

A Cross-Sectional Psychological Study Investigating the Impact of Social Isolation on Individuals Experiencing Chronic Pain During the COVID-19 Pandemic

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Abstract

Introduction: Due to high COVID-19 morbidity and death rates among the elderly, social connections have been drastically reduced during the previous year. During the COVID-19 epidemic, this research evaluated the social, behavioral, and medical consequences of Social Isolation (SI) in community-dwelling older individuals.

Methods: Findings were stratified to analyze particular variations in two generally understudied groups, African American and Hispanic older adults. The research team surveyed people aged 55 and over (n = 575), assisted by elder living facilities and community-based groups. A dichotomous social isolation dependent variable was impacted by responses to a previously verified social isolation inquiry. Multivariable Logistic Regression (MLR) was used to take sociodemographic characteristics, health issues, unmet caregiving needs, and COVID-19 prevention strategies into consideration.

Results: In order to independently evaluate the predictors of social isolation in older African American and Hispanic populations, regression model results were stratified by race/ethnicity. Overall, having insurance showed an inverse link to social isolation, but having female sex and more education were both favorably connected with it. Both unmet caregiving demands and the presence of any chronic diseases were substantially linked to social isolation.

Conclusions: In older Hispanic persons, language usage, unmet caregiving needs, and social distance were all highly predictive of social isolation, unfulfilled caring needs, having one or more chronic diseases, and following social distance rules were significant predictors in older African Americans. Different findings show the need for treatments that are culturally aware to minimize the effects of social isolation in different at-risk populations and show the many ways in which social isolation affects older people.

Keywords: Social isolation (SI), Multivariable logistic regression (MLR), aging, COVID-19, African American, Hispanic older adults

1. Introduction

Due to the Coronavirus Disease 2019 (COVID-19) pandemic's impacts and the resulting global university closures, there was a noticeable increase in social isolation among university faculty and pupils. The goal of this study was to ascertain how this was believed to affect both students and their academic goals, as well as university staff members and their employees. (Leal Filho et al., 2021). Since it spread swiftly and impacted more than 223 countries and territories, COVID-19, which the World Health Organization (WHO) declared to be an epidemic on March 11, 2020, caused considerable concern. Older people, especially those over 80, are more likely to pass away from this pandemic illness. While people 65 and older make up 80% of deaths in the USA, those over 60 makeup over 95% of fatalities in Europe and a little more than 80% of deaths in China. Therefore, health precautions such as social seclusion and separation are essential to halt the spread of the coronavirus among the elderly (Kasar and Karaman 2021). Concerns regarding physical and mental health have increased as a result of the COVID-19 (SARS-CoV-2) worldwide pandemic and subsequent public health policies that restricted in-person social interaction. Many links with local and national services, as well as

personal relationships, have been severely curtailed or terminated. Many individuals have stopped participating in social and communal activities and have broken long-standing relationships with friends and relatives. Natural social and helpful tendencies in humans have benefited their survival and development. Therefore, we should anticipate that the pandemic will have a significant influence on both individual and communal welfare. However, there was rising worry about an "epidemic of loneliness" long before the pandemic, particularly in Western and industrialized nations (O'Sullivan et al., 2021).

The novel coronavirus infection of 2019 (COVID-19) has had an unprecedented effect on public health and community wellbeing. Since COVID-19 began in March 2020, more than four million people have died as a result of it (Centers for Disease Control and Prevention, 2021). The COVID-19 pandemic's many viral containment methods have caused considerable unemployment and financial damage, instilling feelings of dread of a virus spreading and mourning at the overwhelmingly large loss of human life, in addition to social isolation and loneliness (Wang et al., 2022). Using COVID-19, which the World Health Organization proclaimed to be a worldwide pandemic on March 11, 2020, has swiftly grown into a significant problem that affects all cultures. In addition to raising health issues, the COVID-19 pandemic scenario is linked to several behavioral and lifestyle changes, particularly as a result of the prolonged lockdown. Although social lockdown continues to be the greatest non-pharmacological option to slow the virus's rapid spread, it is probably having a detrimental impact on people's mental health and lifestyle choices. Therefore, a recent study has shown that lockdown may have a substantial detrimental impact on lifestyle decisions made globally, including participating in sports and other forms of Physical Activity (PA) (Bailly et al., 2022). People all across the globe had difficulties as a result of the COVID-19 epidemic, and individuals with pain issues were particularly affected. Psychosocial variables are often connected with chronic pain. Therefore, it may be argued that the COVID-19 pandemic's effects on everyday living, treatment of pain, and mental health had a significant impact on how painful patients perceived their conditions. In Germany, the prevalence of chronic pain problems is believed to be 17%, and it affects both young and elderly individuals, with the proportion of afflicted persons rising with age. The most prevalent ailment in the world and the one that restricts individuals the most severely over time is pain, which has a large negative impact on society and the healthcare system.

