Physical activity level and quality of life in older women during the pandemic[1]

Nivel de actividad física y calidad de vida en mujeres mayores durante la pandemia

Physical activity level and quality of life in older women during the pandemic

[Research Article]

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Abstract

The aim of the study was to identify the level of physical activity and quality of life in elderly women during the pandemic. A total of 2,269 women took part (X= 66.46 ± 5.73 years). A sociodemographic questionnaire, the WHOQOL-Old for quality of life and the Baecke questionnaire for level of physical activity were used. The study population was 57.14% mulatto; 35.71% single; 40% literate; 50% retired; 60% with a monthly income ≤ 2 salaries (≤ US$200.00). 77.14% reported having some pre-established illness or continuous use of medication, and 86% had a sick parent. The results show that 90% of the participants had a low physical activity index (PAI) (X= 4.44 ± 3.79; PAI ≤ 9.11) and

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61.4% had an average overall quality of life (OHQoL) (X= 13.56 ± 1.75; OHQoL between 10 - 14). It was concluded that the pandemic has a negative effect on the physical activity of elderly women, causing a decline in quality of life.
Keywords: quality of life indicators, sedentary behavior, physical exercise, aging, pandemics.

Resumen

El objetivo del estudio era identificar el nivel de actividad física y la calidad de vida en mujeres de edad avanzada durante la pandemia. Participaron 2.269 mujeres (X= 66.46 ± 5.73 años). Se utilizó un cuestionario sociodemográfico, el WHOQOL-Old para la calidad de vida y el cuestionario de Baecke para el nivel de actividad física. La población de estudio fue 57.14% mulata; 35.71% soltera; 40% alfabetizada; 50% jubilada; 60% con ingreso mensual ≤ 2 sueldos (≤ US$200,00). El 77.14% declaró tener alguna enfermedad preestablecida o uso continuado de medicación, y el 86% tenía un progenitor enfermo. Los resultados muestran que el 90% de los participantes tenía un índice de actividad física (IAF) bajo (X= 4.44 ± 3.79; IAF ≤ 9.11) y el 61,4% tenía una calidad de vida global (CVG) media (X= 13.56 ± 1.75; CVG entre 10 - 14). Se concluyó que la pandemia tiene un efecto negativo sobre la actividad física de las mujeres mayores, causando una disminución de la calidad de vida.
Palabras clave: indicadores de calidad de vida; sedentarismo, ejercicio físico, envejecimiento, pandemias.

Resumo

O estudo teve como objetivo identificar o nível de atividade física e a qualidade de vida em mulheres idosas durante a pandemia. 2.269 mulheres (X= 66.46 ± 5.73 anos) participaram da avaliação e foram utilizados um questionário sociodemográfico, o WHOQOL-Old e o Baecke para a qualidade de vida nível de atividade física respectivamente. 57.14% da população era mulata; 35.71% solteira; 40% alfabetizada; 50% aposentada; 60% com renda mensal ≤ 2 salários (≤ US$ 200,00). 77.14% com alguma doença pré-estabelecida ou uso contínuo de medicamentos e 86% tinham um familiar doente. Os resultados mostraram que 90% dos participantes tinham um baixo índice de atividade física (PAI) (X= 4.44 ± 3.79; PAI ≤ 9.11) e 61,4% tinham uma qualidade de vida global (GQL) média (X= 13.56 ± 1.75; GQL entre 10 - 14). Concluiu-se que a pandemia teve efeito negativo sobre a atividade física das mulheres idosas, influenciando na qualidade de vida.

Palavras-chave: indicadores de qualidade de vida, comportamento sedentário, exercício físico, envelhecimento, pandemias.

Introduction

A change in global demographics has occurred over the last few decades, characterized by absolute growth of the older population, as well as an increase in the proportion of this age group in several countries. In 2020, there were around 1.1 billion older people in the world, a number forecast to increase to 3.1 billion by 2100. These figures for Brazil were 29.9 million in 2020 and 72.4 million for 2100 (Gobbens & Remmen, 2019).

However, healthy ageing is important for public health as life expectancy increases, making populations older. Word Population Ageing 2015 forecasts that the number of persons older than 60 years will double between 2015 and 2050. In the United States, older adults represent 22% of the

population and 25% of Europeans, displaying a 3% yearly growth rate, and are expected to account for 25% of the global population by 2050, except in Africa (Goetz et al., 2019).

