



EFFECT OF THE RESIDENTIAL AREAS OF GERIATRICS LIVING IN TURKEY ON PHYSICAL ACTIVITY, DEPRESSION, AND QUALITY OF LIFE DURING THE COVID-19 PANDEMIC

COVID-19 PANDEMİSİ SÜRECİNDE TÜRKİYE'DE YAŞAYAN YAŞLI BİREYLERİN YAŞAM ALANLARININ FİZİKSEL AKTİVİTE, DEPRESYON VE YAŞAM KALİTESİNE ETKİSİ

Emre Şenocak^{1*}, Fatma Varlı², Aysel Yıldız Özer¹

¹Department of Physiotherapy and Rehabilitation, Faculty of Health Sciences, Marmara University, İstanbul, Turkey

²Department of Physiotherapy and Rehabilitation, Institute of Health Sciences, İstanbul University, İstanbul, Turkey

ABSTRACT

Objective: The quarantine precautions implemented during the new type of coronavirus epidemic caused some changes in the daily lives of geriatric individuals. This study aimed to examine whether living in rural or urban areas affects physical activity, depression, and quality of life (QoL) in Turkish geriatrics during pandemic.

Method: One hundred three geriatrics were assessed with the videoconferencing method, which was performed once. Participants were divided into two groups according to the area where they lived as rural (n:41) or urban (n:62). In addition, physical activity, presence of depression, and QoL of individuals were assessed with the Physical Activity Scale for the Elderly (PASE), Geriatric Depression Scale (GDS), and Short Form-36 (SF-36), respectively.

Results: According to the results, PASE ($p=0.677$), GDS ($p=0.742$), and all sub-dimensions of SF-36 ($p>0.05$ for all) except pain ($p=0.033$) of geriatrics were similar in both groups. Also, while there is a low-level relationship between the GDS scores of those living in rural areas and the sub-dimensions of SF-36 physical function ($r=-0.381$), mental health ($r=-0.381$), and social functionality ($r=-0.395$), there was a moderate correlation between the vitality ($r=-0.529$) and pain ($r=-0.536$) sub-dimensions. In addition, a strong correlation was found between GDS and the general health perception sub-dimension of SF-36 ($r=-0.611$).

Conclusion: The pandemic-induced quarantine precautions, which were put into effect throughout Turkey, negatively affected the daily life of all people, especially elderly individuals. Because of these precautions, the similarity of daily living activities of the elderly living in rural and urban areas may have caused similar physical activity, depression, and QoL scores.

Key Words: Covid-19, Geriatrics, Physical Activity, Depression

ÖZ

Amaç: Yeni tip koronavirüs salgını sırasında uygulanan karantina önlemleri, yaşlı bireylerin günlük yaşamlarında bazı değişikliklere neden oldu. Bu çalışma, pandemi süresince kırsal veya kentsel alanlarda yaşamayan Türkiye'deki yaşlı bireylerin fiziksel aktivite, depresyon ve yaşam kalitesini etkileyip etkilemediğini incelemeyi amaçlamıştır.

Yöntem: Yüz üç yaşlı birey, bir kez yapılan video konferans yöntemiyle değerlendirildi. Katılımcılar yaşadıkları bölgeye göre kırsal (n:41) ve kentsel (n:62) olarak iki gruba ayrıldı. Bireylerin fiziksel aktivite, depresyon varlığı ve yaşam kaliteleri sırasıyla Yaşlılar İçin Fiziksel Aktivite Ölçeği (YFAÖ), Geriatrik Depresyon Ölçeği (GDÖ) ve Kısa Form-36 (KF-36) ile değerlendirildi.

Bulgular: Sonuçlara göre yaşlıların YFAÖ ($p=0.677$), GDÖ ($p=0.742$) ve KF-36'nın ağrı ($p=0.033$) dışındaki tüm alt boyutları (tümü için $p>0.05$) her iki grupta benzerdi. Ayrıca kırsal kesimde yaşayanların GDÖ puanları ile KF-36 fiziksel işlev ($r=-0.381$), ruh sağlığı ($r=-0.381$) ve sosyal işlevsellik alt boyutları ($r=-0.395$) arasında düşük düzeyde bir ilişki varken, canlılık ($r=-0.529$) ve ağrı ($r=-0.536$) alt boyutları arasında orta düzeyde bir ilişki vardı. Ek olarak, KF-36'nın genel sağlık algısı alt boyutu ile GDÖ arasında güçlü bir ilişki bulundu ($r=-0.611$).