Pain problems can co-occur with other long-term physical and mental illnesses. Many people who experience pain undoubtedly belong to the category of people who are at a high risk of getting serious illnesses because of their old age and co-occurring somatic ailments. COVID-19. Therefore, it's intriguing to think about how the COVID-19 pandemic has impacted those who experience pain on a physical and emotional level. In addition to posing substantial risks to people's physical health, COVID-19 also has a detrimental influence on people's social, psychological, and emotional well-being. A person's understanding of their own ability to handle life's problems is referred to as their psychological and mental health. Numerous elements, such as the unknown nature of the sickness, social exclusion, self-isolation, and quarantine, have an impact on the population's psychological and mental health.

It was determined that widespread myalgia, headache, and upper respiratory symptoms were typical indicators of an acute infection. The COVID-19 pandemic has increased pain in most parts of the world, impacting people with both pre-existing chronic pain and those who had previously been infected with the SARS-CoV2 virus and were already experiencing persistent pain symptoms. Our study reveals that it is crucial to pay attention to the effect of prolonged pain in these people given the higher risk of post-intensive care syndrome in patients with any degree of COVID-19. Patients that have certain traits are more vulnerable to pandemic consequences, may make individuals who already have chronic pain more painful. Multidisciplinary care will be required for the majority of patients' therapy, and research into mechanism-based therapies must be advanced.

2. Literature Review

Neville et al., 2022 investigated the COVID-19 pandemic's effects on parents and kids who suffer from chronic pain. A pediatric chronic pain program at a tertiary level selected 20 young people with chronic pain (ages 13 to 20) and one of their parents for semi-structured individual interviews. People had the opportunity to engage in interviews during the months of June and August 2020, when they may share their knowledge about the COVID-19 outbreak from their own unique viewpoints. Yamada et al., 2021 conducted a cross-sectional study

to examine the association between pain, increased social isolation, and loneliness. The Los Angeles University of California UCLA-LS3-SF3's brevity, the 3-item lonely scale, was applied to assess loneliness. And a modified UCLA-LS3-SF3 item was utilized to gauge how much social isolation people felt during the epidemic. 25,482 participants in total, ages 15 to 79, participated in the online survey. Polenick et al., 2021 said that For older persons, the COVID-19 epidemic has resulted in significant issues, such as social isolation that interferes with everyday activities and inhibits social interaction. Girdhar. Since the middle of March 2020, the majority of Americans have been urged to confine themselves to their houses to stop the virus from spreading. Long-term social isolation may exacerbate loneliness. Van Orden described it as the perceived gap between a person's intended and real social ties. In older age, loneliness is associated with disease and death. As a result, it's critical to comprehend what contributes to loneliness in older folks amid the epidemic. Lacasse 2021 investigated and looked at how the COVID-19 pandemic affected Cerebral palsy medications and physical/psychological therapies. In southern Brazil, the initial effects of the COVID-19 pandemic on Low Back Pain (LBP) outcomes were evaluated (Caputo, 2023). The PAMPA Cohort's data were examined. Adults were sought out in Rio Grande do Sul through online recruiting methods in the months of June and July 2020. Participants were given a self-reported online questionnaire on low back pain before (retrospectively) and during the COVID-19 outbreak. The study examines the association between social isolation and mental health in later life, as well as how it varies among countries. Kim 2021 uses data from worldwide An original global online survey with 13,660 participants from 62 countries, Behaviors and Perceptions of the COVID-19 Pandemic on a subpopulation of senior citizens. Regulations around COVID-19 quarantine have made it more difficult to provide medical care, especially when it comes to the medical and interventional treatment of chronic pain. The effects of COVID-19 social isolation and quarantine precautions on the signs of chronic pain and anxiety, medication use, and engagement in healthcare, as well as how the clinic treats these patients using its virtual evaluation systems, have been examined (Mithani et al., 2022). This cross-sectional research assessed the intensity and involvement of pain in patients with chronic pain and found the characteristics of individuals who were most negatively impacted by the demands of social distance from the beginning. Four to eight weeks after Massachusetts' social distance statute went into effect, 140 individuals with fibromyalgia, chronic spine, and postsurgical pain completed demographic, pain, and validated psychosocial questionnaires. Despite the fact that both pain intensity and interference were quite diverse among individuals who were experiencing social separation, patients self-reported an overall substantial increase in pain severity and pain interference compared to before social distance. Increased pain intensity and interference during social distance were linked to a variety of demographic, socioeconomic, and psychological factors (Hruschak 2021).

