

ORIGINAL ARTICLE

The impact of the COVID-19 pandemic on well-being of seniors attending online programs at University of the Third Age: a follow-up study

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INTRODUCTION

On 31 December 2019, a new type of Coronavirus was defined as the pathogen in cases of pneumonia of unknown etiology in Wuhan, China.¹ Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) spread rapidly all over the world, causing a pandemic defined as the Coronavirus disease-2019 (COVID-19)

Abstract

Background: Reports on psychological effects of quarantine during past outbreaks and pandemics showed that quarantined people were more likely to experience psychological problems than those who were not. It was also shown that there was an increase in anxiety, depression, and stress in all age groups during the COVID-19 pandemic. So, we investigated emotional states and quality of life as components of general well-being in older participants of University of the Third Age (U3A) attending online programs during the second year of the pandemic, and compared them with the pre-pandemic COVID-19 period.

Methods: This study was conducted among 27 participants of a U3A program. Data on sociodemographics, Charlson comorbidity index, the Geriatric Depression Scale Short Form (GDS-SF), The Geriatric Anxiety Scale (GAS), and Turkish version of World Health Organization Quality of Life Instrument Older Adults Module (WHOQOL-OLD) were taken in September 2019 and September 2021.

Results: The median age of the participants was 68 (60–75) years (81.5% female). In the COVID-19 pandemic period; ‘Death and dying’ (except for ‘Fear of pain before death’ score), ‘Intimacy’ domain, and ‘Social participation’ domain scores of WHOQOL-OLD decreased compared to the pre-pandemic period ($P < 0.001$, $P = 0.011$, and $P < 0.001$, respectively) whereas the scores for GAS and GDS-SF were higher ($P < 0.001$ and $P = 0.011$). The reason for the decrease in ‘Social participation’ domain scores was the decrease in ‘Satisfaction with opportunity to participate in community’. There was no significant difference in ‘Autonomy’ domain of WHOQOL-OLD ($P = 0.598$).

Conclusion: Although there was no change in ‘Autonomy’ domain among the participants of U3A before and during the pandemic period, anxiety and depression scores were higher in the second year of the COVID pandemic. Only a decrease in satisfaction with opportunity to participate in community might have significant impact on social participation.

pandemic. This outbreak was declared as a ‘Public Health Emergency of International Concern’ by the World Health Organization (WHO) on 30 January, 2020.²

Due to the higher COVID-19 death rate in older adults, a lockdown was imposed on people over 65 years of age in Turkey. As a result of this

lockdown, a mandatory isolation was applied for the older age group. This group is vulnerable for all kinds of diseases and also COVID-19, and at a higher risk of mortality. Further, they spent the entire period away from their social contacts with a need of increased social, and logistic support, feeling lonely. Recent literature on the psychological effects of quarantine during past outbreaks and pandemics (e.g., SARS, H1N1, Ebola, MERS) reported that people who were quarantined were more likely to experience psychological problems than those who were not.³ In addition, cross-sectional studies on COVID-19 have shown an increase in anxiety, depression, and stress in all age groups during the pandemic.⁴⁻⁷ Overall, those studies support the opinion that isolation has a major impact on various aspects of people's lives such as significant psychological stress, triggering a variety of psychological problems as well.⁸ Also, increasing elderly neglect, the lack of policies that address the well-being of older adults raises concerns that prohibitions in the pandemic could kill older adults faster than COVID-19.⁹

Universities of the Third Age (U3A), which have become widespread all over the world including Turkey, are an important step toward improving the quality of life and psychological well-being of the elderly. By supporting lifelong learning, this program not only enables social participation of the elderly, it also increases socialisation. Further, it improves their mental and physical health, self-confidence and independence.¹⁰ It offers the opportunity for students to be together with similar age groups and to learn new things. Ege University U3A is an unpaid education model that supports the lifelong learning for people aged 60 and over, and is based on healthy and active ageing. Students who successfully complete four periods of U3A programs and volunteer in social responsibility projects can graduate. The theoretical and practical lessons of U3A program at Ege University have been both carried out 2 days/week since 2020, due to the pandemic. U3A's education programs switched to online teaching during the COVID-19 pandemic.

