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Research Article / Araştırma Makalesi

The effect of the COVID-19 pandemic on the mental status of health workers at sports clubs

COVID-19 pandemi sürecinin spor kulüplerinde görev yapan sağlık çalışanlarının ruhsal durumu üzerine etkisi

Nevzad Denerel[1], Onur Yüksel Öçal[2]

[1]*Sport Sciences Department, Faculty of Health Sciences, Eastern Mediterranean University, Mağusa, Turkish Republic of Northern Cyprus*

[2]*Sports Medicine Department, Faculty of Medicine, Ege University, İzmir, Türkiye*

ABSTRACT

Objective: COVID-19 pandemic has affected many people as well as athletes and healthcare professionals mentally. Although there are many studies examining the effect of the pandemic on the mental status of athletes and hospital staff, its effect on the psychological status of professionals providing athlete health care is unknown. This study investigates the effect of the pandemic on the mental health status of health workers of employed in sports clubs.

Method: A total of 192 physicians, physiotherapists and masseurs employed in four different sports branches (football, basketball, volleyball, handball) participated in this survey study, which was conducted one year after the outbreak of the pandemic. Three questionnaires, including Depression Anxiety Stress Scale-21 (DASS-21), Coronavirus Anxiety Scale, and Coronavirus Fear Scale were administered to evaluate the mental status of the participants.

Results: Physiotherapists' DASS-21 total and stress subgroup scores were found to be higher than those of masseurs (p=0.013, p=0.016, respectively). When compared by sports branches, the measurement results of healthcare professionals were similar (p>0.05). The DASS-21 anxiety subgroup scores were found to be higher in those who had COVID-19 infection than in those who did not (p=0.004). Nevertheless, the mean scores of the participants were in the normal range.

Conclusion: In this study, which was conducted about a year after the beginning of the pandemic, the COVID-19 pandemic and the coronavirus infection did not have a significant effect on the mental state of the sports health workers. This can be attributed to the fact that healthcare professionals have adapted to the pandemic process.

Keywords: *COVID-19, mental health, health team, team sports*

ÖZ

Amaç: COVİD-19 pandemisi birçok insanı olduğu gibi sporcuları ve sağlık çalışanlarını da ruhsal açıdan olumsuz yönde etkilemiştir. Pandeminin sporcuların ve hastane çalışanlarının ruhsal durumu üzerindeki etkisini inceleyen çok sayıda çalışma olmasına rağmen sporcularla birebir ilgilenen sağlık çalışanlarının psikolojik durumuna etkisi bilinmemektedir. Bu çalışmanın amacı pandemi sürecinin spor kulüplerinde çalışan sağlık ekiplerinin ruhsal sağlık durumları üzerine etkisini araştırmaktır.

Yöntem: Pandemi başladıktan bir sene sonra yapılan bu anket çalışmasına dört farklı takım spor branşında (futbol, basketbol, voleybol, hentbol) görev yapan doktor, fizyoterapist ve masörlerden oluşan toplam 192 takım sağlık çalışanı katıldı. Katılımcıların ruhsal durumunu değerlendirilmek amacıyla üç anket (Depresyon Anksiyete Stres Ölçeği-21, Koronavirüs Kaygı Ölçeği ve Koronavirüs Korkusu Ölçeği) uygulandı.

Bulgular: Fizyoterapistlerin DASS-21 toplamı ve stres alt grubu puanları masörlere göre daha yüksek bulundu (sırasıyla; p=0.013, p=0.016). Spor branşlarına göre karşılaştırıldığında sağlık çalışanlarının ölçüm sonuçlarının benzer olduğu görüldü (p>0.05). COVİD-19 enfeksiyonu geçirenlerde DASS-21 anksiyete alt grubu puanları geçirmeyenlere göre daha yüksek saptandı (p=0.004). Ancak, katılımcıların uygulanan ölçeklerden ve alt gruplarından aldıkları ortalama puanların normal aralıkta olduğu belirlendi.

Sonuç: Pandemi başladıktan yaklaşık bir yıl sonra yapılan bu çalışmada COVİD-19 pandemisinin ve koronavirüs enfeksiyonu geçirmenin takım sağlık ekibi çalışanlarının ruhsal durumu üzerinde belirgin bir etkisi bulunmadı. Sağlık çalışanlarının pandemi sürecine uyum sağlamış olması ruhsal durumu değerlendiren ölçeklerde normal sonuçlar alınmasını sağlamış olabilir.