Sonuç: Türkiye genelinde uygulamaya konulan pandemi kaynaklı karantina önlemleri başta yaşlılar olmak üzere tüm insanların günlük yaşamını olumsuz etkiledi. Bu önlemler nedeniyle kırsal ve kentsel alanlarda yaşayan yaşlıların günlük yaşam aktivitelerinin benzerliği, benzer fiziksel aktivite, depresyon ve yaşam kalitesi skorlarının oluşmasına neden olmuş olabilir.

Anahtar Kelimeler: Covid-19, Yaşlı, Fiziksel Aktivite, Depresyon

INTRODUCTION

The new type of coronavirus (SARS-CoV 2) epidemic spread rapidly worldwide, and the disease was declared a global pandemic by the World Health Organization [1]. In this context, to prevent the transmission of the disease from person to person, a series of

precautions have been taken around the world, especially the provision of individual isolation [2]. With the prolongation of the pandemic process and the effect of the taken long-term precautions, the physical activity time of people has generally decreased. This situation paves the way for the emergence of secondary problems related to inactivity

Makale Bilgisi/Article Info

Yükleme tarihi/Submitted: 09.08.2022, **Revizyon isteği/Revision requested:** 26.09.2022, **Son düzenleme tarihi/Last revision received:** 31.10.2022, **Kabul/Accepted:** 02.11.2022

***Sorumlu yazar/Corresponding author:** Marmara University, Faculty of Health Sciences, Department of Physiotherapy and Rehabilitation, İstanbul, Turkey

¹Email: emre.senocak@windowslive.com, ²Email: fatmarevin.varli3634@gmail.com, ³Email: aysel.yildiz@marmara.edu.tr

in all age groups. It is known that physical inactivity causes a deterioration in mental and physical health, and mortality rates associated with diseases [3]. Muscle atrophy, decreased physical capacity, chronic fatigue, obesity, increased insulin resistance, dyslipidemia, and reduced quality of life are negative consequences of inactivity [4]. A decrease of the physical activity also increases the possibility of negative emotions such as anger, sadness, and disappointment and triggers depression [5]. Physiological and psychological changes that occur with aging have caused geriatric individuals, who are always in the high-risk group in terms of health parameters, to be affected much more by the pandemic [6].

The World Health Organization defines the health-related quality of life as individuals' perception of their position in life regarding their goals, expectations, standards, and concerns [7]. Conditions such as physical inadequacies, pain, chronic degenerative problems, cognitive deficiencies, social isolation, sleep quality, depression, and decreased life satisfaction due to aging are factors that negatively affect the quality of life [8, 9]. Depending on the multisystemic changes and diseases, that occur with the aging process, geriatric individuals are at high risk of having COVID-19 disease in more severe clinical perspective. The isolation decisions are, taken within the scope of protective measures, lead to decreased physical activity, loneliness, deterioration in mental and physical health, and a decrease in the quality of life in this population [10, 11].

Depression is characterized by a loss of interest in environmental events [12]. The conditions such as living alone, lack of social support, cognitive impairment or a chronic illness, apathy, and lack of social and physical activities are reported as risk factors for senile depression [13, 14]. The relation between regular physical activity, prevention of diseases, protection of the independence, improvement of general health perception, and improvement of quality of life is supported by strong evidence in the elderly [15].

Most of the elderly people live in rural areas of Turkey, and it is also known that different living areas affect the physical activity status of geriatrics [16]. Different results have been revealed regarding the effects of rural or urban life on depression in studies examining the depression levels of the elderly population of different countries [17]. This paper aimed to assess and compare the physical activity, depression levels, and quality of life of geriatrics who live in different environments during the pandemic process in Turkey.

