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COVID-19 Pandemisinde Sağlık Personelinde Fiziksel Aktivite Düzeyindeki Değişim, Seçilmiş Bir Hastane Örneği

Changes in Physical Activity Levels in Healthcare Personnel During the COVID-19 Pandemic, Selected One Hospital Example

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COVID-19 Pandemisinde Sağlık Personelinde Fiziksel Aktivite Düzeyindeki Değişim, Bir Devlet Hastanesi Örneği

Öz

Amaç: Bu araştırmada seçilmiş bir hastanede görev yapan sağlık personelinin COVID-19 salgını öncesi ve salgın sırasındaki fiziksel aktivite düzeylerinde gerçekleşen değişimin incelenmesi amaçlanmıştır.

Materyal ve Metot: Araştırmamız bir devlet Hastanesi'nde görev yapan 385 kişi ile 2021 yılı ağustos ayında gerçekleştirilen tanımlayıcı bir araştırmadır. Veriler, hazırlanan Sosyodemografik Veri Formu, Uluslararası Fiziksel Aktivite Anketi, Warwick-Edinburgh Mental İyi Oluş Ölçeği kullanılarak yüz yüze görüşme ve çevrimiçi anket yöntemiyle toplanmıştır.

Bulgular: Katılımcıların yaş ortalaması 33,4 (SS:9,9) yıldı. Uluslararası fiziksel aktivite anketi puanları karşılaştırıldığında, Şiddetli Fiziksel Aktivite (salgın öncesi:1440, salgın sırasında:960) (p=0,006), Orta Şiddetli Fiziksel Aktivite (salgın öncesi:510 salgın sırasında:480) (p<0,001), Yürüme (salgın öncesi:1188, salgın sırasında:990) (p<0,001), Oturma (salgın öncesi:450, salgın sırasında:495) (p<0,001) ve Fiziksel Aktivite Toplam puan (salgın öncesi:2304, salgın sırasında:1566) (p<0,001) ortanca değerleri arasında istatistiksel açıdan anlamlı fark elde edilmiştir.

Sonuç: Pandemi sürecinin sağlık çalışanlarının fiziksel aktivite düzeylerini azalttığı görülmüştür. Bulaşıcı olmayan hastalıkların bir risk faktörü olan fiziksel inaktivitenin pandemi nedeniyle artarak neden olacağı sorunlar yakından incelenmelidir. Sağlık çalışanlarının pandemi döneminde azalan fiziksel aktivitelerini artırmaya yönelik çalışmalar gerçekleştirilmelidir.

Anahtar Kelimeler: Fiziksel aktivite, pandemi, sağlık çalışanları.

Change in Physical Activity Level of Healthcare Personnel During the COVID-19 Pandemic, A State Hospital Example

Abstract

Objective: This study aimed to examine the change in the physical activity levels of healthcare personnel working in a selected hospital before and during the COVID-19 pandemic.

Materials and Methods: Throughout August 2021, a descriptive research including 385 patients from XXX State Hospital was carried out. The study collected data with face-to-face interviews, and online questionnaires using the Sociodemographic Data Form, the International Physical Activity Questionnaire, and the Warwick-Edinburgh Mental Well-Being Scale.

Results: The participants' average age was 33.4 (SD: 9.9) years. When comparing International Physical Activity Questionnaire scores, statistically significant differences were observed in the median values of Vigorous Physical Activity (pre-pandemic: 1440, during pandemic: 960) (p=0.006), Moderate Physical Activity (pre-pandemic: 510, during pandemic: 480) (p<0.001), Walking (pre-pandemic: 1188, during pandemic: 990) (p<0.001), Sitting (pre-pandemic: 450, during pandemic: 495) (p<0.001), and Total Physical Activity score (pre-pandemic: 2304, during pandemic: 1566) (p<0.001).