Anahtar Sözcükler: *COVID-19, ruhsal sağlık, sağlık ekibi, takım sporları*

INTRODUCTION

COVID-19, which is a rapidly spreading infectious disease and causes atypical pneumonia and death, was detected in late 2019 and declared as a pandemic by the World Health Organization on March 11, 2020, being a global threat (1,2). In Turkey, which reported the first COVID-19 case on the same day, the total number of cases during the period of this study was 5,425,652, and the total number of deaths was 49,732 (3).

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Correspondence / Yazışma: Nevzad Denerel · Sport Sciences Department, Faculty of Health Sciences, Eastern Mediterranean University, Mağusa, Turkish Republic of Northern Cyprus · newzatze@yahoo.com

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To reduce the human-to-human spread of COVID-19, which has a high transmission rate, public health measures have been implemented worldwide; in addition to the curfews imposed by governments, collective quarantines, social distance practices, all kinds of events and meetings, including sports, schools, universities, nonmandatory commercial enterprises and national borders have been closed (4-6). These restrictions, the increasing number of cases and deaths all over the world and the news in the media have increased anxiety and stress in societies. People in isolation and quarantine are also more likely to experience psychological effects such as emotional instability, depression, anxiety, stress and insomnia (7–9). In this uncertain and troubled period, the importance of health research examining mental level has gradually increased.

During the pandemic period, athletes were one of the most studied occupational groups in terms of psychology. Mental health problems such as anxiety and depression, which were observed in 15% to 35% of elite athletes, attracted attention in this field (10,11) and were also evaluated during the COVID-19 pandemic (12). Pre-pandemic studies have shown that elite athletes experience mental health problems to the same degree as or in some cases more than nonathletes (11,13). In the initial period of COVID-19, anxiety and depressive symptoms in professional football players were found to be significantly higher than before the pandemic (12). In one study, being a senior professional athlete at the beginning of the epidemic was associated with a higher level of anxiety (14), while another study indicated that athletes had lower anxiety and depression symptoms than nonathletes (15).

Considering the healthcare professionals who struggled with the infection at the forefront during this epidemic period, increased workload and responsibilities, changing working environment, the risk of being infected and infecting their families due to close contact with infected people put healthcare professionals at risk for mental conditions such as anxiety disorders and depression (16). In a meta-analysis study conducted with a total of 79,437 healthcare professionals, the prevalence of anxiety was found to be 34.4%, depression 31.8%, stress 40.3% and burnout 37.5% (17). A meta-analysis of 47 international studies showed that the prevalence of anxiety was 37% and depression was 36% (18). Additionally, in a study conducted with physicians from the American Medical Society of Sports Medicine, higher anxiety scores were found in female physicians and physicians who worked for longer years in practice. However, surprisingly, physicians who personally provided care to patients with COVID-19 infection did not show higher anxiety and depression tendencies (19).

Although there are many studies examining the mental status of athletes and healthcare professionals during the pandemic, there is no study examining the mental status of healthcare professionals who actively work in teams and take care of athletes one-to-one. Our hypothesis was that team health workers who had to take care of the athletes' health closely and keep them healthy as much as possible were negatively affected mentally during this challenging pandemic.

MATERIALS and METHODS

METHOD

Study Design

This cross-sectional online study was designed in accordance with the Helsinki declaration and approved by the local ethics committee (Decision of the Ege University Faculty of Medicine Clinical Research Ethics Committee dated 06.05.2021 and numbered 21-5T/9). Volunteers of the study were informed about that the collected data could be used for research purposes and their consent was obtained. The participants were able to access surveys through online social media applications.

The study was conducted in April 2021, approximately one year after the declaration of the COVID-19 pandemic. In this period, partial closure was in force in Turkey and sports competitions were held within the scope of health measures without audience.

Participants

For this study, a connection was established with the health teams of sports clubs competing in branches such as football, basketball, handball and volleyball, which are team sports, and competing in official leagues affiliated with the relevant federations. Physicians, physiotherapists and masseurs who were actively working in the health teams and in close contact with athletes at the time of the pandemic were included in the study. Twenty seven of the 35 physicians, 74 of 92 physiotherapists, 91 of 108 masseurs completed and delivered the questionnaires. The response rates were 77.1%, 80.4%, and 84.2%, respectively. Thus, a total of 192 volunteers from four different sports branches and three different occupational groups participated in the study (**Table 1**).

