

PAPER DETAILS

TITLE: THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND QUALITY OF LIFE IN
INDIVIDUALS AGED 50 YEARS AND OLDER DURING THE COVID-19 PANDEMIC

AUTHORS: Burhan PARSAK,Leyla SARAÇ

PAGES: 92-104

ORIGINAL PDF URL: <https://dergipark.org.tr/tr/download/article-file/1988003>



SPORMETRE
The Journal of Physical Education and Sport Sciences
Beden Eğitimi ve Spor Bilimleri Dergisi

DOI: 10.33689/spormetre. 998963



Geliş Tarihi (Received): 22.09.2021

Kabul Tarihi (Accepted): 03.03.2022

Online Yayın Tarihi (Published): 30.03.2022

THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND QUALITY OF LIFE IN INDIVIDUALS AGED 50 YEARS AND OLDER DURING THE COVID-19 PANDEMIC

Burhan Parsak^{1*}, **Leyla Saraç²**

¹Çukurova Üniversitesi, Spor Bilimleri Fakültesi, ADANA

²Mersin Üniversitesi, Spor Bilimleri Fakültesi, MERSİN

Abstract: The purpose of this study is to examine the level of leisure-time physical activity of women and men aged 50 years and older during the pandemic COVID-19 and the impact of COVID-19 on the quality of life of these individuals and to examine the relationship between these two variables. A total of 84 individuals aged 50 years and older, who were selected through the convenience sampling method, participated in the study. The mean age of the female and male participants in this study was 64.07 and 64.45 years, respectively. The Personal Information Form, Godin-Shephard Leisure-Time Physical Activity Questionnaire, and the COVID-19-Impact on Quality of Life Scale were used for data collection in the study. The results of the study showed that there was a difference between the level of leisure-time physical activity of the female and male participants, with the level of physical activity being higher in the male participants than the female participants. There was no significant difference between the effects of COVID-19 on the quality of life of the male and female participants. The negative impact of COVID-19 on the quality of life of the participants was higher than the average. Examining the relationship between the level of physical activity of the female and male participants and the impact of COVID-19 on their quality of life, it was found that the negative impact of COVID-19 on quality of life of both female and male participants decreased as the level of leisure-time physical activity increased. Thus, the results of this study indicate that COVID-19 has a negative impact on physical activity, especially in females, and on the quality of life in both females and males aged 50 years and older.

Key Words: COVID-19, elderly individual, physical activity, quality of life, leisure-time

COVID-19 SALGINI SÜRECİNDE 50 YAŞ VE ÜZERİ BİREYLERDE FİZİKSEL AKTİVİTE VE YAŞAM KALİTESİ İLİŞKİSİ

Öz: Bu araştırmanın amacı 50 yaş ve üzerindeki kadın ve erkek bireylerin COVID-19 sürecindeki serbest zaman fiziksel aktivite ve COVID-19'un bireylerin yaşam kalitesine etki düzeyini ortaya koymak ve bu iki değişken arasındaki ilişkiyi incelemektir. Araştırmaya kolayda örnekleme yolu ile ulaşılmış olan 50 yaş ve üzerinde toplam 84 birey katılmıştır. Araştırmaya katılan kadın bireylerin yaş ortalaması 64.07, erkek katılımcıların 64.45'tir. Araştırmada veri toplama amacı ile Kişisel Bilgi Formu, Godin-Shephard Serbest Zaman Fiziksel Aktivite Anketi ve COVID-19'un Yaşam Kalitesine Etkisi Ölçeği kullanılmıştır. Araştırmadan elde edilen bulgular kadın ve erkek katılımcıların serbest zaman fiziksel aktivite düzeyleri arasında fark olduğunu, erkek katılımcıların fiziksel aktivite düzeyinin kadın katılımcılardan yüksek olduğunu ortaya koymuştur. Araştırmada, kadın ve erkek katılımcıların COVID-19'un yaşam kalitelerine etki düzeyi arasında ise anlamlı fark bulunmamış, COVID-19'un kadın ve erkek katılımcıların yaşam kalitesine etki düzeyi ortalamasının üzerinde olacak biçimde yüksek bulunmuştur. Kadın ve erkek katılımcıların serbest zaman fiziksel aktivite düzeyi ve COVID-19'un yaşam kalitesine etki düzeyi arasındaki ilişkinin incelenmesi sonucu, serbest zaman fiziksel aktivite düzeyi arttıkça COVID-19'un hem kadın hem de erkek katılımcıların yaşam kalitesine olumsuz etki düzeyinin azaldığı ortaya konmuştur. Sonuç olarak bu araştırmada elde edilen bulgular 50 yaş ve üzeri bireylerde COVID-19'un özellikle kadın bireylerde fiziksel aktiviteye katılım düzeyine ve hem kadın hem erkek bireylerde COVID-19'un yaşam kalitesine olumsuz etkisini göstermiştir.

