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From Isolation to Connection: A Cross-Sectional Analysis of Older Adults' Social Participation Using the COV19-QoL Scale

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From Isolation to Connection: A Cross-Sectional Analysis of Older Adults' Social Participation Using the COV19-QoL Scale

Abstract

Background: Social isolation during COVID-19 has the capacity to impact older adults' physical health, mental health, and quality of life. Using an occupational therapy perspective of social participation as an occupation, the current study explores (a) the extent to which social participation (habits/routines) has changed following the onset of the COVID-19 pandemic, (b) differences in perceptions of social participation in relation to the COVID-19 pandemic, and (c) differences in scores on the COVID-19 Quality of Life (COV19-QoL) scale by demographics, access to health care, and lifestyle routine.

Method: Community-dwelling adults (N = 230) 65 years of age or older completed an online survey providing demographic data to identify changes in social participation habits, routines, and perceptions in relation to the COVID-19 pandemic and the COV19-QoL scale.

Results: Analyses revealed significant differences in reported routines, perceptions, and COV19-QoL scores across various demographic groups.

Conclusion: This study identified a significant shift in social participation and a need for increased consideration of performance skills, education, and improved quality of social opportunities. Limited representation in the sample and the use of novel instruments indicate a need for further study.

Comments

The authors declare that they have no competing financial, professional, or personal interest that might have influenced the performance or presentation of the work described in this manuscript.

Keywords

older adults, social isolation, loneliness, COVID-19, occupational therapy

Cover Page Footnote

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First recognized in December 2019 and within months considered a global pandemic, COVID-19 has vastly transformed social connection for almost everyone. However, the subsequent quarantine measures, which mitigated and slowed the spread of the COVID-19 virus, disproportionately impacted the older adult population (Centers for Disease Control and Prevention, 2020; Sheehy, 2020). Quarantine, also referred to as medical isolation, is defined as “the separation and restriction of movement of people who have potentially been exposed to a contagious disease to ascertain if they become unwell, so reducing the risk of them infecting others” (Brooks et al., 2020 p. 912). While older adults relied on medical isolation as a primary method of preventing exposure to and infection from COVID-19, the recommended medical isolation during the pandemic presented another set of risks for this population. For many older adults, the medical isolation designed for their safety also led to increased social isolation, leaving countless people susceptible to a host of long-term, negative impacts on their physical and mental health and an overall decrease in their quality of life (QoL).

Wu (2020) suggested that social isolation involves an “objective state of having few social relationships or infrequent social contact with others” (p. 2). Often, social isolation leads to feelings of loneliness, defined as “a subjective feeling of being isolated” (p. 2). The impacts of loneliness and social isolation are closely connected and influence the social and emotional dimensions of occupational engagement (Dickens et al., 2011). Older adults’ heightened risk of social isolation and loneliness predates the COVID-19 pandemic. Nevertheless, the pandemic’s extended quarantine, which further limited people’s community access and engagement in social and physical activities, further exacerbated the potential for occupational deprivation (Baker & Clark, 2020; Berg-Weger & Morely, 2020).

Social Participation and Mental Health

Social isolation presents challenges to mental and physical health and encourages potentially dangerous negative consequences to overall wellness. Baker and Clark (2020) discussed the value of recognizing early changes in behaviors, habits, roles, and routines, the outward indicators of mental health, to help identify potential declines in physical health. Their work highlights the importance of even gradual and subtle changes in self-care, continence, and hygiene routines. The influence of social isolation on declining health is not a linear process. Changes in physical health (limited mobility, less exercise, changes in ADL independence level, and changes in cognitive levels, which dictates things like medication management) can indicate changes in mental health, but the reverse also holds true. Changes in mental health can indicate changes or declines in physical health. When vulnerable populations are socially isolated, there is a decreased likelihood that changes in physical and mental health are monitored. Baker and Clark suggested the complexity of the factors that indicate risks to declining health and occupational performance and participation. Sedentary behaviors, limited access to fresh air, and living in structures with poor or inadequate ventilation are all examples of contextual considerations that influence overall health.

The ongoing consequences of social isolation and the COVID-19 pandemic continue to impact people’s mental health. As previously mentioned, increased social isolation of older adults, in particular, seems to have influenced the trend toward the use of unhealthy coping mechanisms to combat symptoms of anxiety or depression. Adopting unhealthy habits or coping mechanisms can significantly impact participation in self-care and further deteriorate occupational roles. Increased reports of feeling hopelessness and loneliness can signal a gateway to developing unhealthy habits and routines. These same feelings increase suicidal thoughts and can potentially initiate a crisis of meaning. Concerns about finances, a lack of access to food, a loss of community rituals, experiencing the loss of loved ones,

especially when related to the COVID-19 virus, and repeated exposure to the media coverage of an overwhelmed medical system, are all concerns that can be destructive to mental health, thereby contributing to overall occupational imbalance (Neimeyer, 2020).