Since March 2020, COVID-19 restriction decisions have been taken, and executed in Turkey, although the level of the restrictions changed over time. COVID-19 restrictions for older people were as follows: age-based lockdown curfews, visitor restrictions for residential aged care services, age-based ban on public transport without offering an

alternative. The impact of those restrictions on the mood and quality of life of older individuals is not clear. Studies on the impact of those restrictions on mood and quality of life of older individuals are generally based on cohort data or cross-sectional studies.¹¹⁻²⁰ Generally, follow-up studies in older individuals included post-onset of the COVID-related restrictions. Further, studies in older participants of U3A are mostly cross-sectional.^{10,21,22} So, we aimed to investigate emotional states and quality of life as components of general well-being in older participants of U3A at the second year of the pandemic, and to compare them to the pre-pandemic period.

METHODS

Setting and participants

This study included a subgroup of participants from the U3A program at Ege University. The participants without the use of antidepressants, mood stabilisers or drugs that might influence sleep patterns were administered the Geriatric Depression Scale short form (GDS-SF), The Geriatric Anxiety Scale (GAS), World Health Organization Quality of Life Instrument Older Adults Module (WHOQOL-OLD) in September 2019 for another unpublished study. We undertook an observational study of those individuals aged 60 years and older during the COVID-19 pandemic. The participants were contacted by telephone in September 2021. Those students underwent online programs from the beginning of the COVID-19 pandemic. Among these U3A students, those could be contacted by phone and willing to participate were included in this study. Participants with scores higher than 6 and 4 for GAS and GDS, respectively in September 2019, were excluded.

The data were collected face-to-face before the COVID-19 outbreak and by telephone interviews after the COVID restrictions with a pre-structured data collection form. Older people were not able to go out for any purpose at any time for 2 months at the beginning of the pandemic, and at certain time-line based periods for about a year. The data from the questionnaires in September 2021 were compared with the data already gathered in September 2019 before the COVID-19 pandemic. This form included questions about sociodemographic data, Charlson comorbidity index, GDS-SF, the GAS, and Turkish version of the WHOQOL-OLD. The GAS and GDS-SF were used to

determine the anxiety level and emotional state of the participants. We focused especially on the changes in ‘Death and dying’, ‘Autonomy’, ‘Intimacy’ and ‘Social participation’ domains of the Turkish version of the WHOQOL-OLD to measure the change in quality of life with the COVID-19 lockdown. ‘Sensory abilities’, ‘Past, present and future activities’ domains were not mentioned as the study focused on the effect on COVID-19 lockdown restrictions on physical activities and physical contacts.

Study measurements

The GDS-SF is a 15-item self-reported assessment tool to screen depressive symptoms in the elderly.²³ Turkish validation of the scale was conducted by Durmaz *et al.*²⁴ Of the 15 items, five of the questions (question numbers 1, 5, 7, 11, 13) indicated the presence of depression when answered negatively, while the rest indicated depression when answered positively. Each answer to indicate depression is one point. Scores of 0–4 are considered normal.

The GAS is a self-reported scale developed to assess anxiety among older adults.²⁵ The validity and reliability studies of the GAS were conducted by Karahan *et al.*²⁶ It contains three subscale scores: somatic, cognitive, and affective. It is a four-point Likert scale which ranges from almost never (0), sometimes (1), often (2) to always (3). Participants are asked how often in the past week they experienced each of the symptoms. The scores range from zero to 75, the higher scores indicating higher anxiety levels.

WHOQOL-OLD module was developed and validated by the WHOQOL Group using a simultaneous approach in 22 countries, including Turkey.^{27,28} The WHOQOL-OLD module consists of 24 items in six domains. The answers are rated on a five-point Likert scale (i.e., score 1 = not at all, 2 = a little, 3 = a moderate amount, 4 = very much, 5 = an extreme amount). Items of ‘Death and dying’ domains are reverse-scored items. Those six facets are ‘Sensory abilities’, ‘Autonomy’, ‘Past, present, future activities’, ‘Social participation’, ‘Death and dying’ and ‘Intimacy’. The higher score indicates higher quality of life. We used only subscales of ‘Autonomy’, ‘Social participation’, ‘Intimacy’, and ‘Death and dying’ for focusing on the effect of COVID-19 lockdown restrictions on physical activities and physical contacts.