Key Words: COVID-19, yaşlı birey, fiziksel aktivite, yaşam kalitesi, serbest zaman

*Sorumlu Yazar: Burhan Parsak, Doktora öğrencisi., E-mail: b.parsak@hotmail.com

INTRODUCTION

Physical activity has been defined by the World Health Organization (WHO) as any movement of the body caused by skeletal muscles that necessitate the expenditure of energy; and it is emphasized that physical activity includes the movement of the person for transportation purposes, including the movement activities he/she does in his/her free time, or the movements he/she does as a part of his/her work (WHO, 2018; 2020a). Regular physical activity plays an important role in the prevention and management of non-communicable diseases such as heart diseases, stroke, hypertension, diabetes, and various types of cancer, supporting physical and mental health, and increasing the quality of life and well-being (Bull et al., 2020; WHO, 2020a). In order for individuals in all age groups to get the maximum benefit from physical activity, recommendations for physical activity intensity were made by WHO (2020b), and especially for adults between the ages of 18-64, at least 150-300 minutes a week of moderate-intensity aerobic (cardiorespiratory endurance) physical activity, or at least 75-150 minutes a week of vigorous-intensity aerobic physical activity, or a combination of moderate to vigorous-intensity-equivalent-intensity physical activity throughout the week, is recommended. In addition, it was pointed out that adults should do moderate or compelling muscle-strengthening activities involving all muscle groups (legs, hips, back, abdomen, chest, shoulders, arms) for 2 or more times a week. It has been reported that adults over 65 years of age should participate in multi-component physical activity practices that include moderate or compelling balance and strength activities 3 or more days a week, as part of all these weekly physical activity practices, in order to increase their functional capacity and prevent falls (WHO, 2020b).

Considering the information that the elderly population is increasing all over the world and that individuals over 60 years of age will reach 2 billion in 2050, it is striking that the issue of whether individuals in this age group will create a benefit or a problem for the society remains up-to-date (Bowling et al., 2003; Tiraphat et al., 2017; WHO, 2018). As a way of adapting to this changing demographics of aging, it is recommended to invest in the healthy aging of the elderly population by creating age-friendly environments and to contribute to the families and society of healthy aging individuals (Taylor, 2014; Van Dyck et al., 2015). In addition, it is emphasized that aging, which is caused by the accumulation of a wide variety of molecular and cellular damage over time at the biological level, will provide new opportunities for both the individual and the society in which the individual lives, only if they survive in environments that will prevent or minimize the decline in the physical and mental capacity of individuals (Chodzko-Zajko et al., 2009; Cvecka et al., 2015; DiPietro, 2001; Hollmann et al., 2007). In addition to its many health benefits, researchers refer to the importance of participation in physical activity for elderly individuals to lead an active and independent life, reduce their disability and increase their quality of life (Izquierdo et al., 2021; Sun et al., 2013). Despite documented benefits of physical activity and potential risks of physical inactivity, it is seen that one out of every 4 adults in the world does not reach the recommended level of physical activity (WHO, 2020b). In the report presented by the Centers for Disease Control and Prevention (2016), it was stated that the level of physical activity decreases as age increases and that 25.4% of individuals aged 50-64, 26.9% of individuals aged 65-74, and 35.3% of individuals aged 75 years and older are not physically active. Within the scope of a larger project named Turkish National Nutrition and Health Survey conducted by the Ministry of Health/General Directorate of Public Health (MoH/DGPH), participation in physical activity in different age groups of 22 414 (11 430 women, 10 984 men) people was examined, and the results of this research have been reported that the rate of women in the 45-59 age group who do not participate in physical activity for any reason (work, transportation, entertainment) is 72.2%, the rate of men is 60.5%; the rate of women in the 60-69 age group is 85.8%, the rate of men is 76.2%, and the rate of

women aged 70 years and older is 93.2% and the rate of men is 88.4% (MoH/DGPH, 2019). When compared to WHO's recommendations for participation in physical activity, 35.1% of individuals aged 45-59, 43.2% of individuals aged 60-69, and 64.5% of individuals aged 70 years and older do not participate in physical activity at a level that meets the recommendations (MoH/DGPH, 2019). In addition to many physical and mental benefits, physical activity is also associated with “quality of life”, which is defined as a conscious cognitive judgment that a person is satisfied with his/her life (McAuley et al., 2006; Pernambuco et al., 2012; Rejeski & Mihalko, 2001; Vagetti et al., 2014; Yen & Lin, 2018). Studies have shown that physically active elderly individuals have a higher quality of life than inactive individuals, and the quality of life increases as the level of physical activity increases (Acree et al., 2006; Buchner, 1997; Martins et al., 2019; Pernambuco, 2012). Although the positive relationship between physical activity and quality of life in the elderly has been revealed by several studies, it is emphasized in both national and international reports that the level of physical activity is low in the elderly as in all age groups, and this low level of physical activity also brings a decrease in the quality of life (WHO, 2020a; MoH/DGPH, 2014; 2019).

The COVID-19 pandemic, which initiated in the city of Wuhan, China on December 2019, infecting nearly 230,000 people and causing 4,715,000 deaths from all over the world as of September 2021, has turned into a global crisis and in order to prevent the potential transmission of this deadly virus, governments in almost all countries in the world declared the COVID-19 a public health emergency and imposed a partial or full lockdown; and due to these restrictions, the inability of individuals to work, socialize and participate in normal daily activities has led to a decline in their physical, mental and social health (Calbi et al., 2021; Tang et al., 2020; Xiong et al., 2020). In a review of studies examining the effects of the COVID-19 on the elderly population, Lebrasseur et al. (2021) reported that the restriction of social life and less face-to-face interaction due to the measures against the COVID-19 pandemic caused a decrease in physical activity, negatively affected the quality of life and was associated with depression. In another study, Suzuki et al. (2020) stated that the restrictions within the scope of the measures taken in Japan for the protection of public health caused a decrease in the physical activity and quality of life of the elderly individuals, and that half of the elderly individuals participating in their research were less active due to the COVID-19 pandemic compared to the pre-pandemic period, and that there was a 37% decrease in the weekly physical activity levels of the participants during the COVID-19 pandemic. Examining the level of physical activity and quality of life of individuals from various age groups in the Brazilian sample during the COVID-19 restrictions, de Matos et al. (2020) revealed that 84% of the participants in the study were physically active at a low level and the quality of life of individuals from all age groups decreased. In the research by Bailey et al. (2021) examining the impact of the measures taken against the COVID-19 outbreak in Ireland on the physical and mental health of individuals aged seventy and over, 40% of the elderly individuals who participated in the study defined their mental health as “poor” or “much worse” during the restriction period, more than 40% stated that their physical health decreased, 70% stated that they participated in physical activity less frequently or not at all compared to the pre-pandemic period, and 50% of them stated that their quality of life decreased.