Social Participation and Physical Health

Evidence indicates that social isolation is correlated with a cadre of negative impacts on physical health, including increased hospitalizations, high blood pressure, heart disease, obesity, immunodeficiency, vitamin D deficiency, and falls (Dickens et al., 2011; Office et al., 2020; Pelicioni & Lord, 2020; Wu, 2020). The confounding contextual circumstances of increased social isolation, and significantly fewer opportunities for many older adults to engage in physical activities outside of their home, also contributed to an increased risk for physical decline. Experts noted very early in the COVID-19 pandemic the trajectory toward physical decline, as characterized by reports that noted, for example, adults have decreased their number of daily steps between 7%–38% since the onset of the pandemic (Aubertin-Leheudre & Rolland, 2020).

The unfortunate combination of increased medical and social isolation, which offered fewer opportunities for people to engage in social and physical activity, often led to declines in physical health. From an occupational therapy perspective, a decline in physical health can further influence the quality and process of performing important and necessary activities of daily living (ADLs). Furthermore, decreased participation in ADLs, lowered pulmonary reserves, and increased disability progression are predictors of decreased life expectancy (Aubertin-Leheudre & Rolland, 2020; Baker & Clark, 2020; Pelicioni & Lord, 2020). The global pandemic continues to result in additional layers of risk for older adults, making them more susceptible to acquiring infection, more vulnerable to additional complications, and heavily influenced by functional decline (Aubertin-Leheudre & Rolland, 2020; Baker & Clark, 2020; Office et al., 2020; Pelicioni & Lord, 2020).

Assessing QoL During COVID-19

A reliable and valid tool to measure the specific impacts of COVID-19 and screen for mental health concerns was developed by Repišti et al. (2020). The COVID-19 QoL Scale (COV19-QoL) assesses mental health changes for older adults with a short, six-question screen. Additional assessments that may be useful in evaluating the impacts of pandemic-associated factors include the Coronavirus Anxiety Scale (CAS) and the Unfinished Bereavement Scale (Repīšti et al., 2020). These scales help screen for symptoms of depression, anxiety, and the level and appropriateness of coping strategies being used to address problems with anxiety and grief during and after the pandemic (Neimeyer, 2020). The use of these assessments may assist in identifying risks for older adults, support creating an occupational profile, and provide the foundation for transitioning into intervention planning and development. Improved protocols that more effectively identify older adults who are vulnerable and more susceptible to negative impacts of social isolation will allow health care providers to maximize the quality of our care and prevent further functional decline in clients amid the evolving COVID-19 pandemic landscape.

Social Participation and QoL

Even for older adults who maintain physical and mental health, social isolation can still affect QoL. Social isolation and physical distancing have limited access to caregivers and routine health care services, which has forced many older adults to self-manage medications and self-assess their overall health (Baker & Clark, 2020). Without adequate access to services, support networks, and caregivers, older adults suffer an inherent risk of having difficulty taking the necessary measures to preserve their overall health. This often leads to fundamentally negative impacts on their QoL.

Social participation promotes older adults' relationships, experiences of meaningful activities, and sense of purpose. Dickens et al. (2011) reported that interventions that support social participation improve a broad range of QoL factors, such as structural/functional social support, decreased loneliness, and increased mental and physical health (Dickens et al., 2011). Hill et al. (2020) and Office et al. (2020) noted the advantages of social participation interventions, which not only included physical benefits but also increased clients' sense of purpose, companionship, communication skills, and improved understanding (Neimeyer, 2020; Office et al., 2020).

The Role of Occupational Therapy

Occupational therapists play distinct roles as health care providers by ensuring that individuals can continue to access and engage in their meaningful occupations (Dirette, 2020). Occupational therapists address social participation through optimizing older adults' access to transportation, technology, navigation of community resources, modifying the environment or daily routines, and even providing caregiver support (Stephenson, 2011). They also implement preventative approaches and chronic illness management, both of which encourage increased social participation and mental health (Stephenson, 2011). Occupational therapists use problem-solving skills to develop strategies, such as environmental adaptation, individual coping strategies, activity modification, and even assistive technology to address optimal health (Dirette, 2020). In the context of COVID-19, occupational therapists can facilitate adaptive and more resilient routines to combat the obstacles presented by the pandemic. They can support the development of positive coping strategies and performance skills needed to maintain meaningful social participation. Overall, with such targeted approaches, occupational therapy can play an instrumental role in the effects of the pandemic on older adults' QoL.

By promoting occupational engagement, occupational therapists can help older adults overcome the obstacles that have resulted from social distancing. Occupational therapists can also address the social needs of older adults through the development and implementation of group interventions, including regularly scheduled social groups, task-focused activity groups, and group exercise, while adhering to safety guidelines established during the pandemic. In fact, Balsler et al. (2020) suggested that interventions during this time should be provided to groups and populations collectively to improve conditions for all individuals.