Statistical analysis

All statistical analyses were conducted using SPSS Statistics 25.0. A P -value of <0.05 was considered statistically significant. Baseline characteristics of the study population are presented as means \pm SD for normally distributed continuous variables or medians and minimum-maximum values for skewed continuous data. Numbers and percentages for categorical variables are used. The McNemar test and the Wilcoxon matched pairs test were used to compare the periods before and after the COVID-19 pandemic. Approval for the study was granted by Ege University Clinical Research Ethical Committee (Date: 12/2020 no. 20-12T/36). All patients were informed about the study protocols in detail and their informed written consents were provided.

RESULTS

The exclusion criteria and the number of patients excluded are given in Figure 1. Finally, a total of 27 participants out of 154 U3A program students were enrolled in the study. The median age of the participants was 68 years (60–75) (81.5% female). While 29.6% lived alone before the COVID-19, the rate rose to 37% after the pandemic. Before the COVID-19 pandemic, 70.4% of them were engaged in regular physical activity, and 92.6% of them visited their doctors regularly. All participants had social health insurance under the social security system. Prior to the onset of the COVID-19 pandemic, 96.3% of participants perceived their age as young or middle-aged. Only 11% of them believed that ageing is a negative factor for all instances. Seventy-four percent of them thought that curfew based on age was ageism. Regarding the pandemic, 29.6% of them or their loved ones were suspected of the COVID-19 infection. Of all, 96.3% followed news about the COVID-19, and all of them were following social media. During the COVID-19 shutdown period, 88.9% were individuals with outdoor opportunities (e.g., at gardens, balconies, or summer homes) and had social environments to meet their needs, while 48.1% reported difficulty accessing ordinary health services. Characteristics of study population are given at Table 1.

We report significant differences for ‘Social participation’ domain ($P < 0.001$), ‘Intimacy’ domain ($P = 0.011$) and ‘Death and dying’ domain