3. Methodology

In this section, we discuss about the social isolation that COVID-19 pandemic patients with chronic pain experienced.

3.1 Sample and Data Collection

In collaboration with community-based groups and senior care facilities, a digital survey was issued to older adults in the Houston metroplex who are at least 55 years old between November 2020 and January 2021. The survey assessed the COVID-19 prevention behaviors, health issues, and daily experiences of the target demographic, including social isolation. Along with previously approved questions from the "Health-Related Social Needs (HRSN) screening tool for Accountable Health Communities (AHC)", the survey also asks about pandemic preparedness and COVID-19 approaches.

3.2 Measures

During the administration of the online survey, which took around 10 minutes to complete, all items were self-reported. Comments on the Accountable Health Communities (AHC) Health Related social needs (HRSN) approved question, "How frequently do you feel alone or distant from others?" are accustomed to establishing a reliant element that is binary. The justification for the categorizing comes from past research on social isolation, which labels people who answered "Often" and "Always" as socially isolated. Based on replies to the Accountable Health Communities (AHC) Health Related social needs (HRSN) screening question's verified results, the

primarySupport from family and community to satisfy caregiving requirements was an independent variable that had a binary indication.Unmet caregiving demands will be the term used to refer to this variable in the future. Sociodemographic characteristics (such as age, sex, color, education level, income, and insurance status.) were also confounders. physical ailments (such as a positive COVID test result for oneself or a close member or a number of chronic diseases.), COVID-19 preventive measures (such as social withdrawal) and social needs (such as inability to pay the debt, financial instability, inability to purchase prescription drugs, lack of transportation, disability, Supplemental Security financial, and Social Security). The complete and stratified regression models utilized only variables that had theoretical foundations.

3.3. Data analyses and findings

The demographic features of the patient population were described using descriptive analysis using frequencies and proportions. Using chi-square testing,Social isolation was evaluated as an independent bivariate correlation between responder attributes.After that taking into account socio-demographic factors, health issues, COVID-19 preventative behaviors, and social needs, a number of logistic regressions were to assess the quality of the links.To assess the factors that contribute to social isolation in older Hispanic and African American individuals separately, regression model results were stratified by race/ethnicity. In October 2020, this study received approval from an unbiased institutional review board (IRB ID: STUDY00002584). We have enough powershould use a 2-tailed = 0.05to identify a minimal predicted variation of 10% in the percentage of senior citizens who are socially isolated. Using Stata 16.1, all data administration and analysis were done.

4. Results

4.1 Sample Characteristics

The sample had 575 survey answers in total. 24% of survey participants were men, 39% were Hispanic, and 51% were Black or African American. 34 percent of the sample consisted of older persons aged 55 to 64, 42 percent of older adults aged 65 to 74, and 25 percent of older adults aged 75 and above. In all, 24% of respondents lacked insurance, 43% had an annual income of less than \$25,000, and almost 20% had one of \$75,000 or more.In terms of schooling, A GED or high school diploma was held by 26% of participants. 27% had some college experience, and 27% had a bachelor's or graduate degree from a college or university. Only 20% of respondents had no high school graduation. Sixty-one percent of the sample's participants were homeowners, and 72 percent said that English was their first language. Heart disease made up 19% of chronic ailments and diseases, chronic lung disease made up 7%, diabetes made up 20%, psychological/psychiatric problems made up 27%, lupus, rheumatoid arthritis, or another autoimmune disease made up 24%, and stroke made up 5,19% of the sample said they had cut down on their exercise because of health problems. And 12% had health issues that need for specialized equipment. 28% of respondents who were asked about their caring requirements said they needed help. More than 50% of those surveyed either tested positive for COVID-19 themselves or had a member of their immediate family who had in the preceding month. Only 47% of respondents admitted to using social distancing. 10% of people thought they were socially isolated.