Aging is a process of complex multifactorial organic changes during one's lifetime, but becomes more evident when individuals are near the age of 60 years, due to the significant accumulation of molecular and cellular damage and gradual loss of physiological reserves (Mari et al., 2016).

According to Nabuco et al. (2019), aging is associated with mortality and accompanied by a progressive decline in genetic characteristics of keletal muscle strength and mass, along with an increase in fat mass, affecting health, functional autonomy and quality of life (QoL). It is therefore important to develop strategies to preserve skeletal muscle strength and mass throughout the ageing process.

Functional capacity is an important indicator of the degree of independence enjoyed by older adults. Although functional decline is usually linked to aging processes, it cannot be attributed to normal aging, but to more frequent incapacities, such as cognitive impairment, postural instabiliity, immobility, incontinence, communication difficulties and iatrogenesis (Cabral et al., 2021).

The world faced a serious threat called Severe Acute Respiratory Syndrome Coronavirus-2 (Sars-Cov-2) due to Coronavirus-19, which caused acute infection (Zhang et al., 2020). The elderly have been at the center of discussions about the pandemic and have required specialized attention to minimize the disastrous effects of the disease, with this issue being the focus of studies in the most important research centers (Fiorillo & Gorwood, 2020).

The period of home confinement has seen a reduction in social participation and physical activity , causing great concern for older people, as they are typically more inactive than younger people and more susceptible to chronic diseases (Bentlage et al., 2020). It was therefore imortant to continue physical activity during the pandemic, while observing measures to ensure safety. In the city of Wuhan, China, the initial epicenter of the disease, people were advised to continue physical activity at home (Zhang et al., 2020).

According to Krinski et al. (2010), the immunological system protects the body against infection, recognizing and eliminating a series of invading microorganisms. In this respect, Pitanga et al. (2020) reported that a constant change in physical exercise intensity may cause a functional decline in the immunological system, leaving the body vulnerable to viruses and bacteria.

Felipe et al., (2020) found that symptoms and diseases related to human aging and menopause may be minimized by mild to vigorous physical, aerobic, anaerobic exercises and a combination of these, thereby favoring QoL, one of the factors for an increase or decrease in longevity.

Physical activity, indicated by different health professionals, prevents the onset of diseases related to bad habits and preserves people's health. Studies describe the benefits of physical activity

to health (Layne et al., 2017), especially the cardiovascular, metabolic and immunological systems. According to Tremblay et al. (2017), studies report that regular physical activity and a reduction in sedentary behavior, except for the sleeping period, are related to health, essential to revigorate the body and directly influence the QoL of older adults.

The scientific literature has advanced in terms of demonstrating the effects of physical activity on human health, which enables older people to improve their quality of life (Barbosa Rezende et al., 2015).

The term quality of life has been defined differently over the years, based on three fundamental principles: functional capacity, socioeconomic level and satisfaction, and may also be related to physical capacity, emotional state, social interaction, intellectual situation and self-perceived health (Correa et al., 2013).

In this respect, QoL is directly related to health, physical aptitude and functional autonomy, and one of the aspects responsible for the increase or decrease in the longevity of the population (Fleck et al., 2003).

Thus, the aim of the present study is to determine the physical activity level and quality of life of older adults, according to the following guiding question: how does the COVID19 pandemic influence the physical activity level and quality of life of older adults?

Methods

This is a qualitative descriptive cross-sectional study whose population included elderly women aged 60 and over, who until February 2020 belonged to social and physical activity programs. The sample consisted of 2.269 volunteers who agreed to complete the data collection instruments.

The study was submitted to and approved by the Research Ethics Committee of Tiradentes University, under protocol nº 3.936.886, issued on 03/26/2020

For data collection, protocols duly validated and transcribed for the electronic questionnaire format were used to comply with sanitary norms, thereby preventing physical contact or close approximation between the examiner and participants. Thus, a sociodemographc questionnaire with 8 close-ended questions was applied to characterize the sample.