Table 1. Socio-demographic characteristics of participants

	Physician		PT		Masseur		Total	
	n	%	n	%	n	%	n	%
Age								
18-27	0	0,0	24	32,4	6	6,6	30	15,6
28-40	8	29,6	42	56,8	44	48,4	94	49,0
41-50	13	48,1	8	10,8	36	39,6	57	29,7
51-60	6	22,2	0	0,0	5	5,5	11	5,7
Gender								
Woman	0	0,0	5	6,8	2	2,2	7	3,6
Man	27	100,0	69	93,2	89	97,8	185	96,4
Marital Status								
Married with children	16	59,3	26	35,1	55	60,4	97	50,5
Married without children	3	11,1	16	21,6	7	7,7	26	13,5
Single with children	2	7,4	0	0,0	3	3,3	5	2,6
Single without children	6	22,2	32	43,2	26	28,6	64	33,3
Education Level								
Middle school	0	0,0	0	0,0	3	3,3	3	1,6
High School	0	0,0	0	0,0	45	49,5	45	23,4
University	7	25,9	51	68,9	36	39,6	94	49,0
Master	5	18,5	21	28,4	6	6,6	32	16,7
Doctorate	15	55,6	2	2,7	1	1,1	18	9,4
Sport Branch								
Football	23	85,2	49	66,2	65	71,4	137	71,4
Basketball	2	7,4	11	14,9	8	8,8	21	10,9
Volleyball	1	3,7	12	16,2	5	5,5	18	9,4
Handball	1	3,7	2	2,7	13	14,3	16	8,3
Employment duration								
0-4 years	6	22,2	28	37,8	9	9,9	43	22,4
5-10 years	7	25,9	28	37,8	21	23,1	56	29,2
10-15 years	8	29,6	10	13,5	29	31,9	47	24,5
16-20 years	4	14,8	6	8,1	13	14,3	23	12,0
More than 20 years	2	7,4	2	2,7	19	20,9	23	12,0
Total	**27**	**100,0**	**74**	**100,0**	**91**	**100,0**	**192**	**100,0**

Health professionals who were working since the beginning of the pandemic and having no chronic diseases or mental disorders were included in the study.

Questions related to COVID-19 include psychiatric drug use and sleep problems during the pandemic, history of COVID-19 infection of the participants and their relatives, as well as losses due to the infection.

Materials

Depression Anxiety Stress Scale-21 (DASS-21)

This scale (20), which was developed as a short version of the 42-item Depression Anxiety Stress Scale, is used to evaluate mental health. There are three subscales (depression, anxiety, stress), each containing seven items evaluated according to the quadruple Likert type rating (0=never and 3=always). High scores indicate high levels of depression, anxiety and stress. The Turkish validation study was conducted by Yılmaz et al. (21).

Coronavirus Anxiety Scale

It is a scale developed to evaluate dysfunctional anxiety associated with the disease in the COVID-19 pandemic (22). It consists of five items evaluated according to a five-point Likert-type rating (ranging from 0=none and 4=almost every day in the last two weeks). The lowest score is 0 and the highest score is 20. The threshold value is ≥9 at 90% sensitivity and 85% specificity (22). High scores indicate high levels of dysfunctional anxiety. In the Turkish validity-reliability study, the Cronbach-Alpha internal consistency coefficient was 0.81 and the test-retest coefficient was 0.88 (23).

Coronavirus Fear Scale

This is a seven-item scale scored from 1=strongly disagree to 5=strongly agree on a five-point Likert-type scale. It was developed to determine the levels of fear related to COVID-19 (24). High scores indicate that the participant has a high level of fear about COVID-19. The Turkish validity and reliability study was conducted by Artan et al. (25).

Statistical Analysis

The SPSS 26.0 software was used in the statistical analysis of the collected data and its distribution according to its sociodemographic characteristics was given by frequency analysis.

Pearson's chi-square test was used to compare the COVID-19 status of healthcare professionals according to their professions and sports branch. The normality of the scores from the DASS-21, Coronavirus Fear Scale and Coronavirus Anxiety Scale was examined with the Kolmogorov–Smirnov test which did not show a normal distribution. The Kruskal–Wallis H test was used to compare DASS-21, Coronavirus Fear Scale and Coronavirus Anxiety Scale scores according to their professions and sports branch.

RESULTS

The distribution of healthcare professionals according to their sociodemographic characteristics is given in Table 1. It was determined that 71.4% of the participants were employed in football, 10.9% were in basketball, 9.4% were in volleyball and 8.3% were in handball.

Table 2 shows the COVID-19 experience and contagion status of healthcare professionals; 3.6% of them used antidepressants to overcome stress and anxiety during the pandemic and 25.5% had relatives who died due to COVID-19 infection or had severe illness (who had to be hospitalized). 37.0% of the participants stated that they had COVID-19 infection. 57.7% of those who had COVID-19 infection were afraid of getting infected again.