The pandemic heightened the development of technology that has provided new opportunities for socialization via platforms such as Zoom and Google Meets. Such platforms provide opportunities for pre-pandemic social and exercise groups to continue to meet while adhering to social distancing recommendations. Occupational therapy can address the continuation of social participation by helping clients optimize access to technology, providing assistive technology training, increasing caregiver education, and using environmental and activity modification (Dirette, 2020; Stephenson, 2011). In addition, occupational therapists can assist with identifying and consistently monitoring older adults who are at risk of mental and physical health decline, educate and train the public on how to respond to social isolation and loneliness, and even provide recommendations to support long-term social participation while confined to the home.

The Current Study

Overall, evidence suggests that social isolation has the capacity to impact older adults' physical health, mental health, and QoL. Using an occupational therapy perspective, which sees social participation as an important area of occupation, the current study explores the extent to which social participation has

changed during the COVID-19 pandemic and further examines the impact of those changes in relationship to an older adults' QoL. The following objectives will be addressed:

1. To determine the extent to which social participation (habits/routines) has changed following the onset of the COVID-19 pandemic (difference in number of weekly interactions, number of exercise activities, number of community activities).
2. To determine if there is a difference in perceptions of social participation during the COVID-19 pandemic (perceptions of support, reliance on Instrumental Activities of Daily Living [IADLS], and satisfaction with access to health care).
3. To determine if there is a difference in scores on the COV19-QoL Scale by demographics (age, gender, marital status, employment status, and living arrangement), access to health care, and lifestyle routine (preferred modes of socialization during pandemic and frequency of social isolation).

Method

Study Design

This analytical cross-sectional study recruited a group of older adults to collect survey data on QoL factors, experiences in relation to the onset of COVID-19, and relevant demographics.

Participants

Following Institutional Review Board Approval, a sample of 271 individuals was recruited to complete the online survey using snowball sampling. Of the 271 responses, 230 were complete and included in analyses. Inclusion criteria consisted of community-dwelling adults who were at least 65 years of age or older.

Instruments

Information regarding participant demographics and lifestyle routines was collected. Demographics included: age, gender, marital status, employment status, and living arrangement. Lifestyle routine included employment status, volunteer status, primary means of interaction, number of daily interactions, number of weekly community activities, number of weekly physical activities, and opinion regarding social support. The participants were also asked to report whether they had tested positive for COVID-19, their estimated frequency of social isolation, presence of medical conditions, living distance from family, confidence in technology skills, and satisfaction with health care. Questions regarding lifestyle routine were asked in the context of both before and during the COVID-19 pandemic.

COV19-QoL Scale

The COV19-QoL scale assesses the perceptions of QoL and mental health amid the COVID-19 pandemic (Repišti et al., 2020). The scale consists of six items rated on a 5-point Likert scale based on a self-report of experiences in the past week (see Appendix). Total scores are calculated by averaging the scores on all the items. A higher score indicates an increased impact of the pandemic on QoL. For this study, however, total scores were used and reverse coded, so higher scores indicated improved QoL. Results from Repišti et al. (2020) supported both the internal reliability and construct validity of the COV19-QoL Scale.

Procedures

Recruitment

Participants were recruited from the Midwest region of the United States. A letter was sent via email to potential participants. The letter described the study and provided a link to the online survey.

Recruitment took place between November 2020 and January 2021. Participation was voluntary and anonymous. Consent was indicated by accessing the link and completing the survey.

Data Collection

Questions regarding participant demographics, lifestyle routine, and the COV19-QoL ratings were entered into a REDCap (Research Electronic Data Capture) survey for email dissemination and electronic data recording (Harris et al., 2009; Harris et al., 2019).

Data Analysis

Data analysis was completed using the IBM SPSS Statistics for Windows, Version 27.0. All comparisons conducted were two-tailed with a significance level of 0.5. Because most of the data were not normally distributed as determined by Shapiro-Wilk tests, a series of non-parametric tests were conducted. Nominal data are reported as frequencies and percentages, while interval and ratio data are reported as medians (Mdn) and interquartile ranges (IQR). Interpretation of coefficients was based on parameters established by Schober et al. (2018), and effect sizes were defined by Cohen (1992).

Results

An a priori sample size estimate was conducted using G*Power, Version 3.1 (Faul et al., 2009) to test the difference between two independent means using a two-tailed test, moderate to high effect size of 0.50, alpha of 0.05, and power of 0.80. It was estimated that a minimum sample size of 128 participants was needed to sufficiently power the study. Based on the availability of participants and to increase the likelihood of powering the study, 230 participants were recruited for the study. Descriptive characteristics of the sample can be found in Table 1 and Table 2. Reported differences in lifestyle routines in relation to the onset of COVID-19 can be found in Table 3. Response percentages to the COV19-QoL scale can be found Figure 1.