The WHOQOL-Old quality of life questionnaire, adapted for elderly people, was used, consisting of 24 questions on a 5-point Likert scale, attributed to six domains: Domain 1 – Sensory functioning (SF); Domain 2 – Autonomy (AUT); Domain 3 – Past, present and future activities (PPF); Domain 4 – Social participation (SOP); Domain 5 - Death and dying (DAD) and Domain 6 - Intimacy (INT). The results obtained were classified by scores, with those between 14.1 and 20 corresponding to high QoL, between 11 and 14, medium, and below 10.9 low. This instrument was validated by Fleck et al. (2003) for use in Brazil.

In order to identify physical activity level, the Baecke questionnaire adapted to older adults was used. The instrument analyzes occupational, leisure and locomotion physical activity, adopting the classification of the physical activity index (PAI) as high (> 16.18), moderate (9.12 – 16.17) or low (≤ 9.11). The Portuguese version of this questionnaire was validated by (Ueno, 2013).

The inclusion criterion was women aged 60 years or older who participated in social programs and physical activity up to February 2020. No exclusion criteria were established, given that the questionnaires could only be resent automatically when completely filled out.

The data were analyzed using Excel 2013 and presented as mean, standard deviation, minimum and maximum values, measures of central tendency and dispersion.

Results and discussion

How the questionnaires were sent, and how many were incomplete and discarded were described.

The older women of the study (n = 2.269) belonged to a group from the Augusto Franco residential complex, a gated community and a church, in the Farolândia district of Aracaju, Sergipe state (SE). They were between 60 and 83 years old, with an average of 66.46 years (SD ± 5.73). The sociodemographic data collected by means of an anamnesis can be seen in Table 1.

Table 1 – Sociodemographic profile of the older women taking part in the study.

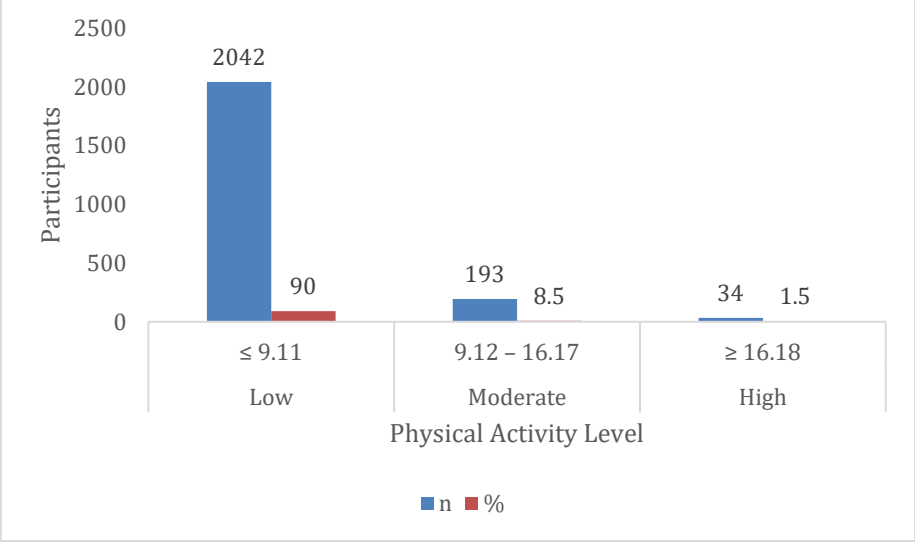
SOCIODEMOGRAPHIC DATA	**n = 2.269**	
ETHNICITY	**n**	**%**
Mulatto	1.297	57.14%
White	648	28.57%
Black	324	14.29%
MARITAL STATUS		
Single	810	35.71%
Married	745	32.85%
Widow	422	18.58%
Divorced	292	12.86%
SCHOOLING		
None	120	5.29%
Incomplete elementary	1,021	45.00%
Incomplete secondary	421	18.57%
Incomplete university	156	6.86%
Complete secondary	389	17.14%
Complete university	162	7.14%
DAILY ACTIVITY		
Work/Family	130	5.71%
Retired	1.134	50.00%
Homemaker	1.005	44.29%
MONTHLY FAMILY INCOME		

Up to 2 minimum monthly wages*	1.361	60.00%
2 to 4	746	32.86%
4 to 10	130	5.71%
10 to 20	32	1.43%
DISEASES IN THE FAMILY		
Yes	1.653	72.86%
No	616	27.14%
PRE-EXISTING DISEASES AND CONTROLLED DRUGS		
Has a disease or uses a controlled drug	1.750	77.14%
Does not have a disease or use a controlled drug	519	22.86%
SELF-CONTROL		
Very bad	65	2.87%
Bad	162	7.14%
Fair	1.102	48.57%
Good	583	25.71%
Excellent	357	15.71%

Source: The author (2021)
*minimum monthly wage ≈ US$200.00

Figure 1 shows the physical activity level of the study group using descriptive statistics.

