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Impact of COVID-19 on Older Adults in Rural Alabama

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Impact of COVID-19 on Older Adults in Rural Alabama

by

Kristina Hope Warf

An Honors Capstone

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Abstract

During the COVID-19 pandemic, social distancing requirements were implemented. These regulations were for the safety of the public, however they surely have had negative effects on individual's socialization. With more older adults living at home than ever before, during social distancing guidelines they may not be able to see their friends and family or even get their own groceries. Many of these older adults are living in rural areas which tend to offer even fewer resources for assistance to older adults than urban areas. Due to these and other disparities, older adults in rural areas are more likely to experience social isolation and loneliness. Studies have shown a direct link between a lack of socialization and physical and mental health. The goal of this study was to contribute data and conclusions about the correlation between social isolation, loneliness, and physical and psychological health in older adults in rural areas during the COVID-19 pandemic. This was accomplished by the analysis of survey responses from older adults across rural Alabama through senior centers. The study found statistically significant differences in participants' cognitive impairment, physical health, and loneliness and a clinically significant difference in the participants' socialization. There was found to be a correlation between the changes in participants' cognitive impairment and loneliness scores, physical health and loneliness scores, and physical health and socialization scores. This study affirms the link between people's socialization and their mental and physical health and validates the need for programs to assist older adults in times of isolation.

Introduction

Today there are varied options for the living arrangements of older adults from nursing homes, at home care, assisted living, and retirement communities. The last 20 years have seen a steady decline of nursing home occupancy and an increase in occupancy of non-nursing residential programs (Kasper et. al., 2019). It is clear that many older adults would prefer to age in place, stay in their homes, or live in a non-nursing residential program. Many individuals even expect their children or family members to aid them in staying at home (Kasper et. al., 2019). During the months following the initial outbreak of COVID-19, many things changed in order to lessen the spread of this disease. Mask mandates were issued, large gatherings were discouraged, added practices of social distancing were added in businesses and schools, and in-patient facilities limited or even banned visitors. Gathering places such as churches and choirs, senior and community centers, and social groups closed or suspended meetings. All of these practices and more were enacted for the protection of all people, but they especially protected those at higher risk, including the elderly.

As people get older, social experience changes, as older adults may no longer go to work and their family and kids may no longer live with them. In general, they are more socially isolated than previously in their life. The social isolation practices required by this pandemic exacerbates the loneliness which older adults may already be feeling (Henning-Smith, 2020). The way we define social interaction has changed recently for many people. However, much of the social connection between younger generations during this time has been made online. Technology and social media have kept many people in touch during a time when in person interaction is limited. Older adults, especially those in rural areas, may not have access to these types of communication (Henning-Smith, 2020).

Adults in rural areas are significantly less likely to have access to high speed internet (Henning-Smith, 2020). Despite rural adults typically having a stronger social network, they are more prone to loneliness when compared to their urban peers (Henning-Smith, 2020). Rural adults are also more likely to live alone; these combined factors put them at particular risk of loneliness and isolation (Henning-Smith, 2020).

Humans are social animals, and require social interaction to function normally. Social interaction contributes to our cognitive abilities, mental health, and physical health. Both in human and mouse studies, it has been shown that short term or prolonged interruption of the normal social interactions have had significant effects on brain chemistry and neuroendocrine levels of specimens (Wang, Nabi, Zhang, Wu, & Li, 2020). Long term isolation has also been shown to predispose a person to neuropsychiatric diseases (Wang, Nabi, Zhang, Wu, & Li, 2020).

Our research team examined what impact the social isolation caused by COVID-19 has had on older adults in rural areas of Alabama. This was accomplished by analyzing their quality of life, physical health, and other attributes as it was self-reported through a survey. This research is intended to contribute to the understanding of social situations of older adults and provide direction for further research and interventions for rural older adults.

Methods

Recruitment & Distribution

The target demographic of this study was older adults, those over 60 years old, in rural Alabama. Senior centers asked to participate were chosen from the listed senior centers on county websites. These counties were picked from the list of counties defined as rural by The Office of Primary Care and Rural Health, Alabama Department of Public Health and The Alabama Rural Health Association (Alabama's Rural and Urban Counties, 2007; see Figure 1). Senior centers informed us that they were not open as yet for activities, but did provide meals for seniors, who were either picking up meals or having them delivered. Directors of the centers were asked about the approximate number of seniors that were provided meals so the requisite number of packets could be sent to the centers. Institutional Review Board approval was obtained, and the centers were sent their requested number of survey packets. Distribution of the survey packets were then delivered by center employees as meals were distributed.