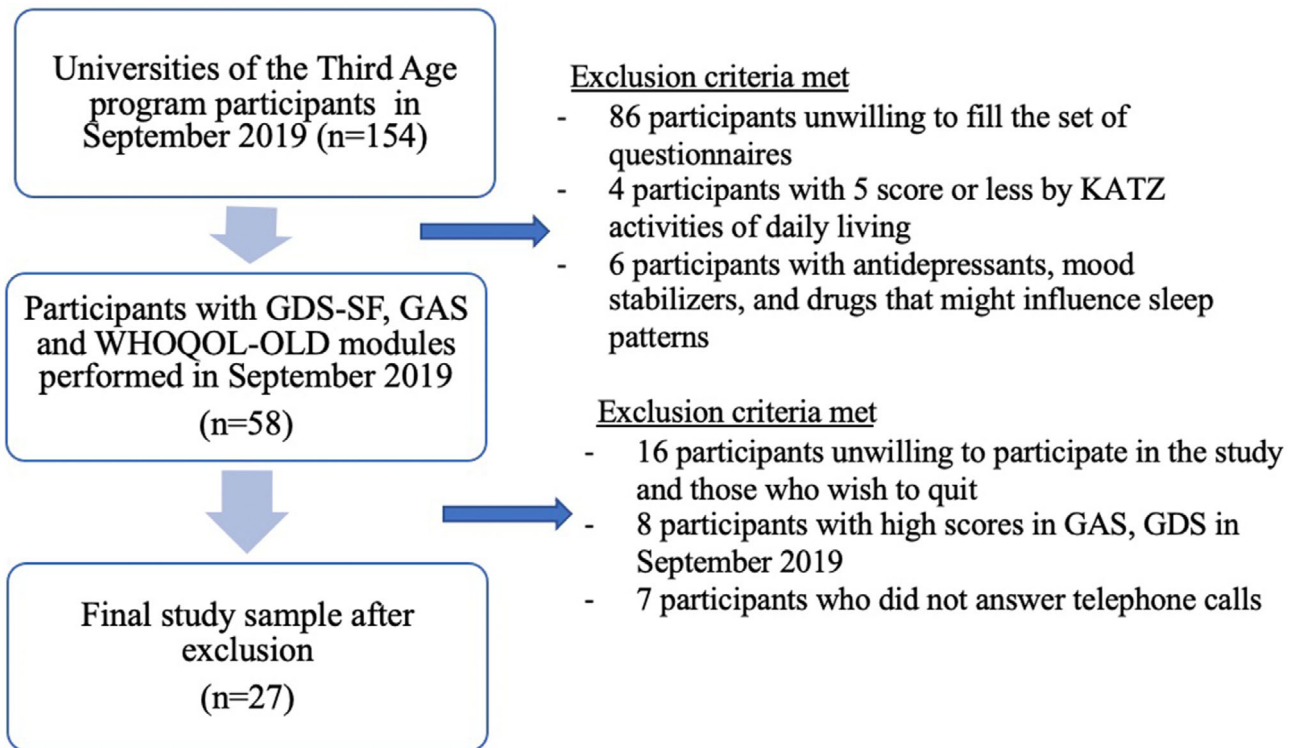


Figure 1 Flow chart of patients enrolled in the study. GDS-SF, the Geriatric Depression Scale short form; GAS, The Geriatric Anxiety Scale; WHOQOL-OLD, World Health Organization Quality of Life Instrument Older Adults Module.

($P < 0.001$). At the end of the second year of the COVID pandemic, ‘Death and dying’ domain and ‘Social participation’ domain scores decreased compared to the pre-pandemic period. Meanwhile, the scores for GAS and GDS-SF increased. There was no significant difference in ‘Autonomy’ domain of WHOQOL-OLD ($P = 0.598$), as well. The scores of tools at the pre-pandemic period and second year of COVID pandemic are given at Table 2.

With the exception of ‘Fear of pain before death’ question, the scores of other questions in the ‘Death

and dying’ domain in September 2021 were statistically lower than in September 2019. In the case of ‘Social participation’ domain, only the score of the question ‘Satisfied with opportunity to participate in community’ in September 2021 decreased statistically compared to the score in September 2019. With the exception of ‘Opportunities to be loved’ question, the scores of other questions in the ‘Intimacy’ domain in September 2021 were statistically lower than in September 2019. Questions in ‘Social participation’ domain, ‘Death and dying’ domain and ‘Intimacy’ domain are demonstrated in Table 3.

Table 1 Characteristics of the study population

Variables	Total population (N = 27)
Age, years, n (min–max)	68 (60–75)
Gender, male, n (%)	5 (18.5)
Education, years, n (min–max)	14 (5–17)
Number of individuals living in their homes, n (min–max)	2 (1–4)
Charlson comorbidity index, n (min–max)	3 (2–6)
Occupation, retired, n (%)	24 (88.9)
Marital status, married, n (%)	16 (59.3)
Economic situation, n (%)	
Expenditure equals income	17 (63%)

DISCUSSION

Components of general well-being for the older individuals include autonomy and life satisfaction, regulating emotional states, and continuing personal growth.²⁹ We investigated the changes on the well-being of senior U3A participants in 2 years of follow-up, and the impact of COVID-19 pandemic through WHOQOL-OLD, GAS, and GDS scales. In the COVID-19 pandemic period; ‘Death and dying’,

Table 2 WHOQ-OLD, GAS and GDS-SF scores in September 2019 and 2021

	Mean ± SE	SD	Median	Z	P-value*
WHOQOL-OLD					
Intimacy					
Baseline	16.9 ± 0.4	2.13	16	-2.530	0.011
Follow-up	16.1 ± 0.5	2.64	16		
Autonomy					
Baseline	15.7 ± 0.5	1.85	15	-0.527	0.598
Follow-up	15.9 ± 0.5	2.39	16		
Social participation					
Baseline	15.6 ± 0.2	1.09	16	-2.962	0.003
Follow-up	12.5 ± 0.8	4.12	14		
Death and dying					
Baseline	17.1 ± 0.5	2.75	17	-3.420	0.001
Follow-up	13.9 ± 0.8	3.91	15		
GAS					
Baseline	3.9 ± 0.5	2.52	5	-4.231	<0.001
Follow-up	16.8 ± 2.5	12.8	15		
GDS-SF					
Baseline	0.6 ± 0.2	1.01	0	-2.554	0.011
Follow-up	1.8 ± 0.5	2.57	1		

*Intra-group comparisons. SE, standard error; SD, standard deviation; WHOQ-OLD, The World Health Organization Quality of Life Instrument Older Adults Module; GAS, The Geriatric Anxiety Scale; GDS-SF, The Geriatric Depression Scale Short Form; Z, Wilcoxon test statistics.