Although the evidence obtained from the studies in the literature revealed that physical activity is associated with the quality of life in the elderly, and the quality of life of the elderly individuals and physical activity levels increase at a similar rate, the number of studies examining the relationship between these two variables during the COVID-19 pandemic, especially in Turkey, was found to be negligible. Therefore, to fill this gap in the literature the primary purpose of this study was to examine the leisure-time physical activity level of men

and women aged 50 years and older during the COVID-19 pandemic and the level of impact of COVID-19 on the quality of life of individuals in this age group, and the secondary purpose was to examine whether there is a relationship between the level of leisure-time physical activity during COVID-19 pandemic and the COVID-19 impact on quality of life in this age group.

METHOD

Research Design

A survey-based correlational design was used in the current study. The survey model allows easy interpretation of the current state of the defined variable. This model is designed to provide systematic information about a situation. In the survey model, the researcher is concerned with explaining the situation within the scope of the research, and this model involves gathering, analyzing, and presenting the collected data. In the survey-based correlational design, variables and naturally occurring relationships between variables are defined (Fraenkel et al., 2011).

Participants

A total of 84 individuals aged 50 years and older were included in this study, of which 54.9% were females and 45.2% were males. Participants were selected through convenience sampling and chosen based on their willingness to participate in the survey. The average age of the females participating in the research were 64.07 ± 15.04 years, and the male participants was 64.45 ± 9.52 years.

Data Collection Tools

The Demographic Information Form, Godin-Shephard Leisure-Time Physical Activity Questionnaire (GSLTPAQ), and COVID-19 Impact on Quality of Life Scale (COV19-QoL_{TR}) were used to collect data.

Demographic Information Form: The tool to gather data on demographic information including gender (male and female) and age of the participants was obtained by the researcher's designed "Demographic Information Form".

Godin-Shephard Leisure-Time Physical Activity Questionnaire (GSLTPAQ): In order to examine the physical activity levels of individuals aged 50 years and older participating in the research Godin-Shephard Leisure-Time Exercise Questionnaire was used. The Questionnaire was developed by Godin and Shephard (1985) and later adapted as the Godin-Shephard Leisure-Time Physical Activity Questionnaire (GSLTPAQ) (Godin, 2011). The GSLTPAQ was adapted to Turkish culture and was tested for validity and reliability by Yerlisu-Lapa and Yağar (2015). Consisting of 3 questions in total, GSLTPAQ has a single factor structure. This scale reveals the physical activity level of the participants (active, moderately active, and insufficiently active/sedentary) in line with the answers of the participants given to the questions. To calculate the total physical activity score of individuals; the scores obtained after strenuous activities (heart beats rapidly) are multiplied by 9, moderate intensity activities (not exhausting) by 5, and mild/light intensity activities (minimal effort) by 3 are added together. The GSLTPAQ formula is presented below (Formula 1):

$$\text{GSLTPAQ total score} = (9 \times \text{Strenuous}) + (5 \times \text{Moderate}) + (3 \times \text{Mild})$$

Formula 1. Leisure-Time Physical Activity Score Calculation Formula

The total score obtained as a result of this calculation shows the physical activity levels of individuals in their free time for one week. When evaluating the scores, individuals with a score of 24 and above are categorized as “active”, individuals with a score between 14-23 are classified as “moderately active” and individuals with a score of 13 or less are categorized as “insufficiently active/sedentary”.

COVID-19 Impact on Quality of Life Scale (COV19-QoL_{TR}): The COVID-19 Impact on Quality of Life Scale (COV19-QoL_{TR}), developed by Repisti et al. (2020) and translated into Turkish by Sümen and Adıbelli (2021), was used to determine the effect of COVID-19 on the quality of life of participants aged 50 years and older. The COV19-QoL_{TR} consists of one dimension and there are a total of 6 items in the scale. The COV19-QoL_{TR} is a 5-point Likert-type rating system, and the rating system is prepared as "strongly agree (5)", "agree (4)", "undecided (3)", "disagree (2)", "strongly disagree (1)". The items in the COV19-QoL_{TR} evaluate the feelings and thoughts of individuals regarding the quality of life in the last seven days during the COVID-19 pandemic. Calculation of the scale score is done by adding the score given to each item and dividing it by the number of items. The higher scores gathered from the COV19-QoL_{TR} indicates that the impact of the COVID-19 outbreak on the individual's level of quality of life is higher. The reliability coefficient of the Turkish version of the scale was calculated as .91. In this study, the reliability coefficient was calculated and found to be .94.