Conclusions: It is evident that the pandemic has led to a reduction in the physical activity levels of healthcare professionals. The increased risk of non-communicable diseases due to physical inactivity during the pandemic should be closely examined for potential issues. Efforts should be made to implement interventions aimed at increasing the decreased physical activity levels of healthcare workers during the pandemic.

Keywords: Health workers, pandemic, physical activity.

Introduction

COVID-19 (Coronavirus Disease 2019) is a respiratory failure caused by the pathogen called SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2) (Zhou et al., 2020). The WHO (World Health Organization) labelled it a pandemic on March 11, 2020, because of its rapid worldwide spread (WHO, 2020; İnal İnce et al., 2020). While COVID-19 symptoms differ from person to person, frequent complaints include breathing problems, a high temperature, a cough, exhaustion, and a loss of taste and/or smell (Ye et al., 2020). In addition to its impacts on physical health, COVID-19 has significantly impacted people's mental health thanks to its effects on social, political, economic, and cultural factors (Chodkiewicz et al., 2020). The pandemic and quarantine measures have caused psychosocial problems, such as stress, fear, and anxiety, in many individuals (Ahorsu et al., 2022; Brooks et al., 2020). Healthcare workers are among the groups most affected by various infectious diseases (Cetintepe & İlhan, 2020). During the SARS outbreak in China and Taiwan, healthcare workers became increasingly reluctant to work. Their anxiety levels increased when their colleagues were infected with or died from the epidemic (Su et al., 2007). To reduce COVID-19 cases, social distancing and stay-at-home advisories have been implemented worldwide, with some countries, including Türkiye, imposing curfews in response to increasing cases (Guo et al., 2020). Quarantine measures have changed in individuals' mental states, leading to a sedentary lifestyle and reduced physical activity levels (Christensen et al., 2022; Mattioli & Puviani, 2020). Regular physical activity is essential for protecting both mental and physical health during the pandemic, and WHO has frequently emphasized this issue (Lippi et al., 2020; WHO, 2020). Therefore, the priority during this public health crisis is to protect and improve current health and regulate physical activity (Temel et al., 2010; Zengin Alpözgen & Razak Özdinçler, 2016).

The study aimed to examine how the COVID-19 pandemic affected physical activity among health workers and the variables that influenced it.

Materials and Methods

Ethics Committee Approval: A local Scientific Research Ethics Committee approved this study with registration number 21/449 on 30.07.2021. All procedures have been carried out by the Helsinki Declaration.

Study Design, Location, and Sample: This study is a descriptive study conducted at a State Hospital during August 2021. The aim was to reach the entire population 800 participants, and the results were evaluated based on the data collected from 385 (%48,1) participants. The study was conducted with all employees in the hospital, including cleaning and security personnel and 60.2% (n=232) of all data were collected via QR code.

Variables: The dependent variables in this study were physical activity and mental health status, while the independent variables included age, gender, education level, smoking status, working duration in the health sector, receiving psychological support, and having been diagnosed with COVID-19.

Data Collection Tools: Printed forms were distributed to the participants who said they could fill out the interview forms immediately and were collected after a while. To the participants who were not immediately available, we distributed the QR codes that we had previously prepared and directed them to the online interview form. Using this code, they accessed and filled out the interview form. The hospital was visited twice, two days apart, and a written form or QR code was distributed to all actively working personnel.

Sociodemographic Data Form: In the research, it was utilised the Sociodemographic Data Form as a data-gathering instrument to document each case's demographic details.

International Physical Activity Questionnaire (IPAQ): The IPAQ was used in this study to examine the levels of physical activity prior to and following the start of COVID-19. The questionnaire, developed by Craig et al. (Craig et al., 2003) in 2003, was validated and tested for reliability in Turkish by Öztürk (Öztürk, 2005) in 2005. The seven questions in the short-form IPAQ measure sedentary behavior, low-intensity (walking), moderate-intensity, and vigorous physical activity in the past seven days. The time spent in sedentary behavior is separately calculated, and the sum of the length and frequency of walking, moderate-intensity, and intense activities yields the final score. The number of days, minutes, and the MET value of the activity are multiplied to get the MET-minute/week score, which is used to determine the degree of physical activity. The lowest and highest possible

scores depend on the individual's activity levels. In theory, the lowest score would be zero if the person reports no physical activity, and the highest score would be unlimited, as it depends on the duration and intensity of the reported activities. However, practically, extremely high scores are rare, and individual scores are influenced by the reported duration and intensity of various physical activities over a week.

