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Kathleen Melei OTD

Jill R. Linder DHSc, OTR

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

Authors

Kathleen Melei, OTD Huntington University

Jill Linder, DHSc, OTR Parkview Hospital, Huntington University

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Abstract

The current study evaluated the relationship between social participation and quality of life (QoL) for older adults during the COVID-19 pandemic. Community-dwelling adults (N = 230) age 65 or older completed an online survey providing demographic data to identify changes in lifestyle routine during the pandemic using the COVID-19 Quality of Life (COV19-QoL) scores. Analyses revealed significant differences in reported lifestyle routines in relation to the onset of the COVID-19 pandemic and significant differences in COV19-QoL scores across various demographic groups. Results demonstrated the close relationship between social participation and QOL, assisted with identifying individuals at increased risk, and indicated potential guidelines for intervention. The sample was primarily limited to individuals willing to use the computer and several of the sample groups had limited representation with less than 5% of the total participant population. The use of novel instruments that relied on self-report also limited study conclusions. Future research is needed to improve interventions for social isolation and loneliness and affirm the value of an occupational therapy (OT) perspective in response to the COVID-19 pandemic.

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

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 (CDC, 2020; Sheehy, 2020). Quarantine, also referred to as medical isolation, is defined as “the separation and restriction of movement of people who have been potentially exposed to a contagious disease to ascertain if they become unwell, so reducing the risk of them infecting others” (Brooks et al., 2020 cited by Baker & Clark, 2020, p. 232). While older adults relied upon 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 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., 2020). Older adults’ heightened risk of social isolation and loneliness pre-dates the COVID-19 pandemic. Nevertheless, the pandemic’s extended quarantine, which further limited people’s community access and engagement in social

and physical activities, also further exacerbated the potential for occupational deprivation (Baker & Clark, 2020; Berg-Weger & Morely, 2020).

Social Participation and Mental Health

Social isolation presents challenges to both mental and physical health, encouraging 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. Unfortunately, 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 decline 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 (2020) 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.

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 experiencing feelings of hopelessness, and feelings of loneliness, can be a gateway to developing unhealthy habits and routines. These same feelings increase suicidal thoughts and have the potential to 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, repeated exposure to the media coverage of an overwhelmed medical system, these 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, immuno-deficiency, 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. The trajectory toward physical decline was noted by experts very early in the COVID-19 pandemic, and can be characterized by reports that, for example, since the onset of the pandemic, adults have decreased their number of daily steps between 7-38% (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 and 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 and 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, 6 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* (Repišti 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 following the pandemic (Neimeyer, 2020). Use of these assessments may assist in identifying risks for older adults, can 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 healthcare providers to maximize the quality of our care and prevent further functional decline in clients, amidst the evolving COVID-19 pandemic landscape.

Social Participation and Quality of Life

Even for older adults who maintain physical and mental health, social isolation can still affect QoL. Social isolation and physical distancing has limited access to caregivers and routine healthcare 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 for having difficulty taking all of the necessary measures to preserve their overall health. This often leads to fundamentally negative impacts on their quality of life.

Social participation promotes older adult's 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 included, not only physical benefits, but also increased clients' sense of purpose, companionship, communication skills, and improved understanding (Office et al., 2020). (Neimeyer, 2020).

The Role of Occupational Therapy

Occupational therapy practitioners play distinct roles as healthcare providers by ensuring that individuals can continue to access and engage in their meaningful occupations (Drette, 2020). Occupational therapy practitioners 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). Occupational therapy practitioners implement preventative approaches and chronic illness management, both of which also 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, OT practitioners 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, OT practitioners can help older adults overcome the obstacles that have resulted from social distancing. OT practitioners can also address the social needs of older adults through 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, Balser 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 through the use of environmental and activity modification (Stephenson, 2011; Dirette, 2010). In addition, OT practitioners can assist with identifying and consistently monitoring older adults who are at risk

for 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 quality of life. 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' quality of life. 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 for Instrumental Activities of Daily Living (IADLS), and satisfaction with access to healthcare).
3. To determine if there is a difference in scores on the COVID-19 Quality of Life (COV19-QoL) Scale by demographics (age, gender, marital status, employment status, and living arrangement), access to healthcare, 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 age 65 or older.

Instruments

Information regarding participant demographics and lifestyle routine were 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. 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.