Figure 1 – Classification of the level of physical activity of elderly women participating in the study during the novel coronavirus pandemic.



Legend: n – study participants; % - percentage of participants
Source: The author (2021)

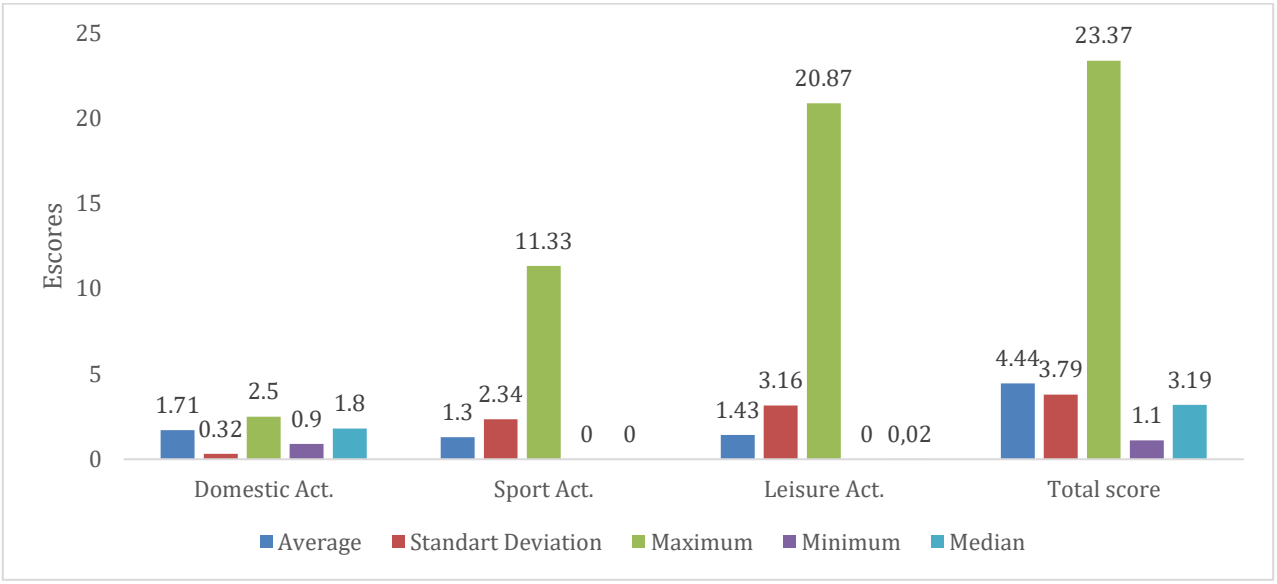
The average physical activity level of the study participants was 4.44 (SD±3.79), which classifies the group as low, as shown in Figure 2. The total score is composed of 3 other parameters: domestic, sport and leisure activities, which obtained average scores of 1.71 (SD±0.32), 1.3 (SD±22.34), and 1.43 (SD ±3.16), respectively.

Richardson et al. (2021), in a study of elderly people, identified a reduction in total physical activity caused by increased sitting time duting the peak of the COVID-19 pandemic.

In the United Kingdom the influence of six weeks of social distancing on the physical activity levels, perceived physical function and mood of 117 aging adults, observing longer sedentary time and decrease in vigorous physical activity, but an increase in walking and moderate physical activity, which may be attributed to the good climate conditions in the United Kingdom during this period (Perlman, 2020).

These results corroborate the present study, given that the vast majority of participants exhibited low physical activity level, and among the activities performed, domestic activities obtained the best result. This may be associated with the longer time spent at home and decline in social and physical group activities for older adults.

Figure 2: Level of physical activity of elderly women during the novel coronavirus pandemic.