Warwick-Edinburgh Mental Well-Being Scale (WEMWBS): The study employed the WEMWBS to assess the mental health status of the participants. Tennant et al. (Tennant et al., 2007) created the scale in the beginning to assess people's mental health. In 2015, Keldal (Keldal, 2015) translated it into Turkish, focusing on the advantages of mental health, including psychological and subjective well-being. The validity and reliability of the scale were established through studies involving individuals aged 16 years and over, with Cronbach's Alpha value found to be 0.92. The 14-item, 5-point Likert-type scale has a minimum score of 14 and a maximum score of 70. It has a range of 1 (strongly disagree) to 5 (completely agree). Higher scores represent higher levels of mental health (Keldal, 2015).

Statistical Analysis: The IBM SPSS V23 software was used to analyze the study's data. The normal distribution of the data was assessed using the Kolmogorov-Smirnov test. The Wilcoxon test was employed to compare non-normally distributed data from two-time points, while Spearman's rho correlation coefficient was utilized to evaluate the relationship between non-normally distributed scale scores. The Mann-Whitney U test was used to compare non-normally distributed scale scores between two groups, while the Kruskal-Wallis H test was employed for comparing non-normally distributed data among three or more groups. Multiple comparisons were made using Dunn's test. The significance level was set at $p<0.05$.

Results

The study involved 385 participants, including 129 men (33.5%) and 256 women (66.5%), with an average age of 33.4 (± 9.9) years. The average working time of participants in the health sector was 9.6 years. Among the participants, 50.6% had an undergraduate degree, while 2.3% only had a primary education. Approximately 37.1% of the participants were smokers. While 81.3% have never received psychological support, at least 4.4% of participants received psychological support during the pandemic. Moreover, 48.8% of the participants had COVID-19 diagnoses or were suspected of having the condition (Table 1).

Table 1 Demographic information of 385 participants at the public hospital in August 2021.

Participants' characteristics		Demographic data
Age (years) (Mean±SD)		33.4 ± 9.9
Working time in the health sector (years) (Mean±SD)		9.6 ± 8.9
Gender n (%)	Male	129 (33.5)
	Female	256 (66.5)
Education level n (%)	Primary School	9 (2.3)
	High School	98 (25.5)
	Associate degree	25 (6.5)
	Bachelor	195 (50.6)
	Master	45 (11.7)
	Doctorate	13 (3.4)
Smoking Status n (%)	Currently smoking	143 (37.1)
	Not currently smoking	242 (62.9)
Psychological Support Status (%)	Yes, during the pandemic.	17 (4.4)
	Yes, before the pandemic.	37 (9.6)
	No, I have not received any.	313 (81.3)
	Prefer not to disclose.	18 (4.7)
The State of Being Diagnosed or Followed with Suspicion of COVID-19 n (%)	Yes	188 (48.8)
	No	197 (51.2)

There was a significant difference between the physical activity median scores before and after the pandemic. The median vigorous physical activity score before the pandemic was 1440, while the median value after the pandemic was 960 (p=0.006). The median value of moderate physical activity score before the pandemic was 510, while the median value after the pandemic was 480 (p<0.001). The median value of the walking score before the pandemic was 1188, while the median value after the pandemic was 990 (p<0.001). Sitting median score values also showed a statistically significant difference over time (p<0.001), with a median value of 450 pre-pandemic and 495 during the pandemics. Furthermore, there was a statistically significant difference between the median values of total score over time (p<0.001), with a median value of 2304 pre-pandemic and 1566 during the pandemic (Table 2).