Table 1
Descriptive Characteristics of Sample (N = 230)

Characteristics	% (n)
Gender	
Man	30.9 (71)
Woman	69.1 (159)
Non-Binary/Gender Nonconforming	0
Transgender	0
Prefer not to Answer	0
Marital Status	
Married	71.7 (165)
Divorced	9.1 (21)
Widowed	14.8 (34)
Separated	0.4 (1)
Never Married	3.5 (8)
Living with Partner	0.4 (1)
Other	0.4 (1)
Family living within a 15-mile radius	
Yes	66.1 (152)
No	33.9 (78)

Reliance on Family and Friends for IADLS		
Yes		14.3 (33)
No		85.7 (197)
Confidence in technology skills		
Yes		94.3 (217)
No		5.7 (13)
Self-Isolation Frequency		
Always		10.9 (25)
Most of the Time		65.2 (150)
Sometimes		14.3 (33)
Rarely		5.2 (12)
Never		4.3 (10)
COVID-19 Positive		
Yes		4.3 (10)
No		95.7 (220)
Medical Conditions		
Cancer		18.3 (42)
COPD		7.4 (17)
Heart Conditions (coronary artery disease, congestive heart failure, etc.)		16.5 (38)
Weakened Immune System due to organ transplant		1.7 (4)
Chronic Kidney Disease		3.5 (8)
Type II Diabetes		13.9 (32)
High Blood Pressure		58.7 (135)
None of the Above		25.7 (59)
CHANGE in Employment		
No change		63.9 (147)
Hours increased		0.9 (2)
Hours decreased, maintained employment		2.6 (6)
Laid off		0.9 (2)
Not applicable		31.7 (73)
CHANGE in Social Activities		
Not Much Change		22.2 (51)
Changed for the Better		3.0 (7)
Changed for the Worse		74.8 (172)

Table 2

Reported Differences in Descriptive Characteristics in Relation to COVID-19 (N = 230)

Characteristic	Before COVID-19 % (n)	Following Onset of COVID-19 % (n)
Employment Status		
Full-time (40+ hours)	5.7 (13)	4.8 (11)
Part-time (up to 32 hours)	6.5 (15)	4.8 (11)
Unemployed, looking for work	0.4 (1)	0.4 (1)
Unemployed, not looking for work	0.4 (1)	1.3 (3)
Retired	85.2 (196)	86.1 (198)
Homemaker	0.9 (2)	1.3 (3)
Self-employed	0.9 (2)	0.9 (2)
Unable to work	0.4 (1)	0.4 (1)

OLDER ADULT SOCIAL PARTICIPATION DURING COVID-19

Volunteer Status		
Yes	63.5 (146)	30.4 (70)
No	36.5 (84)	69.6 (160)
Main method of interaction		
Face to face conversation	87.4 (201)	10.9 (25)
Phone call	3.5 (8)	25.7 (59)
Text	6.1 (14)	36.1 (83)
Email	2.2 (5)	7.4 (17)
Video call	0	19.6 (45)
Other	0.9 (2)	0.4 (1)
Reliance on Family and Friends		
Yes	3.0 (7)	10.4 (24)
No	97.0 (223)	89.6 (206)
Perceived Social Support		
Adequate	97.8 (225)	78.7 (181)
Not Adequate	2.2 (5)	21.3 (49)
Living Arrangement		
Alone in a private residence	21.3 (49)	22.2 (51)
Not alone in a private residence	73.5 (169)	71.7 (165)
Private residence with children	3.5 (8)	3.9 (9)
Alone in senior living	0.9 (2)	1.3 (3)
Not alone in senior living	0.9 (2)	0.9 (2)
Frequency of Family Visits		
Frequently (daily/weekly)	63.5 (146)	26.5 (61)
Often (monthly)	26.5 (61)	40.9 (94)
Yearly (rarely)	10 (23)	32.6 (75)
Satisfaction with Health Care		
Not satisfied at all	0.4 (1)	3.0 (7)
A little satisfied	1.3 (3)	9.1 (21)
Neutral	3.0 (7)	16.5 (38)
Satisfied	56.1 (129)	50.4 (116)
Extremely satisfied	39.1 (90)	20.9 (48)

Table 3

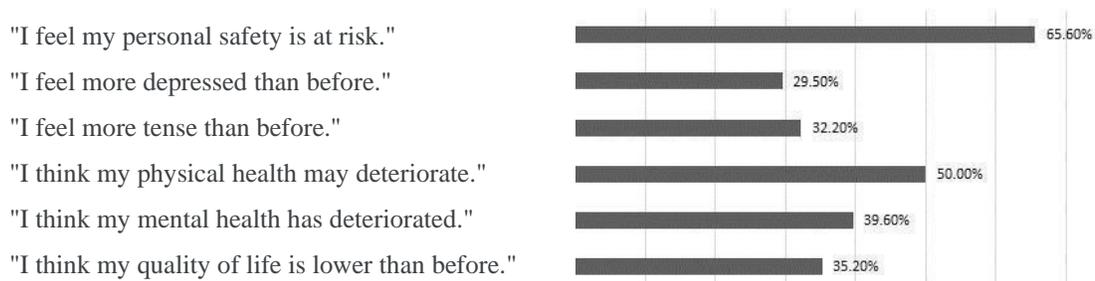
Descriptive Characteristics for Reported Differences in Lifestyle Routines in Relation to COVID-19 (N = 230)