COVID-19 experience of healthcare workers

Table 2.

	n	%
Drug consumption during the pandemic		
Yes	7	3,6
No	185	96,4
Sleep problems during the pandemic		
Yes	67	34,9
No	125	65,1
Losing a relative due to COVID-19		
Yes	49	25,5
No	143	74,5
Past COVID-19 infection		
Yes	71	37,0
No	121	63,0
Symptoms (n=71)		
None	15	21,1
Weakness	41	57,7
Muscle pain	34	47,9
Head ache	29	40,8
Loss of taste and smell	26	36,6
Cough	22	31,0
Fever	20	28,2
Throat pain	13	18,3
Shortness of breath	13	18,3
Time of COVID-19 infection (n=71)		
0-30 day	15	21,1
1-2 month	3	4,2
2-3 month	5	7,0
3-6 month	25	35,2
More than 6 months	23	32,4
Fear of being re-infected (n=71)		
Yes	41	57,7
No	30	42,3
Sleep problems during COVID-19 infection or afterwards		
Yes	30	42,3
No	41	57,7

DASS-21 scale total scores and the stress subgroup of physiotherapists were significantly higher than the masseurs (p=0.013, p=0.016, respectively). When the anxiety and depression subgroup scores in DASS-21 and the scores obtained from the Coronavirus Fear Scale and Coronavirus Anxiety Scale were examined, there was no significant difference between the occupational groups (p>0.05) (**Table 3**).

Table 3. DASS-21, Coronavirus Fear and Coronavirus Anxiety Scale scores

	Group	n		p	Difference
DASS-21 Anxiety	Physician	27	2,78	0,170	
	Physiotherapist	74	3,14		
	Masseur	91	2,26		
DASS-21 Depression	Physician	27	3,04	0,074	
	Physiotherapist	74	3.57		
	Masseur	91	2,70		
DASS-21 Stress	Physician	27	4,11	0,016*	2-3
	Physiotherapist	74	5,39		
	Masseur	91	3,77		
DASS-21 Total	Physician	27	9,93	0,013*	2-3
	Physiotherapist	74	12,09		
	Masseur	91	8,74		
Coronavirus Fear	Physician	27	13,63	0,602	
	Physioterapist	74	13,47		
	Masseur	91	12,96		
Coronavirus Anxiety	Physician	27	1,56	0,266	
	Physiotherapist	74	1,18		
	Masseur	91	0,88		

*p<0,05

There was no significant difference between the DASS-21 total score, anxiety, depression and stress subgroup scores and Coronavirus Fear Scale and Coronavirus Anxiety Scale scores (p>0.05) (**Table 4**).

Table 4. Comparison of DASS-21, Coronavirus Fear and Coronavirus Anxiety Scale scores according to sports branches

	Sport branch	n		p
DASS-21 Anxiety	Football	137	2,55	0,752
	Basketball	21	2,71	
	Volleyball	18	3,00	
	Handball	16	3,25	
DASS-21 Depression	Football	137	3,00	0,757
	Basketball	21	3,19	
	Volleyball	18	3,72	
	Handball	16	"	
DASS-21 Stress	Football	137	4,55	0,826
	Basketball	21	4,33	
	Volleyball	18	4,17	
	Handball	16	3,94	
DASS-21 Total	Football	137	10,11	0,693
	Basketball	21	10,24	
	Volleyball	18	10,89	
	Handball	16	10,13	
Coronavirus Fear	Football	137	13,33	0,810
	Basketball	21	13,19	
	Volleyball	18	13,72	
	Handball	16	12,13	
Coronavirus Anxiety	Football	137	1,18	0,260
	Basketball	21	0,62	
	Volleyball	18	1,33	
	Handball	16	0,69	

The scores of anxiety subgroup of DASS-21 were significantly higher in those who had infection than those who did not (p=0.004). In terms of the total score of the DASS-21 scale, depression and stress subgroup scores, and the scores they received from the Coronavirus Fear Scale and Coronavirus Anxiety Scale, there was no significant difference between the healthcare professionals who did and did not have the infection (p>0.05) (**Table 5**).