Legend: Act.: Activity; Total score: physical activity level
Source: The author (2021)

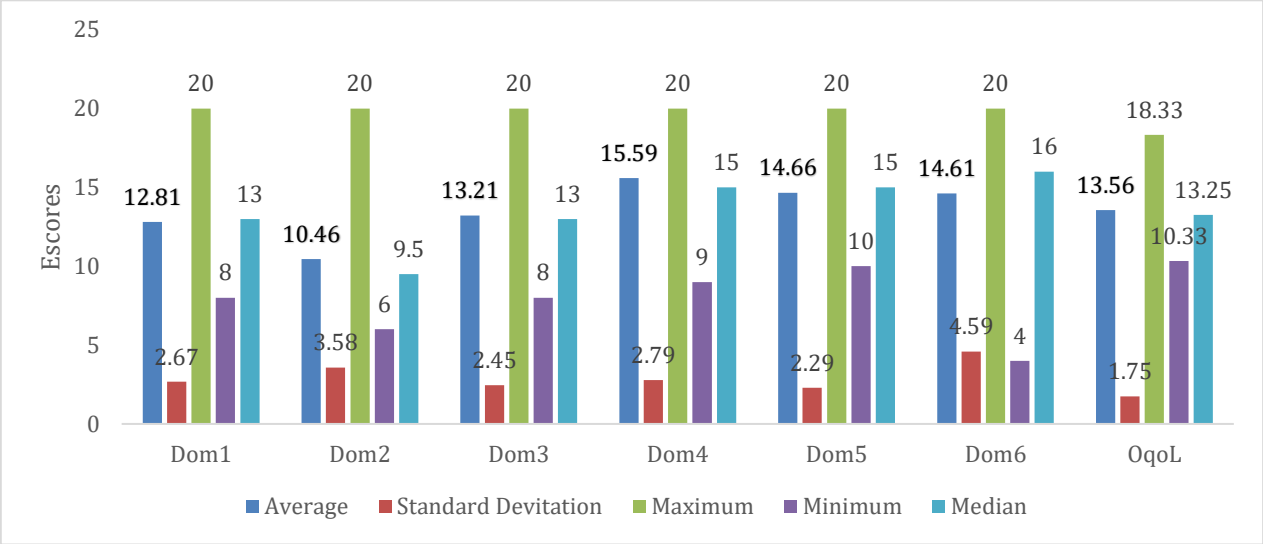
As show in figure 3, the overall quality of life (QoL) of the elderly participated in the study indicated an average of (13.56 ± 1.75), with domain 5 (death and dying) obtaining the best result (14.66 ± 2.29) and domain 2 (autonomy) the worst (10.46 ± 3.58).

The emotional state of the study participants at assessment was affected by social isolation, where many were separated from their families, thereby influencing the QoL aspects analyzed.

When investigating the confinement of people in the current context, it is important to consider the influence and toxicity of social media on older individuals, who spend a large part of their day watching television or on their cell phones, constantly exposed to coronavirus issues throughout the day (Brooks et al., 2020).

Social distancing changes the routines of older persons, bombarding them with bleak and worrisome information, with a negative effect on their QoL. Being confined in their homes also reduces functional activity, decreasing autonomy and causing dependence.

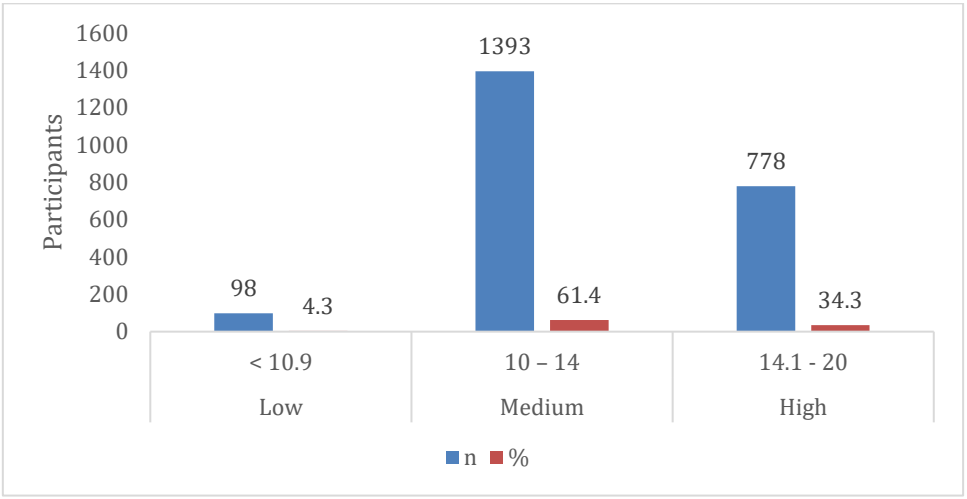
Figure 3: Overall quality of life of elderly women during the novel coronavirus pandemic.