	Before COVID-19 Mdn (IQR)	COVID-19 Mdn (IQR)
Number of Interactions*	20 (30)	5 (25)
Number of community activities	3 (2)	0 (1)
Number of physical activities	3 (14)	1 (4)

*Outliers removed from analysis

Figure 1

COVID-19-QoL Scale: Response Percentages of Participants who Agreed/Strongly Agreed



Objective 1: Difference in Social Participation Habits/Routines in Relation to COVID-19 Number of Interactions, Community Activities, and Physical Activities

Three Wilcoxon signed-ranks tests were conducted to determine whether there was a significant difference in responses regarding the number of weekly interactions, exercise activities, and community activities individuals engaged in: (a) before the onset of COVID-19 and (b) following the onset of COVID-19. High outliers ($x > 30$) were removed from the analysis for the number of interactions. There were significant differences between responses regarding number of interactions ($Z = -10.13$, $p < 0.001$), community activities ($Z = -11.586$, $p < 0.001$), and exercise activities ($Z = -7.455$, $p < 0.001$) individuals engaged in before and following the onset of COVID-19. The effect size was medium for the number of interactions ($d = 0.57$), community activities ($d = 0.54$), and ($d = 0.74$) exercise activities.

Objective 2: Difference in Perceptions of Social Participation in Relation to COVID-19

Social Support

A McNemar test based on binomial distribution was conducted to determine whether there was a significant difference in responses of (a) “inadequate social support before the onset of COVID-19” and (b) “inadequate social support following the onset of COVID-19”. The analysis showed a significant difference ($p < 0.001$) in social support before and following the onset of COVID-19. When recalling experiences before the pandemic, 97.8% of participants reported adequate social support, while 2.2% said they did not have adequate social support. Following the onset of COVID-19, 78.7% reported adequate social support, whereas 21.3% reported that they did not have adequate social support. Overall, there was a 19.1% increase in reports of inadequate support before the pandemic compared to following the onset of the pandemic.

Reliance for IADLs

A McNemar test based on binomial distribution was conducted to determine whether there was a significant difference in responses of (a) “relying on others for IADLs before the onset of COVID-19” and (b) “relying on others for IADLs following the onset of the COVID-19”. The analysis showed a significant difference ($p < 0.001$) in reliance for IADLs before and following the onset of COVID-19. Before COVID-19, 3.0% of the participants relied on family and friends for assistance with IADLs, while 97.0% did not rely on family and friends for IADLs. After COVID-19, 10.4% relied on family and friends, while 89.6% did not rely on family and friends. Compared with the number of people who reported reliance on family and friends before the pandemic, there was a 7.4% increase in frequency of reliance on others following the onset of COVID-19.

Satisfaction with Access to Health Care

A McNemar test based on binomial distribution was conducted to determine whether there was a significant difference between the participants' levels of dissatisfaction with access to health care before and after the onset of COVID-19. The participant responses were grouped into "not satisfied at all" and "a little satisfied" for this analysis. The analysis showed a significant difference ($p < 0.001$) in satisfaction with access to health care before and following COVID-19. Less than 2% of the participants (1.6%) reported they were not satisfied at all or a little satisfied with their access to health care before the onset of COVID-19. Meanwhile, 14.7% reported they were not satisfied at all or a little satisfied following the onset of COVID-19. This change reflects a 13.1% increase in frequency of the response "a little satisfied" or "not satisfied at all" with access to health care following COVID-19.

Objective 3: Differences in COV19-QoL Scores Between Groups

Prior to analysis, a sum QoL score was calculated for each participant. The average score on the COV19-QoL scale was 18 out of 30. Only responses regarding experiences following the pandemic were included in the following analyses.

Age

A Kruskal Wallis test was conducted to examine differences in COV19-QoL scores between age groups. The analysis indicated there was a significant difference in QoL scores between age groups ($X^2(2) = 9.595, p = 0.008$). The effect size was a small effect ($d = 0.42$). The pairwise post hoc analyses with the Mann-Whitney U test and the Bonferroni correction at an adjusted alpha significance of 0.0167 revealed significant differences in COV19-QoL scores between individuals 65 to 75 years of age and those 76 to 86 years of age ($Z = -3.05, p = 0.002$) with a small effect size ($d = 0.42$).

Living Arrangement

A Mann-Whitney U test was used to examine differences in COV19-QoL scores between individuals who lived alone compared to individuals who lived with others. The results indicated there was a significant difference in COV19-QoL scores between individuals who lived alone and those who lived with others ($Z = -2.16, p = 0.03$). The effect size was small ($d = 0.29$).

Preferred Methods of Interaction

A Kruskal Wallis test was conducted to examine differences in COV19-QoL scores between individuals who reported primarily using face-to-face conversation, phone call, text, email, and video call. Analyses indicated there was not a significant difference in COV19-QoL scores between individuals who used different methods of interaction ($X^2(5) = 7.04, p = 0.22$).