Data Collection Procedures

Before the data collection process, ethical approval was obtained from the Social and Human Sciences Ethics Committee, University of Mersin (approval number: 106). In addition, necessary official permissions were obtained from the corporate managers of the elderly activity centers, elderly associations, etc. In order to eliminate the possibility of transmission due to the COVID-19 virus, the delivery of data collection tools to the participants was carried out remotely. Participants were reached through the managers of organizations such as recreation, relaxation, recovery, and activity houses, associations for the elderly, where they spend their free time. The data collection tools were digitized and delivered to the participants via social media and chat applications, of which elderly individuals are members, through the managers of the previously mentioned institutions. A total of 2 reminder messages were sent in order to increase the number of returns.

Data Analysis

Data were managed by SPSS version 20.0 statistical software for Windows (IBM SPSS Statistics). In the study, the Mann-Whitney U test was used to determine the statistical significance of differences in the leisure-time physical activity levels and the level of impact of COVID-19 on quality of life between female and male participants. Also, Spearman's Correlation Coefficient was used to determine whether there is a significant relationship between the leisure-time physical activity level and the level of impact of COVID-19 on the quality of life of the elderly participants.

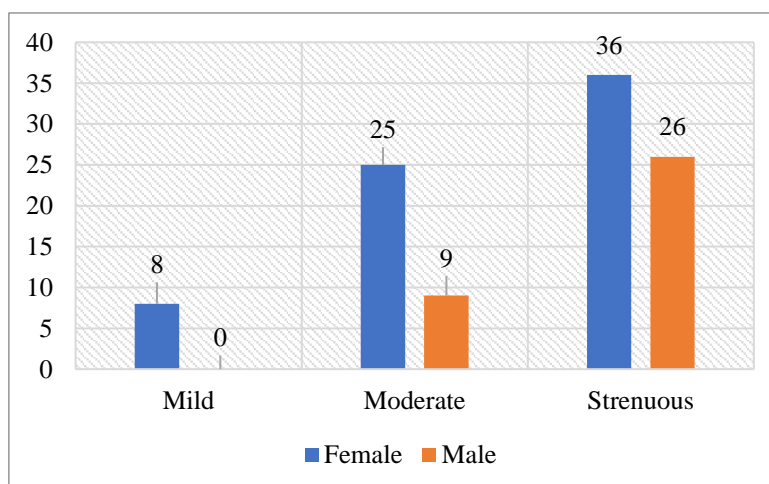
RESULTS

The Mann-Whitney U test results, which were applied to determine whether there is a statistically significant difference in the leisure-time physical activity level of the women and men aged 50 years and older during the COVID-19 pandemic, revealed that there is a statistically significant difference between the leisure-time physical activity level of the female and male participants, $U = 606.00$, $p = .02$. According to these findings, in the present study, the leisure-time physical activity levels of female participants ($\bar{x} = 14.55$, $SD = 14.55$) were found to be lower than male participants ($\bar{x} = 14.55$, $SD = 14.55$) (Table 1).

Table 1. Comparison of GSLTPAQ scores between females and males

Gender	<i>n</i>	\bar{x}	<i>SD</i>	<i>Med.</i>	<i>U</i>	<i>p</i>
GSLTPAQ scores						
Female	46	13.15	14.55	8.50	606.00	.02
Male	38	22.24	26.98	14.00		
Total	84	17.26	21.44	12.00		

According to the GSLTPAQ scoring, individuals who score 13 and below are in the "insufficiently active/sedentary" category. In this study, it is seen that the average score of female participants is 13.15 and this score is close to the "insufficiently active/sedentary category" in terms of leisure-time physical activity level. The mean leisure-time physical activity score of male participants was found to be 22.24, and with this mean score, it was determined that men were in the "moderately active" category. Research findings also revealed that there were no male or female participants in the "active" category (Table 1). As seen in Graphic 1, while the number of female participants who declared that they never participated in "mild" physical activity during the COVID-19 pandemic was 8, there were no male participants who declared in this way. In addition, while the number of female participants who declared that they never participated in "moderate" intensity physical activity during the COVID-19 pandemic was 25, the number of male participants was 9, while the number of female participants who declared that they never participated in "strenuous" physical activity was 36, while the number of male participants was 26.



Graphic 1. Distribution of the intensity of leisure-time physical activity that female and male participants did not participate in during COVID-19 pandemic

The results of the Mann-Whitney U test applied to determine whether there is a statistically significant difference between the COV19-QoL_{TR} scores of the male and female participants aged 50 years and older who participated in the study revealed that there was no statistically significant difference between the COV19-QoL_{TR} scores of the female and male participants, $U = 720.50$, $p = .17$. According to these findings, the COV19-QoL_{TR} scores of female ($\bar{x} = 3.82$, $SS = .91$) and male ($\bar{x} = 3.55$, $SS = .83$) participants were similar and higher than the average (Table 2).