METHOD

Survey Universe and Sampling

The population of the study consisted of the elderly living within the borders of the Republic of Turkey during the Covid-19 pandemic. To select the necessary samples from the population, a simple random sampling method was used over the family, close relatives, and social circles of the elderly individuals. Assessment was performed by a physiotherapist via online video conferencing link (Skype or Zoom). When the alpha error was 5%, the power of the study was 80%, the effect size was accepted as 0.50 (Cohen's medium effect size constant), the required number of participants was calculated as a 102 with G-power (v3.1.9.4) software [18].

Participants

Individuals over the age of 65 were invited to participate in this research via social media and volunteered to participate. Geriatrics with a Mini-Mental Test Score >24 points, without severe neurological, cardiac, respiratory, psychological, or orthopedic problems, and online communication skills were assessed within the scope of the study. Exclusion criteria were individuals with oncological issues, morbid obesity, and severe vision or hearing issues in the study.

Ethics

The study was planned as a cross-sectional study and approved by the Marmara University Non-Interventional Clinical Research Ethics Committee with 28.01.2021/16 protocol number. All geriatric participants were assessed using the video conference method to prevent the risk of transmission in the study. The research was performed according to the Declaration of Helsinki.

Assessments

Sociodemographic Form: Age, gender, marital status, people living with, educational level, presence of social-moral support, frequency of visitors, presence of chronic diseases, history of falling, and how participants perceive their age were recorded to the sociodemographic form, that created by authors.

Physical Activity Scale for the Elderly (PASE): The scale is assessing walking and light/moderate or vigorous physical activities of geriatrics in the last 7 days. The intensity, frequency, and duration of these activities are questioned. The PASE score is calculated according to the sum of the coefficients of the different activities that the participants have performed in the last week [19].

Geriatric Depression Scale (GDS): The scale is a self-reported and consists of 30 items. One point is given for negative answers and zero points for positive responses. A score of 0-11 indicates no depression, 11-14 indicates possible depression, ≥ 14 indicates the presence of depression [20].

Short Form 36 (SF-36): The scale is consisting of 36 items that make up eight sub-dimensions (physical function, social function, role limitations due to physical problems, role limitations due to emotional issues, mental health, vitality, pain, and general perception of health) for assessment of the quality of life. Evaluation of the scale differs for each section, and all sub-dimensions are evaluated between 0 and 100 points as the score approaches 100, it indicates good quality of life [21].

Statistical Analysis

All data were analyzed with the Statistical Package for the Social Sciences (SPSS v11) statistical program. Since the data is normally distributed, the difference between groups will be evaluated using the Independent Sample T-test, and the correlation between variables will be analyzed using Pearson's correlation. Pearson's chi-square test and Fisher's exact chi-square test were used for data analysis of variables with nominal evaluation. Significance level was accepted as $p < 0.05$.

RESULTS

One hundred three geriatric individuals (mean age: 69.38 ± 4.87 years) were included to this research. The percentage of participants living in rural was 39.80% and 60.10% in urban areas. The majority of the participants were women (Rural: 58.59%; Urban: 58.10%), and the groups had similar features in terms of gender ($p = 0.962$). Similarly, almost all geriatrics in both groups were morally supported by their families ($p = 0.710$). Although 87.80% of those living in rural areas and 90.30% of those living in urban areas stated a decrease in the frequency of visits due to the pandemic, the difference was not statistically significant ($p = 0.750$). Other demographics of the participants are shown in Table 1.

Depression ($p = 0.742$) and physical activity levels ($p = 0.677$) of elderly were similar for both groups and no significant difference ($p > 0.05$) was observed in other sub-dimensions of SF-36, except the pain ($p = 0.033$). All data on depression, physical activity, and quality of life variables between the groups are highlighted in Table 2.