COVID-19 Quality of Life Scale (COV19-QoL)

The COV19-QoL scale assesses the perceptions of QoL and mental health amidst the COVID-19 pandemic (Repišti et al., 2020). The scale consists of six items rated on a 5-point Likert scale, based on self-report of experiences within the past week (See Appendix A) 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 the purpose of this study, however, total scores were utilized, 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 within 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 on a voluntary and anonymous basis. Consent was indicated by accessing the link and completion of 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)
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 Healthcare		
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)

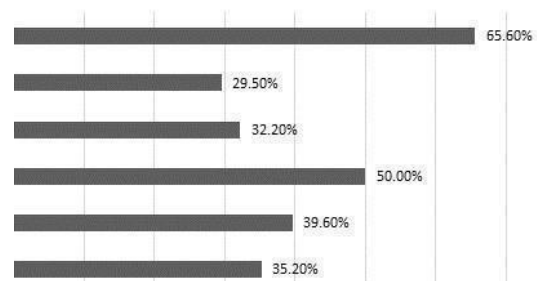
	Before COVID-19 Mdn (IQR)	COVID-19 Mdn (IQR)
Number of Interactions*	20 (30)	5 (25)
Number of community activities	3 (2)	0 (1)
Number of physical activities	3 (14)	1 (4)

*Outliers removed from analysis

Figure 1.

COVI9-QoL Scale: Response Percentages

"I feel my personal safety is at risk."
 "I feel more depressed than before."



"I feel more tense than before."

"I think my physical health may deteriorate."

"I think my mental health has deteriorated."

"I think my quality of life is lower than before."

Percentage 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 ($d = 0.57$) and community activities ($d = 0.54$) and ($d = 0.74$) for 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 prior to 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, 3.0% of 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 Healthcare

A McNemar test based on binomial distribution was conducted to determine whether there was a significant difference between participants’ levels of dissatisfaction with access to healthcare before and after the onset of COVID-19. Participant responses were grouped into “not satisfied 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 participants (1.6%) reported they were not satisfied/a little satisfied with their access to healthcare prior to the onset of COVID 19. Meanwhile, 14.7% reported they were not satisfied/a little satisfied following the onset of COVID-19. This change reflects a 13.1% increase in

frequency of the response “a little satisfied/not satisfied at all” with access to healthcare 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

To examine differences in COV19-QoL scores between age groups, a Kruskal Wallis test was conducted. 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 aged 65-75 and those aged 76-86 ($Z = -3.05, p = 0.002$) with a small effect size ($d = 0.42$).

Living Arrangement

To examine differences in COV19-QoL scores between individuals who lived alone compared to individuals who lived with others, a Mann-Whitney U test was utilized. 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

To examine differences in COV19-QoL scores between individuals who reported primarily using face to face conversation, phone call, text, email, and video call, a Kruskal Wallis test was conducted. 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

To examine for differences in COVID-19-QoL scores between individuals who reported adequate support and those who reported inadequate support, a Mann-Whitney U analysis was conducted. Results showed there was a significant difference in COVID-19-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

To examine for difference in COVID-19-QoL scores between individuals' who reported different frequency of social isolation following COVID-19, a Kruskal Wallis test was conducted. 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 post-hoc 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" ($Z = -2.70, p = 0.007$), "most of the time" and "never" ($Z = -3.35, p < 0.001$).

Perceptions of Healthcare

To examine for differences in COVID-19-QoL scores between individuals who were satisfied/extremely satisfied and somewhat satisfied/not satisfied at all, a Kruskal Wallis test was utilized. 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

To determine whether there was a significant difference in COVID-19-QoL scores between individuals who were employed compared to those who were unemployed, a Kruskal Wallis test was conducted. 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' quality of life (QOL). Overall, 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 which 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 healthcare, 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 instrumental activities of daily living (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 supports a need for developing occupational therapy evaluation and interventions. Results of this research imply that a more targeted approach to intervention that focuses on older adults need to improve the *quality* of their interactions rather than merely the *quantity* of the interactions, suggests the potential for occupational engagement to be used as a means for positively impacting their overall social participation.

Amongst other findings, the consideration of the quantity and quality of social-interactions relative to participants' overall quality of life 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. Additionally, the more subjective experiences of perceived low social support, such as the expression of dissatisfaction with accessibility or interactions related to participants' healthcare 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 suggest 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 the ages of 76 and 85 years-old, had higher overall quality of life scores when compared to adults in the 65 to 75-year-old 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

Due to 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, all items were administered in the

same order and were not counterbalanced. Lastly, due to 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). Additionally, future research might examine the relationship between reliance on others, social support, and 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 OT-based interventions will be crucial for addressing social participation within the older adult population following COVID-19.

Conclusion

Despite the increased risks many older adults face during the 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 amidst a global pandemic.

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