Table 5. Comparison of DASS-21, Coronavirus Fear and Coronavirus Anxiety Scale scores of participants

	COVID-19	n		P
DASS-21 Anxiety	Yes	71	3,37	0,004*
	No	121	2,26	
DASS-21 Depression	Yes	71	3,10	0,765
	No	121	3,07	
DASS-21 Stress	Yes	71	4,87	0,430
	No	121	4,19	
DASS-21 Total	Yes	71	11,34	0,256
	No	121	9,53	
Coronavirus Fear	Yes	71	13,46	0,731
	No	121	13,12	
Coronavirus Anxiety	Yes	71	1,00	0,720
	No	121	1,14	

**p<0.05*

DISCUSSION

The prevalence of negative psychiatric symptoms during the COVID-19 period was higher than before the pandemic (26) and these symptoms were common in the initial period of the epidemic, encountered with compulsory quarantine, unexpected unemployment and uncertainty associated with the epidemic (27). The effect of the COVID-19 pandemic on the mental health of healthcare professionals was generally high (28). In our study, although there was a significant difference in DASS-21 total and stress subgroup scores between physiotherapists and masseurs, the mean scores of the scale subgroups in all three professions were in the normal range. Our data do not support our assumption, which can be explained for several reasons. First, the data were collected approximately one year after the declaration of the COVID-19 pandemic. These symptoms, which were common at the beginning of the pandemic, might have decreased over time. Depression and anxiety decreased significantly over time in the general population in China in the early phase and eight months after the pandemic, and posttraumatic stress disorder (PTSD) rarely occurred (29). In the UK, depression and anxiety levels were highest at the beginning of the quarantine, then they decreased rapidly and improved with relaxation and formed a plateau after the first four months (30). In Norway, there was a significant decrease in anxiety and depression symptoms in the period when the protocols were alleviated compared to the period when strict pandemic protocols were applied (31). In addition, dynamic changes of COVID-19 stages on various psychological factors were shown in elite athletes and the reopening and partial closure stages were associated with better mental health, mood and life satisfaction compared to the full closure period (32). The knowledge of the participants about COVID-19 has gradually increased, as well. Healthcare professionals having knowledge about COVID-19 had lower anxiety and depression scores (33).

We thought that health professionals serving in different sports branches could be affected negatively at different levels from the COVID-19 pandemic since team training interruptions and difficult access to facilities during the isolation process might increase mental stress. There was no difference between healthcare professionals according to sports branches. We have two suggestions to explain this result; firstly, the duties and responsibilities of the health workers working in teams are similar regardless of the branch and require close attention to athletes. Secondly; the team athletes have more social relationships. Some studies showed that the type of sports had no effect on the mental health of athletes during the COVID-19 period (15), others have stated team athletes were advantageous in that respect (34) and the mental health could be maintained better, especially through social interaction during quarantine (35).

Pandemic-related long-term social stressors may cause neuroinflammation; therefore, the development of anxiety and depression symptoms as well as the increased prevalence of anxiety and depression in the COVID-19 pandemic, may be attributed to SARS-CoV-2 neuroinvasion and its harmful consequences on the central nervous system (36). In 2020, individuals infected with COVID-19 showed psychiatric disorders than those who were not infected (37). Among healthcare professionals, those infected with COVID-19 had more symptoms of depression, anxiety, stress and PTSD (38). In the second and third pandemic waves in Quebec, the psychological problems of healthcare professionals were mainly related to work and did not increase with being infected with SARS-CoV-2 (39). In our study, although the DASS-21 anxiety subgroup score was significantly higher in healthcare professionals who had COVID-19. The mean scores in both groups were found to be at normal levels and the scale results related to COVID-19 were similar. This may suggest that the high level of anxiety may have occurred due to work-related factors.

Our study has some limitations. It was not possible to establish a cause-effect relationship due to its cross-sectional design. Since the results were obtained at a single point of time and approximately one year after the beginning of the pandemic, the possible change in mental health status could not be described. When collecting the data, no clinical evaluation was made. There were only a small number of female participants in the study, so that gender-based psychological status could not be evaluated. The results cannot be generalized to healthcare professionals dealing with individual sports athletes.

CONCLUSION

Approximately one year after the onset of the COVID-19 pandemic, there was no significant effect on the mental state of the health professionals working in sports clubs. We recommend further studies to investigate the mental status of team healthcare professionals at different periods of pandemic, as well as evaluate the strategies of healthcare professionals in coping with the pandemic and how they adapt to changing conditions.

Ethics Committee Approval / Etik Komite Onayı

Ege University Faculty of Medicine Clinical Research Ethics Committee (approvel numbered: 21-5T/9, date: 06.05.2021)

Conflict of Interest / Çıkar Çatışması

The authors declared no conflicts of interest with respect to authorship and/or publication of the article.

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