Table 2. Comparison of COV19-QoL_{TR} scores between females and males

Gender	<i>n</i>	\bar{x}	<i>SD</i>	<i>Med.</i>	<i>U</i>	<i>p</i>
COV19-QoL_{TR} score						
Female	46	3.82	.91	4.00	720.50	.17
Male	38	3.55	.83	3.50		
Total	84	3.70	.88	3.75		

Since there was a statistically significant difference between the GSLTPAQ scores of the female and male participants, the data were split and the analyzes of the female and male participants were performed separately before determining whether there was a significant relationship between the GSLTPAQ and COV19-QoL_{TR} scores. For this purpose, Spearman's correlation coefficient was used and the results of the analysis revealed that there was a statistically significant relationship between the GSLTPAQ and COV19-QoL_{TR} scores of female participants, $r_s = -.682$, $p = .001$. According to these findings, as the leisure-time physical activity level of female participants increases, the negative impact of COVID-19 on the participants' quality of life decreases (Table 3). Similarly, the results of the analysis conducted to determine the relationship between the GSLTPAQ and COV19-QoL_{TR} scores of male participants revealed that there was a statistically significant relationship and the negative impact of COVID-19 on quality of life decreases as the physical activity level of male participants increases, $r_s = -.694$, $p = .001$ (Table 3).

Table 3. Correlation between SZA and COV19-QoL_{TR} scores

		COV19-QoL_{TR} score
Female		
GSLTPAQ score	<i>Spearman's Correlation</i>	-.682
	<i>p</i>	.001
	<i>n</i>	46
Male		
GSLTPAQ score	<i>Spearman's Correlation</i>	-.694
	<i>p</i>	.001
	<i>n</i>	38

DISCUSSION

This study aimed to find out the relationship between leisure-time physical activity and quality of life during the COVID-19 pandemic by examining the leisure-time physical activity participation of men and women aged 50 years and older during the COVID-19 pandemic and the COVID-19 effect on the quality of life of these individuals. Research findings have shown that the leisure-time physical activity levels of women aged 50 years and older during the COVID-19 pandemic are lower than men in the same age group. In a study examining the physical activity levels of elderly women and men, it was revealed that the activity levels of

elderly women were lower than men of the same age, and the deterioration in their personal health was higher, which supports the findings of the current study (Chuan, 2007). In a study examining the impact of physical activity on mental health during the COVID-19 pandemic in Australia; it was revealed that during the COVID-19 period, women's responsibilities increased more than that of men, there is a higher decrease in women's physical activity levels and in addition to this their depressive and anxiety symptoms were more common than men (Pieh et al., 2020). In the Dutch sample, in a study in which the effect of COVID-19 on the physical activity behaviors of elderly people was examined; it was revealed that the effect of COVID-19 on the level of physical activity does not make a difference between men and women, while women's physical activity levels decelerated during the COVID-19 period (Visser et al., 2020). The fact that the physical activity level of women is lower than that of men may be related to the fact that women carry more responsibility and sociocultural, socioeconomic, and behavioral factors (Chuan, 2007; Kirchengast & Haslinger, 2008).

The current study findings indicate that there is no difference in the level of the negative impact of COVID-19 on the quality of life of women and men aged 50 years and older and that both women and men are exposed to the negative impact of the COVID-19 pandemic on the quality of life. A study conducted on elderly people in Japan indicated that psychological problems caused by reduced physical activity due to COVID-19 and public health measures taken to prevent transmission of the COVID-19 virus pose an increased concern among the elderly, which as a result negatively affects the quality of life of elderly people (Suzuki et al., 2020). Alongside with this, in a study conducted by Bailey et al. (2021) it was noted that at the beginning of the Covid-19 pandemic, older people were protected more than younger ones, which caused a significant decrease in their physical activity levels, and it was emphasized that this negatively affected the quality of their lives as a consequence. In the study conducted by Walle-Hansen et al. (2021) on the quality of life of elderly patients hospitalized due to COVID-19, it was revealed that the quality of life of elderly people infected with COVID-19 significantly decreased, while a third lost their mobility and began to be unable to perform daily activities. In the American sample, it was stated that elderly people with prior depression at the beginning of the COVID-19 pandemic were worried about contracting COVID-19 and their quality of life declined due to the pandemic (Hamm et al., 2020). The fact that the quality of life of the elderly has been reported to be adversely affected during the COVID-19 pandemic, similarly in studies conducted in many countries, is in line with the findings of this study (Herrera et al., 2021; Radwan et al., 2021). The related literature reported that there is a decrease in the physical activity levels of elderly individuals due to the measures taken against the COVID-19 pandemic (lockdowns, social distance restrictions, etc.), that elderly individuals are more worried about transmissions of the virus, and these restricted environment impact negatively on both physical and psychological health and quality of life of elderly women and men (Aydın & Tütüncü, 2021).

The findings of the current study revealed that as the leisure-time physical activity level of male and female participants increased, the negative impact of COVID-19 on the quality of life of both women and men decreased. The fact that it was emphasized in the studies that restriction of movement causes physical inactivity, which causes serious health problems, and that the quality of life of individuals increases as the level of physical activity increases, supports the findings of this research (Belice et al., 2021; Ciddi & Yazgan, 2020; Krzepota et al., 2018; Slimani et al., 2020; Vagetti et al., 2014). In a study conducted by Perez et al. (2021) examining the level of physical activity of elderly people in Spain in pre- and post- COVID-19 pandemic, it was revealed that there was a significant decrease in the physical activity levels of elderly

Spanish in the post-COVID-19 period and this negatively affected the quality of life of these people.

