliness was a predictor of long-term trajectories of depressive symptoms in the 75-year-old participants (Crewdson, 2016).

The hypothesis set up for this relationship was that a positive correlation would occur, with the symptoms of loneliness rising more after the pandemic began, and depressive symptoms doing the same. This hypothesis has been supported by the results gathered, showing that both loneliness and depression has risen in a majority of the participants since the beginning of the pandemic. The means for questions 1, 5, 6, 8, which were coded for loneliness, leaned toward loneliness considerably more after the pandemic and the same occurred for questions 2, 4, 9 (which were coded for depression).

Discussions

These results all appear to have a significant implication on the question at hand. All of the data seems to suggest that there is in fact a significant impact of social distancing on the relative depressive and loneliness symptoms in the elderly. Out of the 38 participants that took part in this survey, at least 70% or more of them reported having more loneliness and depressive symptoms than they had previous to the social distancing guidelines in at least one of the questions.

Conclusions and Future Implications

Overall, the results generated from this study do seem to point to the fact that social distancing guidelines play a significant role in the worsening of self-perceived loneliness and depression in elderly populations. There also seems to be an observable positive correlation between the symptoms of loneliness and depression.

There were several important limitations that may have impacted the results of this research. Among these limitations was the difficulty placed on interacting with the elderly in the first place. Because levels of COVID-19 have been transmitted to the elderly in higher and more dangerous rates than other age groups, the organizations were very careful and many of the nursing homes actually ended up refusing the survey out of concern of infection. Another limitation came from any translation errors that may have occurred. While the entire survey was translated using an application and then tweaked using the help of a native speaker, an error still occurred in question 3, invalidating its use from the results. The small sample size ($n=38$) also represented difficulty in generalizing the results of the survey to elderly people as a whole rather than a group taken from a single nursing home.

For the future research, many changes can be made to not only improve the research design, but to also expand upon certain connections that were hinted at throughout this study. One such change can be to include a larger sample size, taken from more than just one nursing home, to better generalize the data for it to be more accurate for the overall research question.

This study suggests several possible future implications. For one, there are several theoretical ways that one can attempt to subtract from the worsening effect of depression and loneliness on the elderly resulting from the pandemic. One of these possible interventions that relates to this study is to set up properly distanced events for the elderly to leave their room and interact in the world. However, if this poses too much of a threat to their health or risk of infection, a professional healthcare advisor could discuss loneliness or depression with his/her patients to discover the patients suffering from them and offer the proper care.

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