4.2 Bivariate Analysis

Some of the six chronic illnesses assessed were present in 56% of people who reported social isolation, while 80% of those who reported social isolation did (p 0.001), compared to those who did not. Table 1 survey answers bivariate relationships with respondents' perceptions of social isolation. Significant correlations were found between social isolation and developing diabetes (33% of respondents who experienced social isolation compared to 18% of non-respondents, p=0.01.). A significant correlation was found between social isolation and having restricted activity because of health issues (27% of those reporting social isolation vs. 15% of those not reporting it, p = 0.02). Individuals who were socially isolated required caregiving in 55% of cases compared to those who were not (p 0.001). The statistical significance threshold was not met by any of the other independent bivariate associations. Bivariate studies indicated no variations by minority status in feelings of social isolation.

Table 1:Bivariate relationships between respondents to a survey and social connectivity

Variables	Social isolation	Socially Isolated (N=512)	Total (n=572)	
	Not Socially Isolated (N=514)	N (%)		P
	N (%)	49	N (%)	
Chronic Conditions	291	51	339	<0.002
Gender	378	28	428	0.157
Social distancing	279	19	306	0.188
Age	175	27	194	0.079
Positive Covid Test (Self (or) Close family)	257	13	283	0.351
Insurance	126		138	0.231

4.3 Multivariate Analysis

The results of the logistic regression are shown in Table 2. Women were somewhat more inclined to experience social isolation (OR = 2.44; $p = 1.02$). During the pandemic, older adults without a high school diploma or GED were 2.6 times more likely than college graduates to feel socially isolated ($p = 0.03$). Owners of private insurance had a lower likelihood of feeling socially isolated than non-owners (OR = 0.23, $p = 0.02$). When compared to those whose requirements were met, those who said they didn't need any assistance reported feeling socially isolated 6.3 times more often ($p < 0.001$). Additionally, having one or more persistent diseases increased a person's likelihood of feeling socially isolated by 2.9 times compared to not having them ($p = 0.01$).

Table 2 : Multivariable regression model analysis

Variables	95%CI	P	Odds ratio
Chronic Disease	-7.18	0.016	2.98
Gender	1.07	0.039	2.47
Social distancing	0.96	0.071	1.85
Age	0.65	0.338	1.58
Positive Covid Test (Self (or) Close family)	1.72	0.248	1.46
Insurance	0.36	-3.68	1.12

4.4 Cohort Sub-analyses

The model's findings are shown by race and ethnicity in Table 3. The study found that African Americans ($n = 288$) who reported having unmet care needs experienced social isolation more often than those who indicated they didn't require any help ($p = 1.02$). When African Americans identified English as their first language, their odds of being socially isolated were significantly lower (OR = 0.15, $p = 0.02$) than when they claimed one or more chronic diseases. Compared to African Americans who reported having one or more chronic conditions, those who said English was their first language had a much decreased probability of feeling lonely than those who did not (OR = 0.12, $p = 0.04$).

The incidence of social isolation was, however, considerably reduced among Hispanic senior persons (n = 220) who reported having Medicare coverage (OR = 0.42, p = 0.02). According to respondents who identified as African Americans (p = 0.001), Older Hispanics who acknowledged unmet caregiving requirements reported feeling social isolation 11.3 times more often than older Hispanics who said they didn't need assistance. It is evident that having Spanish as their first language had a substantial impact, with an OR of 0.67 and a p-value of 0.01.

Table 3 : Health and social isolation among elderly Americans

Variables	P	Hispanic/Latin N=222 Odds Ratio	P	African Americans n=290 Odds Ratio
Chronic Disease	0.18	2.81	0.06	7.65
Gender	0.72	1.38	0.07	3.51
Social distancing	0.67	0.52	0.05	1.42
Age	0.18	3.16	0.97	1.04
Positive Covid Test (Self (or) Close family)	1.812	1.19	0.48	1.46
Insurance	0.31	0.35	0.75	1.49

4.5 Determinants of pain escalation and perceived influence on Treatment

The majority of participants said they used more pain self-management strategies while simultaneously utilizing fewer services for pain management shown in Figure 1 and 2. Patients acknowledged that social disengagement had a substantial role in their pain becoming worse (a majority of 70.5 percent said they agree or strongly concur), as did decreasing activity levels (66.5% agree or strongly concur). Additionally noted as contributing causes to pain becoming worse were elevated stress (67.2% agree or strongly concur) and a worsened mood (53.3% agree or strongly concur) brought on by social isolation.