When the results of the correlation analysis are examined, there was a low relationship between the depression levels of individuals living in rural areas and the SF-36 sub-dimensions of physical function ($r = -0.381$; $p = 0.014$), mental health ($r = -0.381$; $p = 0.014$) and social

functionality ($r=0.395$; $p=0.011$); moderate correlation between vitality ($r=-0.529$; $p<0.001$) and pain ($r=-0.536$; $p<0.001$); there was a strong correlation with general health perception ($r=-0.611$; $p<0.001$). A moderate correlation was observed between the physical activity and the general health perception ($r=-0.436$; $p=0.004$) sub-dimension of SF-36. Correlation analysis results of geriatrics living in urban areas revealed a low relationship between depression levels and the vitality ($r=-0.289$; $p=0.038$) and general health perception ($r=-0.332$; $p=0.016$) sub-dimensions of SF-36. Any relationship between physical activity and quality of life wasn't detected (Table 3).

Table 1. Characteristics of participants

Variable n (%)	Residential		P	
	Rural (n=41)	Urban (n=62)		
Gender	Woman	24 (58.50)	36 (58.10)	0.962 ^a
	Man	17 (41.50)	26 (41.90)	
Marital status	Married	29 (70.70)	50 (80.60)	0.416 ^a
	Single	2 (4.90)	1 (1.60)	
	Widow	10 (24.40)	11 (17.70)	
Living people	Alone	2 (4.90)	7 (11.30)	0.295 ^a
	Just spouse	14 (34.10)	22 (35.50)	
	Spouse and children	15 (36.60)	27 (43.50)	
	Just children	7 (17.10)	4 (6.50)	
Education status	Relatives	3 (7.30)	2 (3.20)	0.048 ^{a*}
	Literate	6 (14.60)	3 (4.80)	
	Primary school	28 (68.30)	38 (61.30)	
	High school	6 (14.60)	10 (16.10)	
Spiritual support of relatives	University and beyond	1 (2.40)	11 (17.70)	0.710 ^b
	Yes	37 (90.20)	58 (93.50)	
Decrease in visitor frequency	No	4 (9.80)	4 (6.50)	0.750 ^b
	Yes	36 (87.80)	56 (90.30)	
Frequency of visits	Often	13 (31.70)	17 (27.40)	0.343 ^a
	Seldom	28 (68.30)	42 (67.70)	
	None	0 (0.00)	3 (4.80)	
Presence of chronic disease	Yes	27 (65.90)	49 (79.00)	0.366 ^a
	No	14 (34.10)	13 (21.00)	
Fall history	Yes	3 (7.30)	1 (1.60)	0.299 ^b
	No	38 (92.70)	61 (98.40)	
Perception of age	Too Old	6 (14.60)	6 (9.70)	0.126 ^a
	Middle Aged	10 (24.40)	29 (46.80)	
	Old	17 (41.50)	16 (25.80)	
	Not Old	8 (19.50)	11 (17.70)	

*: Statistical Significant; ^a: Pearson Chi-Square Test, ^b: Fisher's Exact Chi-Square Test

Table 2. Comparison of the groups in terms of physical activity, psychological status and quality of life

Variable	Sub-dimension	Living Place		p
		Rural	Urban	
		Mean (SD)	Mean (SD)	
PASE	-	122.23 (23.16)	123.95 (18.53)	0.677
GDS	-	8.00 (3.91)	8.30 (5.02)	0.742
SF-36	PF	62.43 (20.28)	65.08 (19.98)	0.515
	PRD	31.70 (42.94)	29.83 (38.63)	0.819
	ERD	46.32 (33.23)	45.68 (35.83)	0.928
	V	47.92 (20.18)	48.62 (19.42)	0.860
	MH	54.53 (22.6)	58.19 (18.43)	0.373
	SF	45.73 (21.03)	51.41 (18.12)	0.147
	P	48.65 (20.25)	57.01 (18.55)	0.033*
GHP	46.34 (20.24)	45.88 (19.08)	0.908	

*: Statistical Significant, SD: Standard Deviation, GDS: Geriatric Depression Scale, PASE: Physical Activity Scale for the Elderly, SF-36: Short-Form 36, PF: Physical Function, PRD: Physical Role Difficulty, ERD: Emotional Role Difficulty, V: Vitality, MH: Mental Health, SF: Social Functioning, P: Pain, GHP: General Health Perception

DISCUSSION

The study aimed to examine the physical activity, depression levels, and quality of life of geriatric individuals living in Turkey's rural and urban areas during the pandemic. According to our general results, the physical activity and depression levels of geriatric individuals living in both rural and urban areas were similar. Although the quality of life of geriatric individuals in different living areas during the pandemic was similar, only the elderly living in urban areas had higher results in the pain sub-dimension. One of the study's main results is the existence of a relationship between more quality of life sub-dimensions and the depression scale of individuals living in rural areas than urban.