‘Intimacy’, and ‘Social participation’ domain scores of WHOQOL-OLD decreased compared to the pre-pandemic period, whereas the scores for GAS and GDS-SF were higher.

The rate of living alone increased during the COVID-19 in our study. Likewise, a prospective cohort study involving older adults with multimorbidity showed that loneliness, anxiety, and insomnia were increased in older people in the beginning of the COVID-19 pandemic compared to the pre-pandemic period.¹⁵

The ‘Autonomy’ domain denotes independence in old age and thus describes the ability to live in an autonomous way and to make his/her own decisions. During the COVID-19 pandemic, especially the institutionalised older adults, felt like they were ‘prisoners of their own ages’.³⁰ In contrast, a longitudinal observational study showed that older adults felt that they had greater control over their lives than younger individuals in the COVID-19 pandemic.³¹ In our study, there was no significant difference in the score of ‘Autonomy’ domain. It was found that technology-assisted learning and using internet for communication could help to improve autonomy and quality of life during the COVID-19 pandemic.^{32,33} In a survey study, although not a substitute for face-to-face evaluations, older adults tended to be satisfied with web-based activities by virtue of the opportunity to

maintain a routine and spend time with others.³⁴ The internet facilitates access to information and can create an increased sense of independence through improved access to information.^{33,35} So, in our study, senior U3A participants felt they had preserved their autonomy during COVID-19 pandemic.

Participants were individuals with high levels of social engagement prior to the COVID-19 pandemic. They continued to attend U3A classes during the pandemic online. Thus, they were still in the social life, and connected to each other. However, ‘Social Participation’ domain scores decreased during the pandemic in this study. The ‘Social Participation’ domain defines participation in activities of daily living, especially in community life. While autonomy is an individual matter, ‘social participation’ is not. On the other hand, there was no significant change regarding ‘having enough to do each day’ and ‘being satisfied with the level of activity’. However, scores in ‘Satisfied with opportunity to participate in community’ decreased during the COVID 19 pandemic. Older adults who experienced reduced social participation during the COVID-19 pandemic were at high risk for depression, anxiety, and a decrease in satisfaction related with social participation compared to pre-COVID-19.^{36,37} Frail community-dwelling elderly who maintain their social networks were more likely to be physically active during the COVID-19

Table 3 The scores for the questions in the ‘Death and dying’ domain, ‘Social participation’ domain, and ‘Intimacy’ domain of WHOQOL-OLD in September 2019 and 2021

	Mean ± SE	SD	Median	Z	P-value*
Concerned about the way you will die					
Baseline	4.6 ± 0.2	0.8	5	-3.846	<0.001
Follow-up	3.6 ± 0.2	0.9	4		
Afraid of not being able to control death					
Baseline	4.5 ± 0.16	0.9	5	-2.419	0.016
Follow-up	3.8 ± 0.24	1.3	4		
Fear of dying					
Baseline	4.7 ± 0.14	0.7	5	-3.136	0.002
Follow-up	3.9 ± 0.21	1.1	4		
Fear of pain before death					
Baseline	3.3 ± 0.27	1.4	3	-1.619	0.105
Follow-up	2.7 ± 0.23	1.2	3		
Have enough to do each day					
Baseline	3.9 ± 0.12	0.6	4	-0.744	0.457
Follow-up	3.7 ± 0.24	1.2	4		
Satisfied with the way you use your time					
Baseline	3.9 ± 0.18	0.9	4	-1.471	0.141
Follow-up	3.4 ± 0.26	1.3	4		
Satisfied with level of activity					
Baseline	3.9 ± 0.91	0.5	4	-2.173	0.30
Follow-up	3.3 ± 0.26	1.4	4		
Satisfied with opportunity to participate in community					
Baseline	3.9 ± 0.82	0.4	4	-4.449	0.000
Follow-up	2.1 ± 0.15	0.8	2		
Feel a sense of companionship in life					
Baseline	4.4 ± 0.6	0.11	4	-2	0.046
Follow-up	4.2 ± 0.6	0.12	4		
Experience love in your life					
Baseline	4.4 ± 0.6	0.12	4	-2.640	0.008
Follow-up	4 ± 0.9	0.16	4		
Opportunities to love					
Baseline	4.2 ± 0.7	0.14	4	-2.236	0.025
Follow-up	4 ± 0.8	0.15	4		
Opportunities to be loved					
Baseline	4 ± 0.7	0.13	4	-1.732	0.083
Follow-up	3.9 ± 0.7	0.13	4		