Social Support

A Mann-Whitney U analysis was conducted to examine differences in COV19-QoL scores between individuals who reported adequate support and those who reported inadequate support. The results showed there was a significant difference in COV19-QoL scores between individuals who reported adequate and those who reported inadequate social support ($Z = -7.243, p < 0.001$). The effect size was large ($d = 1.09$).

Social Isolation Frequency

A Kruskal Wallis test was conducted to examine for difference in COV19-QoL scores between individuals who reported different frequencies of social isolation following COVID-19. The participants rated their frequency of social isolation through a 5-point Likert scale from *never* to *always*. The analysis indicated a significant difference between groups ($X^2(4) = 22.12, p < 0.001$). The pairwise posthoc analyses with the Mann-Whitney U test and the Bonferroni correction at an adjusted alpha significance of

0.008 revealed significant differences in COVID-19-QoL scores between individuals who reported *always* and *rarely* ($Z = -2.85, p = 0.003$) and *always* and *never* ($Z = -3.22, p < 0.001$). Significant differences in COVID-19-QoL scores were also identified between individuals who reported self-isolation *most of the time* and *rarely* ($Z = -2.70, p = 0.007$) and *most of the time* and *never* ($Z = -3.35, p < 0.001$).

Perceptions of Health Care

A Kruskal Wallis test was used to examine for differences in COVID-19-QoL scores between individuals who were satisfied/extremely satisfied and somewhat satisfied/not satisfied at all. The results indicated there was a significant difference in COVID-19-QoL scores ($X^2(2) = 8.070, p = 0.018$). The effect size was small ($d = 0.38$). The pairwise post hoc analyses, with the Mann-Whitney U test and the Bonferroni correction at an adjusted alpha significance of 0.0167 revealed a significant difference between those who were satisfied with health care services and those who were not satisfied with health care services ($Z = -2.716, p = 0.007$). The effect size was small ($d = 0.40$).

Employment Status

A Kruskal Wallis test was conducted to determine whether there was a significant difference in COVID-19-QoL scores between individuals who were employed compared to those who were unemployed. The results indicated there was not a significant difference in QoL scores between individuals who were employed compared to those that were not employed during COVID-19 ($X^2(2) = 2.53, p = 0.28$).

Discussion

This study explored the extent to which the social participation of older adults changed during the COVID-19 pandemic and further examined the impact of those changes relative to the participants' QoL. Overall, the results from the survey data indicate that older adults, a group already potentially at risk for increased isolation, experienced a significant shift in social participation throughout the duration of COVID-19. Analyses revealed a significant decrease in the reported number of interactions, number of community activities, and the number of opportunities to exercise. The results affirm previous findings that showed decreases in physical activity and social participation following the initial phases of the COVID-19 pandemic (Aubertin-Leheudre & Rolland, 2020; Baker & Clark, 2020; Lin & Fisher, 2020). Evidence of a decrease in the number of social participation routines supports the fundamental assumption of this study; social participation significantly changed during COVID-19.

Consequently, fewer interactions and less activity ultimately reflected a lack of adherence to prior habits, roles, and routines that encouraged social participation. This study contributes to the larger body of evidence by illuminating aspects of the needs older adults face in order to sustain their occupational engagement in the future. Furthermore, this study emphasizes the finding that although accessibility and physical health status was less impacted for some older adults during COVID-19, the larger systems of structural and functional support (i.e., accessibility to health care, opportunities to participate in the community, systems in place to protect people from the deleterious effects of loneliness) may not have been robust enough to protect an individual from experiencing disruptions to their typical occupations, therefore leading to overall occupational imbalance.

Analyses revealed an increase in the number of individuals who reported reliance on family and friends for assistance with IADLs. An increased reliance on family and friends includes assistance for tasks, such as grocery shopping, help with medication management, or help with home management. Yet, despite the increased reliance on social networks for support, the older adults in this study reported less perceived social support. The authors of the study purport that while more individuals reported reliance

on others during the pandemic, their reliance on others may not have translated into the subjective feelings of being supported.

Furthermore, the results suggest that increased reliance on others may not be indicative of the type of meaningful interactions that older adults seek. As individuals age, future time often feels more limited. The literature indicates that as this occurs, it contributes to older adults' desire to focus on and pursue experiences that are the most meaningful to them (Grote & Pfrombeck, 2020). Thus, the limited opportunity for social interactions beyond those in service to sustaining daily habits, roles, and routines, and the consistently growing need for more opportunities to engage in meaningful social activities support a need for developing occupational therapy evaluation and interventions. The results of this research imply that a more targeted approach to intervention that focuses on older adults needs to improve the quality of their interactions rather than merely the quantity of the interactions and suggests the potential for occupational engagement to be used as a means for positively impacting their overall social participation.