The survey packets included a consent form, the survey itself, and a pre-addressed stamped envelope for participants to return their completed survey. A list of numbers for mental health resources in the senior centers' areas was included for participants who may feel disturbed or otherwise uncomfortable after answering the survey. The pre-addressed envelope was addressed to the research team. Three weeks later, the participating senior centers received and distributed postcard reminders to their patrons. The postcard designs are shown below. After the surveys had been distributed for 9 weeks, data collection ended.

Survey Content

The survey used in this study is a heavily revised version of the survey written by Dr. Todd Manini and his associates for their research in the Institute of Aging at the University of Florida's college of medicine (Brown et al., 2020). Their survey was used to research medication changes in older adults. Their survey was conducted using RedCap, an online survey service. Our research team made many changes to their survey in order to make it more fully fit the research question of the project. Many questions were reworded to include both "before and after" questions in order to record quantifiable change between the respondent before the COVID-19 pandemic and after or during the COVID-19 pandemic. Many of the sections were shortened or cut for relevance to the study, in order to shorten the survey to a manageable document for mailing purposes, and to decrease participant burden. The researchers chose to change the survey from an online format to a paper format for the ease of use of the study's target audience. Older adults tend to be less likely to use technology and even less so in rural areas where this research may not always be available to them (Henning-Smith, 2020).

The survey itself consists of 13 sections and 9 pages. Additionally the consent form and a resource sheet of local mental health centers and hotlines were stapled to the front of the survey. The consent form was meant to be informational and informative for the participant, but for security purposes was kept by the participant. Therefore, there was no personally identifiable information sent back to the researchers. The first section of the survey is a simple demographics page; this adds more constants and points of reference for the analysis of results. Other sections

include questions about mobility, life-space or living conditions, mood and sleep, socialization, telehealth and technology use, physical activity, and current as well as pre-COVID health history. Many of these questions are written with check boxes which form a Likert scale; check boxes also decrease participant burden by reducing the amount of time to complete the survey.

Data Analysis

Surveys were given an identifier, an ID number. The demographics page was reviewed to ensure participants are eligible based on our inclusion criteria. Eligible participants' survey data was then entered into Qualtrics with only the participant ID to identify the participant. For the purpose of data analysis, participants received "before" and "after" scores based upon their answers to the corresponding questions concerning to this aspect of their health/life before or after the COVID-19 pandemic in the following categories: physical health, cognitive impairment, depression, loneliness, socialization, and telehealth use. These numbers were used to compare the subject's physical and mental wellbeing before and after the start of the COVID-19 pandemic. The significance and correlations between before and after scores were analyzed using SPSS (v. 26; IBM, year 2019). Due to the small number of responses received, non parametric tests were necessary. Descriptive statistics were also gathered from the data, including age, gender, race, marital status, and living arrangements.

Results

The participants of the study had an average age of 75.06 years (sd. 7.909). Of the 19 respondents, 68.4% were female and 26.3% male with 5.3% of undisclosed gender. Only 16.6% of respondents could be classified as obese by their reported height and weight. The majority (68.4%) of respondents do not live alone. Some form of home health was used by one third of respondents. Of those that utilize home health, 5% no longer used this service after the pandemic. The majority of participants were African-American while 31.65% identified as Caucasian/white and 5.3% were undisclosed (see Table 1). The marital status of respondents was varied as shown in Table 2.

Per participant self-report, there appeared to be a statistically significant difference in participants' cognitive impairment scores before and after the pandemic, indicating a decline in cognitive function (See Table 3). There was a statistically significant difference in participants' physical health scores before and after the pandemic, suggesting that participants felt they had a decline in their physical health after the pandemic (See Table 3). There was no statistical significance in the difference in the participants' depression or mood before and after the pandemic (See Table 3). There was a statistically significant difference in participants' loneliness scores before and after the pandemic, indicating they felt they were lonelier after the pandemic (See Table 3). The research team determined there appeared to be a clinically significant difference in participants' socialization scores before and after the pandemic, indicating a loss of socialization during and after the pandemic (See Table 3). There was found to be a correlation between the changes in participants' cognitive impairment and loneliness scores ($r = .650$, p value = 0.016) and a correlation between the changes in participants' physical health and loneliness scores ($r = -.873$, p -value = 0.005). In addition, there was found to be a correlation between the changes in participants' physical health and socialization scores ($r = .829$, p -value = 0.021).

Discussion

There are disadvantages to the distribution methods utilized in this study. The participants for the study were limited to patrons of the participating senior centers. Many of these centers were not functioning at their normal capacity during the time of the study. They were instead only serving or delivering meals to their patrons. The survey was distributed with these meals, but there was no incentive to participate in the survey. This may have led to a particularly low responding percentage and a non-representative sample, as shown by the participants' disproportionate distribution of race. In order to keep the survey user friendly and not overly cumbersome, there were many relevant topics not covered in the survey such as: fluctuations in food, grocery deliveries and home health services availability, and the cancellation of regular doctors' appointments and check-ups.