*Intra-group comparisons. SE, standard error; SD, standard deviation; WHOQ-OLD, The World Health Organization Quality of Life Instrument Older Adults Module; Z, Wilcoxon test statistics.

pandemic.³⁸ Nonphysical contacts reduced the risk of increased perceived depressive feelings in older adults, and the beneficial impact of nonphysical contacts on depressive feelings was enhanced by the presence of intergenerational relationships.³⁹ Recommendations for improving quality of life and reducing the effects of social isolation and loneliness in the elderly during the COVID-19 pandemic were to keep in touch with their social environment, to use online technologies in social support networks, and self-management interventions.⁴⁰

‘Intimacy’ domain scores decreased during the pandemic in this study. If older adults believed that COVID-19 led to more harm for older individuals than

younger adults, or if they had missing information on COVID-19, their level of happiness decreased.⁴¹ Further, the loss of a loved one during the pandemic resulted in a higher level of grief than before COVID.⁴² Unlike our study, in a study on age differences in emotional experience, increasing age was associated with more positive emotional experiences during COVID-19.⁴³ Age differences in positive emotional experience can be explained by a greater perception of closeness to friends rather than participation in daily activities.⁴³ Factors like international and cultural differences, policy about both the response to the pandemic, and older individuals in different countries might lead to those diverse results.

In our study, participants were afraid of dying, unable to control death, and were concerned about the way they would die in the COVID-19 pandemic more than in the pre-COVID-19 period. We could not locate any other studies investigating fear of death by WHOQOL-OLD scale during the COVID-19 pandemic. A meta-analysis on COVID-19-related death anxiety showed that death anxiety levels were higher in older adults,⁴⁴ while religious coping and spiritual well-being were predictors of death anxiety among older adults.⁴⁵ Loneliness, dependency, depression, and chronic diseases might also contribute to death anxiety associated with COVID-19 disease.⁴⁴ Death anxiety score may decrease by recreational activities such as hobbies at home, communicating via social media or increased activity for spirituality in the COVID-19 period.⁴⁶

Although depression caused by COVID-19 lockdown is more common at younger ages as the risk of depression increases due to financial problems and reduced social support,^{18–20,47,48} anxiety and depression scores were increased during the COVID-19 pandemic in our study. A study carried out at the onset of the COVID-19 pandemic showed that previous illnesses, lack of stable and fixed friends, and high levels of disability were risk factors to develop anxiety and depression in older people with disabilities.⁴⁹ The relationship between fear of dying from COVID-19, anxiety and depression among older adults has continually changed throughout the COVID-19 pandemic. Increased fear of catching COVID-19 and dying from COVID-19 were associated with increased rates of depressive symptoms, higher anxiety levels, and lower life satisfaction.^{17,18,50,51} In contrast, in follow-up studies, the fear of dying from COVID-19 has increased with age, while the risk of emotional distress, depression and anxiety have decreased.^{51–53} Psychological resilience might have substantial impact on responses for anxiety and depression in the COVID-19 pandemic process. During the COVID-19 pandemic, a significant amount of research was carried out about protection of mental health. Studies have shown that older adults who were physically active did not experience an increase in depression and anxiety, or were less depressed.^{13,54} Similar findings were observed for the use of social media in older adults.^{12,55} Also, therapist-guided digital interventions and cognitive behavioural therapy have improved mental quality of

life, reduced loneliness, and provided protection against the life stressors experienced (e.g., lockdown, pandemic).^{56,57}

To our knowledge, this is the first study that has focused on change of emotional states and quality of life by geriatric assessment tools in older participants of U3A, during the COVID-19 pandemic. A relevant limitation of the study was number of participants. The number of participants was small to adjust for confounding factors such as age and living conditions. Also, without a control group, it is harder to be certain of the impact of U3A on well-being.

In conclusion, although there was no change in ‘Autonomy’ domain among the participants of U3A before and during the pandemic period, anxiety and depression scores were higher in the second year of the COVID pandemic. The decrease in satisfaction for opportunity to participate in community had significant impact on social participation scores.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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