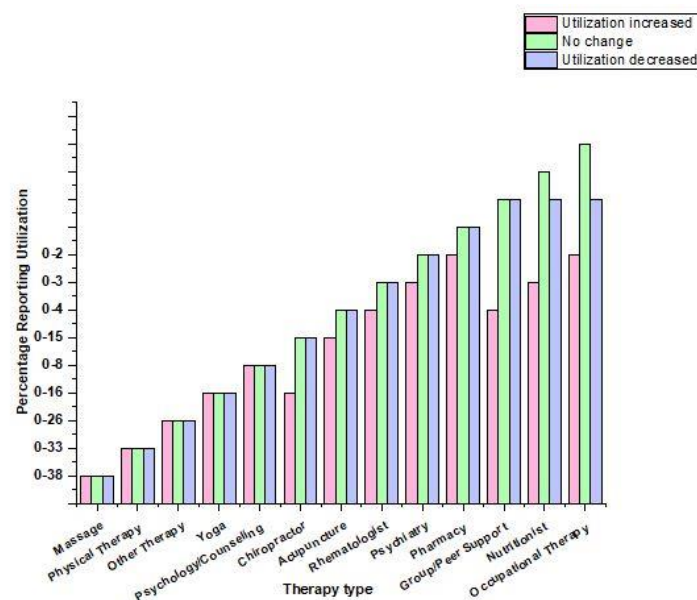


Figure 1. Modifications in the use of or access to physical or behavioral pain treatment

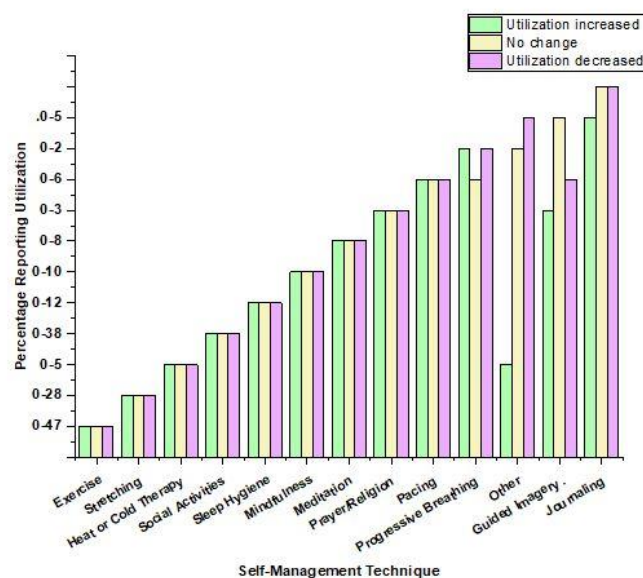


Figure 2. Modifications in the use of or availability to pain-management strategies

Discussion

This study provided a fresh viewpoint on how COVID-19 affected racial and ethnic groups who are often believed to have less access to resources. It examined the distinctive traits of older African Americans and Hispanics as well as the relationships between social isolation and aging in place. In the whole elder population (55 and older), we found no major changes in social isolation by minority or racial status using studies that are either bivariate or multivariate. However, males were more likely than women to express feelings of being socially isolated if they had advanced degrees, had unfulfilled caregiving commitments, or had one or more chronic conditions. Being privately insured provided security, lowering the chance that those who claimed to suffer social isolation would disclose it. This link could be explained by participation in the workforce.

Comparatively, among African American adulthood, the factors of insurance status, academic achievement, and gender were no longer reliable predictors of behavior, but those who reported adhering to social distancing norms had unmet caregiving requirements, had one or more chronic illnesses, or had one or more of these conditions tended to be more socially isolated. Within the Hispanic community, social isolation was substantially correlated with language, unmet caregiving needs, and social distance. These results are noteworthy because they cast doubt on the widely held view that social isolation is harmful to older people and they emphasize the necessity for measures to be sensitive to cultural differences in order to reduce social isolation's negative effects on at-risk groups.

5. Conclusion

It is crucial to deepen your understanding of the effects of social exclusion on various patient types in other geographical areas that are differently impacted by COVID-19 in order to pinpoint individuals for whom it poses the greatest difficulties when planning the future of service provision for patients with chronic pain. In the event that COVID-19 is followed by further waves in which social distance regulations may stay in effect, this information may contribute to a better understanding of how social isolation impacts pain and may guide the development of innovative ways to help this vulnerable population. These results indicate the need for culturally appropriate interventions to lessen the impact of social isolation in these vulnerable groups and demonstrate that older persons are affected by social isolation in a variety of ways.

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