The literature reports that individuals living in rural areas were exposed to worse health conditions, decreased physical activity behaviors, low-income levels, and more social isolation than those living in cities in the pre-pandemic period [22, 23]. The process of getting used to the new normal that emerged with the pandemic has caused a change in the living standards and rules of all parts of society. A policy of isolation has been followed throughout the societies to reduce the transmission risk of the COVID-19 all over the world. The most affected group by this policy has been geriatrics, and physical and psychological such as inadequate movement, musculoskeletal problems, anxiety, depression increases day by day. These processes have increased irritability, emotional fluctuations, and have decreased quality of life [24, 25]. According to this article, it has been determined that the physical activity levels of the elderly living in different environments in Turkey are similarly low. A study reported that people living in rural areas had a higher level of physical activity than those living in urban areas during the pandemic period [26]. In a cross-sectional study conducted in Ireland, it was stated that the rate of compliance with physical activity recommendations in rural areas was one and a half times higher than those living in urban areas [27]. On the other hand, John et al. stated that living in rural areas have more obstacles to physical activity [28]. During the pandemic process, countries had to take precautions to protect their citizens in the risk group.

Table 3. The relationship between physical activity, psychological status and quality of life variables

Variable	Sub-dimension	Living Place							
		Rural				Rural			
		GDS		PASE		GDS		PASE	
		r	p	r	p	r	p	r	p
PASE	-	-	NS	-	-	-	NS	-	-
GDS	-	-	-	NS	-	-	-	-	NS
SF-36	PF	-0.381	0.014*	-	NS	-	NS	-	NS
	PRD	-	NS	-	NS	-	NS	-	NS
	ERD	-	NS	-	NS	-	NS	-	NS
	V	-0.529	0.001*	-	NS	-0.289	0.038*	-	NS
	MH	-0.381	0.014*	-	NS	-	NS	-	NS
	SF	-0.395	0.011*	-	NS	-	NS	-	NS
	P	-0.536	0.001*	-	NS	-	NS	-	NS
	GHP	-0.611	0.001*	-0.436	0.004*	-0.332	0.016*	-	NS

*: Statistical Significant, NS: Not significant ($p > 0.05$), GDS: Geriatric Depression Scale, PASE: Physical Activity Scale for the Elderly, SF-36: Short Form-36, PF: Physical Function, PRD: Physical Role Difficulty, ERD: Emotional Role Difficulty, V: Vitality, MH: Mental Health, SF: Social Functioning, P: Pain, GHP: General Health Perception

In Turkey, precautions, such as curfew and the prohibition of change of residence, restriction of access to public areas such as parks and seaside, and prevention of the use of public transportation vehicles, have caused restriction of physical activity in addition to social isolation. We think that the reason why the physical activity levels of the elderly residing in different regions are similar is due to the fact that the measures taken cover all individuals aged 65 and over living in every province of Turkey.

The highest mortality rates in geriatrics in the COVID-19 pandemic caused the elderly to be in the most disadvantaged position in this process, and this reality occurred many psychosocial problems [29]. Studies have shown that geriatrics in the vulnerable group have a severe emotional impact with quarantine measures and restrictions during COVID-19 [30]. Fiorillo et al. also stated that the social isolation that the elderly are exposed to during the pandemic is a major risk factor for developing anxiety and depression [31]. According to our results, the psychological states of the participants living in rural and urban areas were similar, and there was no presence of depression. Our results may be related to Turkish society's cultural and spiritual style. Because in the cultural form of Turkish society, the ties of respect; love, and compassion towards the elderly stand out, and the elderly have an important place in family life [32].