Legend: Dom: Domain; OQoL: Overall quality of life
Source: The author (2021)

Figure 4 shows the quality of life of the study participants.

Figure 4 – Classification of the quality of life of elderly women during the novel coronavirus pandemic.



Legend: n – study participants; % - percentage of participants
Source: The author (2021)

Worrisome factors such as changes associated with sleep patterns are commonly related to psychogenic dysfunctions. Sleep quality is directly related to QoL, and it is understandable that older adults who report sleep disorders are more vulnerable, often associated with health problems such as

depression, emotional instability, distorted health perception and the presence of chronic diseases (Lopes & Roncalli, 2020).

This factor may occur due to the concern that the coronavirus pandemic raises, with a direct negative effect on QoL, given that aspects such as autonomy and sensory functioning, among other QoL areas are adversely affected.

After the end of the COVID-19 outbreak, it will be possible to observe the psychological damage caused to the population, showing that this mental "wear and tear" can be compared to the same feelings arising from natural catastrophes and war scenarios, where society experiences stress, tension, anxiety, frustration, insecurity related to the future, and fear of death (Fiorillo & Gorwood, 2020).

Table 2 – Correlation between PA level and QvL domains in elderly women during the novel coronavirus pandemic.

Domains	r	p
Sensory Skills	0.18	0.13
Autonomy	-0.04	0.68
Past, present and future activity	-0.04	0.70
Social	0.02	0.82
Death or Dying	0.01	0.92
Intimacy	-0.02	0.81

Source: The author (2021)

The scientific literature contains a large number of studies underscoring that physical activity in diverse modalities is essential to QoL. Table 6 shows no statistically significant value for this correlation, but demonstrates the sociodemographic profile of a group of older adults as well as the QoL domains in the study group.

A clinical trial conducted by Brandão et al. (2018) in Senhor do Bonfim, Bahia state, Brazil determined the effect of an exercise program aimed at daily activitiesat home on the QoL of 222 elderly people who do not exercise. The intervention lasted 3 months and the WHOQOL-OLD questionnaire was also used to assess QoL. The results showed a significant improvement in the participants QoL between the pre- and post-tests.

A cross-sectional study assessed the quality of life of 1492 Dutch aged 50 years or older using the WHOQOL-OLD questionnaire. The sample consisted of 60% men, 70% married people, and 44% with a high school education. The best result was in the sensory skill domain, followed by social participation, past, present and future activities, death and dying, autonomy and intimacy. The study found that women generally obtained better results in sensory skills, autonomy and social participation, and worse outcomes in the death and dying domain. The older the individual, the worse

the results in sensory skills, autonomy, social participation and intimacy. Married individuals and those earning higher incomes obtained better overall indices (Gobbens & Remmen, 2019).

Soósová, (2016) also observed better QoL in older adults with higher schooling in the autonomy domain of the WHOQOL-OLD questionaire, but lower QoL in the death and dying domain. He also found that the older the individual the worse their quality of life, which also declined in people living alone.

Compared to the abovementioned studies, the participants of the present study differ only in that they are women, individuals who exhibit greater social participation, the domain with the best score. This may have been influenced by the fact that participation was voluntary. On the other hand, the study group had predominantly low education and income levels, and 77.4% suffered from a disease or used medication on a continuous basis. All of these aspects may have contributed to the medium quality of life score, especially autonomy, with the worst result, which is directly related to an individual's physical activity level.

Conclusion

The evidence collected here confirms the importance of older adults' continuing physical and social activities during the COVID-19 pandemic. The older women participating in the present study showed a low physical activity level, with domestic activities contributing most. For quality of life, the group was classified as medium, albeit demonstrating a good relation when the issue is death and dying; however, in terms of autonomy, the older women exhibited low quality.

As such, it can be concluded that the reduction in social and leisure activities during the new coronavirus epidemic had a negative influence on the physical activity level and consequently the quality of life of the elderly people in the present study.

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