Though this survey did touch on the topic of technology and telehealth use in older adults, further research into this topic will be necessary in order for professionals to create creative and adaptive responses to instances of social isolation or quarantine. The same can be said for research into the impact which the COVID-19 pandemic has had on services older adults rely on such as home health, food delivery, like meals-on-wheels, and well-checks. A lack of these services may disproportionately affect rural adults as they do not have the advantage of close proximity or public transport as their urban peers do. Services, social and medical, available to urban groups are less likely to be available to rural groups. Solutions to allow equity between these populations are well called for and deserved.

Humans are social animals, and require social interaction to function normally. Social interaction contributes to our cognitive abilities, mental health, and physical health. Both in human and mouse studies, it has been shown that short term or prolonged interruption of the normal social interactions have had significant effects on brain chemistry and neuroendocrine levels of specimens (Wang, Nabi, Zhang, Wu, & Li, 2020). Long term isolation has also been shown to predispose a person to neuropsychiatric diseases (Wang, Nabi, Zhang, Wu, & Li, 2020).

The purpose of this study was to contribute to the knowledge of the mental and physical health of older rural adults during the COVID-19 pandemic, looking for connections between physical and psychological health and social isolation and loneliness. This study provided data on the changes in participants' cognitive impairment, physical health, loneliness, and socialization. Correlations between these aspects of health were also reported. It is scientifically proven that there is a connection between our social interactions and our mental and physical well-being (Wang, Nabi, Zhang, Wu, & Li, 2020). This study affirms that fact and further validates the necessity of ensuring proper socialization of rural older adults during times of isolation such as this pandemic.

Tables & Figures

Table 1

Race

Race	Percentage of Respondents
African- American/Black	57.9
Caucasian/White	31.6
Native American/American Indian	5.3
Undisclosed	5.3

Table 2

Marital Status

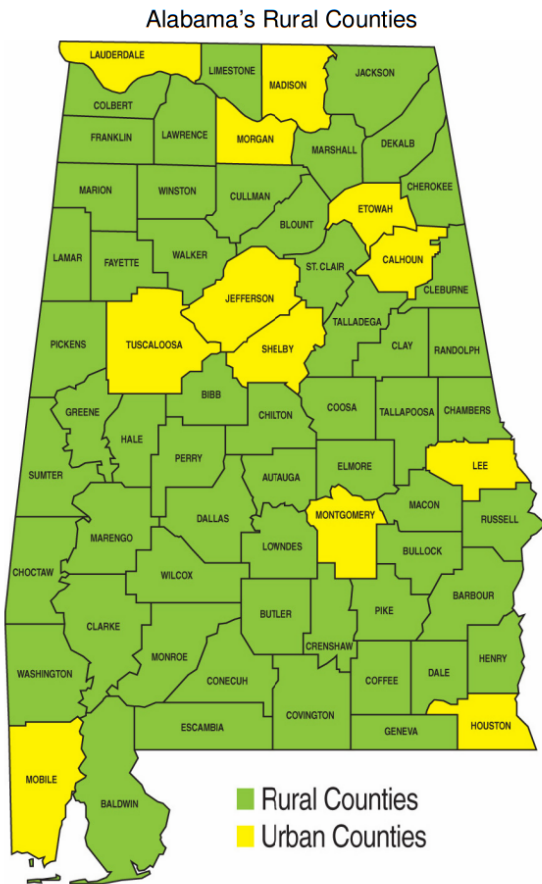
Race	Percentage of Respondents
Widowed	42.1
Not Married	10.5
Married	36.8
Undisclosed	10.5

Table 3

Cognitive Impairment, Physical Health, Depression/Mood, Loneliness, and Socialization

	t	df	p-value	avg before	sd before	avg after	sd after
Cognitive Impairment	2.291	14	0.038	4.2	4.346	5.2	4.739
Physical Health	-2.840	8	0.022	29.078	13.524	18.858	12.852
Depression/Mood*	-0.334	11	0.744	24	11.144	23.5	12.4499
Loneliness	2.275	13	0.04	6.867	2.560	9.2	4.632
Socialization**	-2.262	8	0.054	11.909	7.713	6.182	5.056

Note. *The difference in Depression/Mood was found not to be statistically significant. ** The difference in Socialization, while not found to be statistically significant, was found to be clinically significant.

Figure 1*Alabama's rural Counties*

Note. The Office of Primary Care and Rural Health, Alabama Department of Public Health, the Alabama Rural Health Association. (2007). Alabama's Rural Counties. Alabama Public Health. Retrieved January 20, 2022, from <https://www.alabamapublichealth.gov/ruralhealth/assets/StatewideReport.pdf>.

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