In our study, more than half of the elderly individuals lived with their spouse and children. At the same time, almost all the participants were supported morally by their relatives during the pandemic period. In addition, volunteers, charities, and law enforcement agencies across the country were primarily assigned to the needs of geriatric individuals over a long period. We think that this process directly affected the psychological states of our sample group in a positive manner and contributed to the emergence of different results from the literature.

In recent years, research on the quality of life of the elderly has increased, and the idea that quality of life is an essential part of health has been accepted [33]. In studies originating from Southeast Asia, advanced age, low education level, inadequate income, comorbidities, alcohol consumption, and high daily inactivity stand out as risk factors associated with quality of life [34].

According to our research results, although the quality of life of geriatric individuals living in rural and urban areas during the pandemic process was similar, both groups' quality of life scores was lower than the norm values of the Turkish population. The relationship between chronic diseases and quality of life is known [34].

In addition, it has been reported that loneliness, which directly affects the quality of life, triggers depressive symptoms and cognitive impairments [35]. In our study, most individuals in both groups lived with family members and had non-communicable diseases. In this aspect, the groups were similar in terms of the family environmental conditions in which they lived together.

The literature reports that the increase in the urbanization level of the place where the elderly population lives causes an increase in the quality of life of elder individuals [34]. Contrary to the literature, it was seen that the place of living did not disclose a difference in the quality of life in this paper. The probable reason is that calls for "Stay at Home Turkey" and the migration of some elderly population from the cities to their homes in rural areas to try to stay away from the disease.

Factors such as low income, retirement, chronic diseases, physiological changes in body functions, loss of social support, and loneliness directly affect the quality of life of the elderly in society [36]. When the results of our study are examined, stand out a negative correlation between the depression levels and quality of life of individuals living in rural areas.

The literature has reported that education level, social support, marital status, and decreased friend visits affect the psychological state of individuals [37-39]. The negative impact of the psychological state of the person due to the above items will also negatively affect the perception of quality of life.

The World Health Organization defines a close relationship between physical and mental functions and the level of social participation, which expresses participation in religious, sports, cultural, entertainment, and political activities and social participation positively affects the quality of life and cognitive functions [40]. Therefore, decreased social participation in the pandemic has negatively affected individuals' physical and mental health.

Although the demographic characteristics are similar in our study sample, it is seen that the majority of the elderly living in rural areas live with their relatives, and visitor acceptance is more frequent due to open space opportunities. This situation was allowed the elderly in rural areas to have a more comprehensive social network. More open space opportunities in rural areas have made pandemic measures more flexible. This situation may have contributed to their quality of life with a positive effect on their psychological state.

Limitations of the Study

Although our study's limitation is that the chronic disease history of the participants was not questioned in detail, our exclusion criteria support the reliability of our results.

CONCLUSION

The primary purpose of this study was to compare the physical activity levels, psychological states, and quality of life of geriatric individuals living in rural and urban areas of Turkey during the coronavirus pandemic.

When the results were examined for this purpose, there was no difference in physical activity, depression, and quality of life of the elderly living in rural and urban areas during the pandemic.

In Turkish society, the older people in rural areas are more physically active. However, the lifestyles of geriatrics living in rural and urban areas were affected similar due to the compulsory new world order revealed by the pandemic process and family members' instinct to protect geriatrics. These results are valuable because they are different from other literature data and reflect our society even though our sample group is small. With the awareness that the decrease in physical activity level constitutes an important risk factor for chronic health problems in the near future for both groups, prioritizing this issue in preventive approaches is another important point that should be addressed within the scope of health policies.

Ethical Approval: 2021/16, Marmara University Non-Interventional Clinical Research Ethics Committee

Conflict of Interest: The authors have no conflicts of interest to declare.

Funding: None.

Acknowledgements: None.

Author Contribution: Concept: EŞ; Desing: AYÖ,EŞ; Data collecting: FV; Statistical analysis: EŞ; Literature review: FV,EŞ; Writing: EŞ,FV,AYÖ; Critical review: AYÖ.

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