Concordantly, Caputo and Reichert (2020) analyzed 41 studies examining the physical activity levels of individuals during the COVID-19 period and supporting the results of the current study findings researchers reported that physical activity improves the health status of elderly individuals or plays an important role in maintaining their health, and that emphasized that physical activities, in general, make important contributions to psychological, physiological and social health (Ministry of Family, Labor and Social Services, 2020; Aydın & Tütüncü, 2021; Radwan et al., 2021; WHO, 2021). Similarly, a study conducted on elderly people in Australia found that there was a decrease in the level of physical activity during the COVID-19 period and, accordingly, a significant decrease in the quality of life of both older women and older men (Pieh et al., 2020). In a study conducted by Suzuki et al. (2020) examining the relationship between changes in physical activity levels and quality of life of elderly people in Japan during the COVID-19 pandemic; it was revealed that some practices implemented as part of public health measures during the COVID-19 period caused a decrease in physical activity levels of the vast majority of elderly people, and this negatively affected their quality of life. Similarly, in the French sample, it was reported that the physical activity levels of elderly people decreased due to home quarantine and if measures are not taken to ensure that the elderly move more during the COVID-19 period, their physical and mental health will be adversely affected (Goethals et al., 2020). Besides this, the statements made by the WHO to increase physical activity for the improvement of the elderly or to protect their health during the COVID-19 period also support these research findings (WHO, 2021).

CONCLUSION AND RECOMMENDATIONS

In conclusion, the results of this study showed that the leisure-time physical activity levels of individuals aged 50 years and older during the COVID-19 pandemic differ according to gender, the physical activity level of female participants in leisure-time is lower than men, the effect of COVID-19 on the quality of life of individuals does not differ according to gender, and quality of life of both women and men was adversely affected by the COVID-19 outbreak. In addition, in this study, it was determined that as the leisure-time physical activity level of women and men increased, the negative impact of COVID-19 on the quality of life of women and men decreased.

Based on these research findings, it is recommended that the measures to be taken for the elderly in order to minimize the transmission rate due to the COVID-19 pandemic should be arranged in a way that does not affect or prevent the elderly from doing physical activity. In future research, in order to increase the physical activity levels and quality of life of the elderly during the COVID-19 pandemic, in-depth examinations can be made by conducting face-to-face interviews with the elderly in order to reveal the barriers to participation in physical activity and the factors affecting their quality of life.

REFERENCES

- Acree, L. S., Longfors, J., Fjeldstad, A. S., Fjeldstad, C., Schank, B., Nickel, K. J., ... Gardner, A. W. (2006). Physical activity is related to quality of life in older adults. *Health and Quality of Life Outcomes*, 4(1), 1-6.
- Aydın, İ., Tütüncü, Ö. (2021). Pandemi sürecinde yaşlılık ve rekreasyon. *Anatolia: Turizm Araştırmaları Dergisi*, 32(1), 100-105.

Bailey, L., Ward, M., DiCosimo, A., Baunta, S., Cunningham, C., Romero-Ortuno, R., ... Briggs, R. (2021). Physical and mental health of older people while cocooning during the COVID-19 pandemic. *QJM: An International Journal of Medicine*, hcab015, 1-6.

Belice, T., Bölükbaşı, S., Mandıracıoğlu, A. (2021). Yaşlılarda fiziksel inaktivitenin yaşam kalitesi üzerine etkileri. *Celal Bayar Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi*, 8(1), 44-48.

Bowling, A., Gabriel, Z., Dykes, J., Dowding, L. M., Evans, O., Fleissig, A., ... Sutton, S. (2003). Let's ask them: A national survey of definitions of quality of life and its enhancement among people aged 65 and over. *The International Journal of Aging and Human Development*, 56(4), 269-306.

Buchner, D. M. (1997). Physical activity and quality of life in older adults. *Jama*, 277(1), 64-66.

Bull, F. C., Al-Ansari, S. S., Biddle, S., Borodulin, K., Buman, M. P., Cardon, G., ... Willumsen, J. F. (2020). World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *British journal of sports medicine*, 54(24), 1451-1462.

Calbi, M., Langiulli, N., Ferroni, F., Montalti, M., Kolesnikov, A., Gallese, V., Umiltà, M. A. (2021). The consequences of COVID-19 on social interactions: An online study on face covering. *Scientific Reports*, 11(1), 1-10.

Caputo, E. L., Reichert, F. F. (2020). Studies of physical activity and COVID-19 during the pandemic: A scoping review. *Journal of Physical Activity and Health*, 1(aop), 1-10.

Centers for Disease Control and Prevention (2016). *More than 1 in 4 US adults over 50 do not engage in regular physical activity*. Retrieved from <https://www.cdc.gov/media/releases/2016/p0915-physical-activity.html>

Chodzko-Zajko, W. J., Proctor, D. N., Singh, M. A. F., Minson, C. T., Nigg, C. R., Salem, G. J., Skinner, J. S. (2009). Exercise and physical activity for older adults. *Medicine & Science in Sports & Exercise*, 41(7), 1510-1530.

Chuan, H. H. (2007). Gender differences in health-related quality of life among the elderly in Taiwan. *Asian Journal of Health and Information Sciences*, 1.4: 366-376.

Ciddi, P. K., Yazgan, E. (2020). COVID-19 salgınında sosyal izolasyon sırasında fiziksel aktivite durumunun yaşam kalitesi üzerine etkisi. *İstanbul Ticaret Üniversitesi Sosyal Bilimler Dergisi*, 19(37), 262-279.

Cvecka, J., Tirpakova, V., Sedliak, M., Kern, H., Mayr, W., Hamar, D. (2015). Physical activity in elderly. *European Journal of Translational Myology*, 25(4), 249-252.

de Matos, D. G., Aidar, F. J., Almeida-Neto, P. F. D., Moreira, O. C., Souza, R. F. D., Marçal, A. C., ... Nunes-Silva, A. (2020). The impact of measures recommended by the government to limit the spread of coronavirus (COVID-19) on physical activity levels, quality of life, and mental health of Brazilians. *Sustainability*, 12(21), 9072.