Table 2 Comparison of pre and during the pandemic IPAQ scores.

Domains of Activity	**Pre-pandemic** Median (min. - max)	**During the pandemic** Median (min. - max.)	**p***
VPA	1440 (80 - 10080)	960 (80 - 10080)	**0.006**
MPA	510 (40 - 6720)	480 (40 - 4800)	**0.001**
Walking	1188 (11 - 29700)	990 (33 - 41580)	**0.001**
Sitting	450 (8 - 1620)	495 (15 - 2070)	**0.001**
Sum	2304 (99 - 30390)	1566 (15 - 42030)	**0.001**

*Wilcoxon test; VPA: Vigorous Physical Activity; MPA: Moderate Physical Activity.

According to the results, there was no statistically significant relationship between the pre-pandemic WEMWBS Total Score and the scores for Vigorous Physical Activity (p=0.461), Moderate Physical Activity (p=0.296), Walking (p=0.552), and Sitting (p=0.481). Similarly, there was no statistically significant relationship between the during the pandemic WEMWBS Total Score and the scores for Vigorous Physical Activity (p=0.582), Moderate Physical Activity (p=0.435), Walking (p=0.768), and Sitting (p=0.405) (Table 3).

Table 3 Relationship between the WEMWBS total score and the Physical Activity Scale scores.

r		**Total Score of WEMWBS**	
		p	
Pre-pandemic	VPA	0.066	0.461
	MPA	-0.085	0.296
	Walking	-0.033	0.552
	Sitting	-0.038	0.481
	Sum	-0.037	0.480
During the pandemic	VGA	0.064	0.582
	MPA	-0.077	0.435
	Walking	-0.018	0.768
	Sitting	0.045	0.405
	Sum	0.006	0.908

r: Spearman's rho correlation coefficient, VGA: Vigorous Physical Activity, MPA: Moderate Physical Activity. WEMWBS: Warwick-Edinburgh Mental Well-Being Scale

Before the pandemic, there was no statistically significant difference in terms of total physical activity scores based on education levels (p=0.428), smoking status (p=0.616), psychological support receiving status (p=0.646), and COVID-19 diagnosis status (p=0.868). After the pandemic, there was also no statistically significant difference in terms of total physical activity scores based on education levels (p=0.457), smoking status (p=0.919), psychological support receiving status (p=0.181), and COVID-19 diagnosis status (p=0.526). Due to the lack of significant differences, regression analysis was not performed.

Comparisons made based on gender, age, and working duration in the healthcare sector revealed statistically significant differences between groups both before and after the pandemic. There was a weak negative relationship between age and total physical activity score before the pandemic (r=-0.222; p<0.001). After the pandemic, a very weak negative relationship was observed (r=-0.166; p=0.002). Regarding the working duration in the healthcare sector and total physical activity score, a weak negative relationship was found in the analysis before the pandemic (r=-0.216; p<0.001). After the pandemic, a very weak negative relationship was obtained (r=-0.172; p=0.001).