Among other findings, the consideration of the quantity and quality of social-interactions relative to participants' overall QoL was explored through analysis of participant scores on the COV19-QoL Scale. As we hypothesized, the results of our study suggest a positive relationship wherein individuals who reported quantitatively fewer opportunities for social participation, those who lived alone or self-isolated to prevent the spread of COVID-19, had a lower overall score on the COV19-QoL Scale. In addition, the more subjective experiences of perceived low social support, such as the expression of dissatisfaction with accessibility or interactions related to participants' health care situation, resulted in lower overall scores on the COV19-QoL Scale.

Despite the relationship between QoL and various changes during COVID-19, Schutte (2020) challenges current researchers to reframe the narrative that describes older adults as "at risk, vulnerable, and even expendable" and instead work to preserve and support the "vital, abundant, and essential" roles older adults play in society (p. 118). Though contrary to current stereotypes surrounding aging, one surprising element of the results suggests that COVID-19 should remind us to recognize the capacity for resilience that exists in many older adults. We found that the participants who were between 76 and 85 years of age had higher overall QoL scores when compared to the adults in the 65 to 75 years of age group.

While this seems divergent to current labels that accompany aging, this aspect of the results lends more support to other evidence suggesting that, on average, older adults reported experiencing less negative emotion and more positive emotion, despite their perception of greater risk, and despite reporting more stress than younger participants during COVID-19 (Carstensen et al., 2020). The current work further clarifies the fact that some older adults may cope with the challenges of COVID-19 and the ongoing effects of the pandemic more readily to sustain a positive, healthy outlook over time, thus bolstering their sense of purpose, social connectedness, and overall wellness. By shifting the paradigm with regard to our perspective of older-adults, the results of this study support a more encompassing view of older adults, not as vulnerable but as valuable models for how to optimize social participation despite the negative impacts of situational contexts.

Limitations

Sample

Because of COVID-19, the sample was primarily limited to individuals willing to use the computer. Further limiting generalizability, several of the sample groups had limited representation, with less than 5% of the total participant population.

Instruments

The items on the survey posed some limitations to the study. First, the entire survey required recall and self-report of experiences before COVID-19, which makes the results susceptible to hindsight bias. Further exacerbating this effect is the fact that all items were administered in the same order and were not counterbalanced. Last, because of the novelty of the COV19-QoL scale, there has been limited psychometric testing to determine reliability and validity.

Future Research

The data in this study poses several opportunities for future research. The COV19-QoL scale is freely available to use, and data can be shared with the IMPULSE project team (Repišti et al., 2020). In addition, future research might examine the relationship between reliance on others, social support, and the number of interactions to further explore the subjective and objective experiences of social participation.

The current study served as the basis of a doctoral capstone project which further explored the needs of the population in terms of social participation and created a program manual with recommendations and guidelines for social participation interventions. Overall, future studies are crucial as the pandemic is still progressing, which might result in changes to the current data in the future. As more information is gathered, research regarding occupational therapy based interventions will be crucial for addressing social participation in the older adult population following COVID-19.

Conclusion

This study identified a significant shift in social participation and a need for increased consideration of performance skills, education, and improved quality of social opportunities. Despite the increased risks many older adults faced during COVID-19, the pandemic provides opportunities to expand resources to support older adults and, equally crucial, to preserve and enhance older adults' ability to be vital members of the community. Ultimately, if social isolation and loneliness can be so detrimental to physical health, mental health, and QoL, then social participation and social connection are just as potent mediators of health and wellness, even amid a global pandemic.

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Appendix Survey

Demographic Form

How old are you? _____

Which best describes your gender identity?

- A. Man
- B. Woman
- C. Non-binary/Gender Nonconforming
- D. Transgender
- E. Prefer not to answer

What is your marital status?

- A. Married
- B. Divorced
- C. Widowed
- D. Separated
- E. Never Married
- F. Living with Partner
- G. Prefer not to answer

Do you have family living within a 15-mile radius that you see on a regular basis?

- A. Yes
- B. No

Have you had to rely on family and/or friends to help with your daily activities during the pandemic? (i.e.: medication management, grocery shopping, household management, etc.)

- A. Yes
- B. No

Do you feel you have the technology skills to perform online activities?

- A. Yes
- B. No

Have you tested positive for COVID-19?

- A. Yes
- B. No

Have you self-isolated to prevent contracting COVID-19?

- A. Always
- B. Most of the time
- C. Sometimes
- D. Rarely
- E. Never

Select any of the following conditions you have or previously have been diagnosed with:

- A. Cancer
- B. COPD
- C. Heart conditions such as coronary artery disease, heart failure, etc.
- D. Weakened Immune system due to organ transplant
- E. Chronic Kidney Disease
- F. Type II Diabetes
- G. Sickle Cell Disease
- H. High Blood Pressure
- I. None of the Above

The following questions ask about your experiences BEFORE and AFTER the COVID-19 outbreak. Based on the World Health Organization’s Timeline, “before” refers to any time prior to January 2020 and “after” refers to anytime following January 2020.