DiPietro, L. (2001). Physical activity in aging: Changes in patterns and their relationship to health and function. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 56(suppl_2), 13-22.

Fraenkel, J. R., Wallen, N. E., Hyun, H. H. (2011). *How to Design and Evaluate Research in Education* (Eighth Edit). United State of America: Mc Graw Hill Companies, Inc.

Godin, G. (2011). The Godin-Shephard leisure-time physical activity questionnaire. *The Health & Fitness Journal of Canada*, 4(1), 18-22.

Godin, G., Shephard, R. J. (1985). A simple method to assess exercise behavior in the community. *Canadian Journal of Applied Sport Science*, 10(3), 141-146.

Goethals, L., Barth, N., Guyot, J., Hupin, D., Celarier, T., Bongue, B. (2020). Impact of home quarantine on physical activity among older adults living at home during the COVID-19 pandemic: Qualitative interview study. *JMIR Aging*, 3(1), e19007.

- Hamm, M. E., Brown, P. J., Karp, J. F., Lenard, E., Cameron, F., Dawdani, A., ... Lenze, E. J. (2020). Experiences of American older adults with pre-existing depression during the beginnings of the COVID-19 pandemic: A multicity, mixed-methods study. *The American Journal of Geriatric Psychiatry*, 28(9), 924-932.
- Herrera, M. S., Elgueta, R., Fernández, M. B., Giacomani, C., Leal, D., Marshall, P., ... Bustamante, F. (2021). A longitudinal study monitoring the quality of life in a national cohort of older adults in Chile before and during the COVID-19 outbreak. *BMC geriatrics*, 21(1), 1-12.
- Hollmann, W., Strüder, H. K., Tagarakis, C. V., King, G. (2007). Physical activity and the elderly. *European Journal of Preventive Cardiology*, 14(6), 730-739.
- Izquierdo, M., Duque, G., Morley, J. E. (2021). Physical activity guidelines for older people: Knowledge gaps and future directions. *The Lancet Healthy Longevity*, 2(6), e380-e383.
- Kirchengast, S., Haslinger, B. (2008). Gender differences in health-related quality of life among healthy aged and old-aged Austrians: Cross-sectional analysis. *Gender Medicine*, 5(3), 270-278.
- Krzepota, J., Sadowska, D., Biernat, E. (2018). Relationships between physical activity and quality of life in pregnant women in the second and third trimester. *International Journal of Environmental Research and Public Health*, 15(12), 2745.
- Lebrasseur, A., Fortin-Bédard, N., Lettre, J., Raymond, E., Bussi eres, E. L., Lapierre, N., ... Routhier, F. (2021). Impact of the COVID-19 pandemic on older adults: Rapid review. *JMIR Aging*, 4(2), e26474.
- Martins, R. B., Stahnke, D. N., Farias, R. R., Knorst, M. R., Kanan, J. H. C., Resende, T. D. L. (2019). Quality of life, physical activity, and functionality in older primary care users in Porto Alegre-RS. *Geriatrics, Gerontology and Aging*, 13(4), 190-197.
- McAuley, E., Konopack, J. F., Motl, R. W., Morris, K. S., Doerksen, S. E., Rosengren, K. R. (2006). Physical activity and quality of life in older adults: Influence of health status and self-efficacy. *Annals of Behavioral Medicine*, 31(1), 99-103.
- Ministry of Health/General Directorate of Public Health (MoH/DGPH)/Sağlık Bakanlığı Halk Sağlığı Genel Müdürlüğü [SBHSGM] (2014). *T rkiye fiziksel aktivite rehberi*. T.C. Sağlık Bakanlığı Yayın No 940. Ankara: Ankara: Kuban Matbaacılık Yayıncılık.
- Ministry of Health/General Directorate of Public Health (MoH/DGPH)/Sağlık Bakanlığı Halk Sağlığı Genel Müdürlüğü [SBHSGM] (2019). *T rkiye Beslenme ve Sağlık Araştırması (TBSA)*. T.C. Sağlık Bakanlığı Yayın No 1132. Tirađ Basım Yayın.
- P rez, L. M., Castellano-Tejedor, C., Cesari, M., Soto-Bagaria, L., Ars, J., Zambom-Ferraresi, F., ... Inzitari, M. (2021). Depressive symptoms, fatigue and social relationships influenced physical activity in frail older community-dwellers during the Spanish lockdown due to the Covid-19 pandemic. *International Journal of Environmental Research and Public Health*, 18(2), 808.
- Pernambuco, C. S., Rodrigues, B. M., Bezerra, J. C. P., Carrielo, A., Fernandes, A. D. D. O., Vale, R., Dantas, E. (2012). Quality of life, elderly and physical activity. *Health*, 4(2), 88-93.
- Pieh, C., Budimir, S., Probst, T. (2020). The effect of age, gender, income, work, and physical activity on mental health during coronavirus disease (COVID-19) lockdown in Austria. *Journal of Psychosomatic Research*, 136, 110186.
- Radwan, E., Radwan, A., Radwan, W. (2021). Challenges facing older adults during the COVID-19 outbreak. *European Journal of Environment and Public Health*, 5(1), em0059.
- Rejeski, W. J., Mihalko, S. L. (2001). Physical activity and quality of life in older adults. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 56(suppl_2), 23-35.