Discussion and Conclusion

It has been anticipated that limited spaces due to the pandemic, home isolation, closure of parks, gardens, sports centers, and schools may result in an increase in physical inactivity. Our study questioned the physical activity status of participants both before and after the pandemic. According to the findings, individuals' severe and moderate physical activity levels have significantly decreased compared to before the pandemic. Additionally, while walking activity decreased compared to before the pandemic, the participants' sitting times increased. The pandemic has affected all people, not just health workers. However, health workers are among the professions affected by the pandemic. According to one study, there was a 5.5% drop in average steps within 10 days of the pandemic notice and a 27.3% decrease in average steps within 30 days (Tison et al., 2020). Since it concerns human health, they may experience greater responsibility and stress related to their service. In this context, the decrease in physical activity due to the changing lifestyle with restrictions has been one of the expected and observed results of our study. When the literature is reviewed, it is seen that our result is consistent with the literature. Several research completed during the pandemic period have focused on the drop-in physical activity during the pandemic period. A study evaluating the physical activity habits of 710 health professionals working in Brazil during the pandemic period found that 53.9% stopped doing any exercise, 25.8% reduced the frequency or intensity of exercise, and 79.7% experienced a negative impact on physical activity performance (Mota et al., 2021). Home isolation, one of the methods that had to be used to prevent the spread of the pandemic, has become necessary. The feelings of loneliness, fear, and exclusion experienced by individuals during this process have formed a basis for depression and anxiety and affected their mental health (Grant et al., 2020). It has been revealed that physical activity is the most common coping behavior to manage the stress caused by the COVID-19 pandemic. Despite this desire, several studies point out that the pandemic has a negative impact on physical activity levels (Shechter et al., 2020; Therefore, Srivastav et al., 2021). Therefore, it is also a reality that stress levels have increased during the pandemic period. Furthermore, the fact that healthcare professionals had to work long hours in hospitals and increased pace due to the pandemic and had to keep themselves away from their families due to the fear of infecting their loved ones could have increased this stress level and affected their mental health. When participants were asked whether they received psychological support in our study, it was seen that 4.4% received psychological support during the pandemic period, 9.6% received it before the pandemic period, 81.3% did not receive support, and 4.7% did not want to state. When their situations of being diagnosed with COVID-19 or being followed up with suspicion of COVID-19 were questioned during the pandemic period, 48.8% answered yes, and 51.2% answered no. The high number of those who did not receive psychological support against the expected increase in stress levels may be because they preferred not to receive support or because 51.2% did not have COVID-19. In a study conducted by Kang et al. (Kang et al., 2020) with participants consisting of doctors and nurses during the pandemic, it was stated that 17.5% received psychological counselling. Therefore, it is necessary to consider the statements of healthcare professionals who express their concerns and to implement necessary measures to alleviate this situation. Outdoor activities, in particular, have beneficial effects on mental health (Legrand et al., 2018; Stults Kolehmainen & Sinha, 2014). When we examined the effect of physical activity on mental health in our study, there was no significant relationship between the WEMWBS total score and intense physical activity, moderate physical activity, walking, and sitting scores both before and after the pandemic. We can associate this situation with the relatively small number of participants and the fact that our country was among the countries affected by the last pandemic. Therefore, despite the decrease in physical activity compared to before the pandemic, it did not have any effect on mental health. A similar example of the result we found is available in the literature. In a study conducted on healthcare workers and the general population during the pandemic in our country, it was stated that the anxiety and despair levels of healthcare workers were not different from those of the general population (Hacimusalar et al., 2020). Therefore; continuing research on this topic will be beneficial. One of the strengths of our study is that it is one of the limited number of studies investigating the physical activity levels of healthcare workers working in Turkey during the pandemic. The other one covers all

personnel working in the hospital during the epidemic period, including security and cleaning personnel. Health personnel, who work very hard and are under stress during the pandemic period, are not willing enough to answer research questions. The staffs at the hospital were visited face to face and QR codes were distributed to them so that they could act more comfortably while collecting data, and they were asked to respond at their own time. However, the answers are not representative of the universe. This is a limitation of our study.

In conclusion, the changes in the level of physical activity before and after the COVID-19 pandemic in healthcare workers who have been working tirelessly under a heavy workload have been examined, and the factors affecting them have been investigated. Based on the data we obtained, the level of physical activity in healthcare workers decreased during the pandemic. The importance of physical activity is increasingly recognized in society, and studies are often carried out on this subject, but research on physical activity among healthcare workers is limited. Improving the mental health of healthcare workers, who have a good status in society, and increasing their level of physical activity should be one of the policies to be followed. Regulating heavy working hours and reducing workload by hiring additional personnel can help increase physical activity. In addition, individuals should be encouraged to engage in physical activity by teaching them strength, balance, and flexibility exercises that can be applied at home.

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