Experiences Before and Following COVID-19

Section 1: Employment and Finances

BEFORE COVID-19 OUTBREAK:

What was your employment status prior to COVID-19?

- A. Employed full time (40 or more hours per week)
- B. Employed part time (up to 39 hours per week)
- C. Unemployed and currently looking for work
- D. Unemployed and not currently looking for work
- E. Retired
- F. Homemaker
- G. Unable to work

SINCE THE COVID-19 OUTBREAK (currently)

What is your current employment status?

- A. Employed full time (40 or more hours per week)
- B. Employed part time (up to 39 hours per week)
- C. Unemployed and currently looking for work
- D. Unemployed and not currently looking for work
- E. Retired
- F. Homemaker
- G. Self-employed
- H. Unable to work

Did your employment status change due to COVID-19?

- A. No change
- B. Hours increased
- C. Hours decreased, but maintained employment
- D. Laid off
- E. Not applicable

BEFORE THE COVID-19 OUTBREAK: Yes

Did you volunteer for any community organizations?

- A. Yes
- B. No

SINCE THE COVID-19 OUTBREAK (currently):

Do you volunteer for any community organizations?

- A. Yes
- B. No

Section 2: Lifestyle Routines

BEFORE the COVID-19 OUTBREAK:

On average, how many people did you interact with on a weekly basis? _____.

What was your main way of interacting with people?

- A. Face-to-face conversation
- B. Phone call
- C. Text
- D. Email

- E. Video call
- F. Other: _____.

SINCE THE COVID-19 OUTBREAK (currently)

What has been your main way of interacting with people?

- A. Face to face conversation
- B. Phone call
- C. Text
- D. Email
- E. Video call
- F. Other: _____.

BEFORE THE COVID-19 OUTBREAK:

On average, how many people do you interact with on a daily basis? _____.

SINCE THE COVID-19 OUTBREAK (currently)

On average, how many people do you interact with on a daily basis? _____.

BEFORE the COVID-19 OUTBREAK:

How many group/community activities did you participate in on a weekly basis? _____.

SINCE THE COVID-19 OUTBREAK (currently)

How many group/community activities are you able to participate in? _____.

BEFORE THE COVID-19 OUTBREAK:

How many physical activities did you participate in on a weekly basis? _____.

SINCE THE COVID-19 OUTBREAK (currently)

How many physical activities did you participate in on a weekly basis? _____.

BEFORE THE COVID-19 OUTBREAK:

Did you feel that you had adequate social support from family and friends?

- A. Yes
- B. No

SINCE THE COVID-19 OUTBREAK (currently)

Did you feel that you had adequate social support from family and friends during the pandemic?

- A. Yes
- B. No

Additional comments about changes with your lifestyle due to COVID-19 (optional):

Section 3: Living Arrangement

BEFORE THE COVID-19 OUTBREAK :

Which best describes your living arrangement prior to COVID-19?

- A. I lived alone in a private residence (home, condo, non-senior living apartment complex)
- B. I lived in a private residence with spouse, partner, or friend
- C. I lived in a private residence with my children
- D. I lived alone in a senior living complex
- E. I lived in a senior living complex spouse, partner, or friend

SINCE THE COVID-19 OUTBREAK (currently)

Which best describes your living arrangement currently?

- A. I live alone in a private residence (home, condo, non-senior living apartment complex)
- B. I live in a private residence with spouse, partner, or friend
- C. I live in a private residence with my children
- D. I live alone in a senior living complex
- E. I live in a senior living complex with spouse, partner, or friend

BEFORE THE COVID-19 OUTBREAK:

How regularly did you see these family members?

- A. Frequently (daily/weekly)
- B. Often (monthly)
- C. Rarely (yearly)

SINCE THE COVID-19 OUTBREAK (currently)

How regularly did you see these family members?

- A. Frequently (daily/weekly)
- B. Often (monthly)
- C. Rarely (yearly)

Additional comments about changes with your living arrangement due to COVID-19 (optional):

Section 4: Health Care

BEFORE THE COVID-19 OUTBREAK:

How satisfied were you with your access to health services?

Not satisfied at all A little satisfied Neutral Satisfied Extremely Satisfied

SINCE THE COVID-19 OUTBREAK (currently)

How satisfied are you with your access to health services?

Not satisfied at all A little satisfied Neutral Satisfied Extremely Satisfied

Please provide any additional comments you have about your access to health care services during the COVID-19 pandemic (optional)

Section 5: Quality of Life

Please choose the number that best represents the degree of your agreement with the statements provided below. Please keep in mind that your estimates should reflect your feelings and thoughts **during the past 7 days.**

Due to the spread of the coronavirus,	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I think my quality of life is lower than before.	1	2	3	4	5
I think my mental health has deteriorated.					
I think my physical health may deteriorate.					
I feel more tense than before.					
I feel more depressed than before.					
I feel my personal safety is at risk.					

Additional comments about changes with your mental health or quality of life due to COVID-19 (optional):