Repišti, S., Jovanović, N., Kuzman, M. R., Medved, S., Jerotić, S., Ribić, E., ... Russo, M. (2020). How to measure the impact of the COVID-19 pandemic on quality of life: COV19-QoL—the development, reliability and validity of a new scale. *Global Psychiatry*, 3(2), 201-210.

Slimani, M., Paravlic, A., Mbarek, F., Bragazzi, N. L., Tod, D. (2020). The relationship between physical activity and quality of life during the confinement induced by COVID-19 outbreak: A pilot study in Tunisia. *Frontiers in Psychology*, 11, 1882.

Sun, F., Norman, I. J., While, A. E. (2013). Physical activity in older people: A systematic review. *BMC Public Health*, 13(1), 1-17.

Suzuki, Y., Maeda, N., Hirado, D., Shirakawa, T., Urabe, Y. (2020). Physical activity changes and its risk factors among community-dwelling Japanese older adults during the COVID-19 epidemic: Associations with subjective well-being and health-related quality of life. *International Journal of Environmental Research and Public Health*, 17(18), 6591.

Suzuki, Y., Maeda, N., Hirado, D., Shirakawa, T., Urabe, Y. (2020). Physical activity changes and its risk factors among community-dwelling Japanese older adults during the COVID-19 epidemic: Associations with subjective well-being and health-related quality of life. *International Journal of Environmental Research and Public Health*, 17(18), 6591.

Sümen, A., Adibelli, D. (2021). Adaptation of the COV19-QoL Scale to Turkish culture: Its psychometric properties in diagnosed and undiagnosed individuals. *Death Studies*, 1-8.

T.C. Aile, Çalışma ve Sosyal Hizmetler Bakanlığı (2020). *Sokağa çıkma kısıtlaması bulunan / evde yaşayan 65 yaş ve üzeri yaşlılarımıza yönelik koronavirüs (covid-19) bilgilendirme rehberi-VI*. Retrieved August 20, 2021, from <https://www.ailevecalisma.gov.tr/media/46206/rehber-eyhgm-65-yas-uzeri-yaslilar-ve-kronik-hastalara-yonelik-koronavirus-bilgilendirme-rehberi.pdf>

Tang, X., Wu, C., Li, X., Song, Y., Yao, X., Wu, X., ... Lu, J. (2020). On the origin and continuing evolution of SARS-CoV-2. *National Science Review*, 7(6), 1012-1023.

Taylor, D. (2014). Physical activity is medicine for older adults. *Postgraduate Medical Journal*, 90(1059), 26-32.

Tiraphat, S., Peltzer, K., Thamma-Aphiphol, K., Suthisukon, K. (2017). The role of age-friendly environments on quality of life among Thai older adults. *International Journal of Environmental Research and Public Health*, 14(3), 282.

Vagetti, G. C., Barbosa, V. C., Moreira, N. B., Oliveira, V. D., Mazzardo, O., Campos, W. D. (2014). Association between physical activity and quality of life in the elderly: A systematic review, 2000-2012. *Brazilian Journal of Psychiatry*, 36, 76-88.

Van Dyck, D., Teychenne, M., McNaughton, S. A., De Bourdeaudhuij, I., Salmon, J. (2015). Relationship of the perceived social and physical environment with mental health-related quality of life in middle-aged and older adults: Mediating effects of physical activity. *PloS One*, 10(3), e0120475.

Visser, M., Schaap, L. A., Wijnhoven, H. A. (2020). Self-reported impact of the COVID-19 pandemic on nutrition and physical activity behaviour in Dutch older adults living independently. *Nutrients*, 12(12), 3708.

Walle-Hansen, M. M., Ranhoff, A. H., Mellingsæter, M., Wang-Hansen, M. S., Myrstad, M. (2021). Health-related quality of life, functional decline, and long-term mortality in older patients following hospitalisation due to COVID-19. *BMC Geriatrics*, 21(1), 1-10.

World Health Organization [WHO], (2018). *Global action plan on physical activity 2018-2030: More active people for a healthier world*. Geneva: World Health Organization, 2018.

World Health Organization [WHO], (2020a). *Physical Activity: Key facts*. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/physical-activity>.

World Health Organization [WHO], (2020b). *WHO guidelines on physical activity and sedentary behaviour*. Geneva: World Health Organization; 2020. Licence: CC BY-NC-SA 3.0 IGO.

World Health Organization [WHO], (2021). *Older people & COVID-19*. Retrieved August 20, 2021, from <https://www.who.int/teams/social-determinants-of-health/demographic-change-and-healthy-ageing/covid-19>
World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *British Journal of Sports Medicine*, 54(24), 1451-1462.

Xiong, J., Lipsitz, O., Nasri, F., Lui, L. M. W., Gill, H., Phan, L., McIntyre, R. S. (2020). Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *Journal of Affective Disorders*, 277, 55–64.

Yen, H. Y., Lin, L. J. (2018). Quality of life in older adults: Benefits from the productive engagement in physical activity. *Journal of Exercise Science & Fitness*, 16(2), 49-54.

Yerlisu-Lapa, T., Yağar, G. (2015, 28-30 Mayıs). Validity and reliability study of leisure time exercise questionnaire into Turkish [Oral Presentation]. 2nd international Sports Science, Tourism and Recreation Student Congress, Afyon Kocatepe University, Afyon.