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ORIGINAL ARTICLE

Burnout of the physiotherapists and encountered stress factors related to coronavirus epidemic in Turkey

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Purpose: The study aims to determine risk factors related to stress due to pandemic, the burnout levels of the physiotherapist, the relationship between these parameters.
Methods: One hundred two physiotherapists, whose sociodemographic information was obtained, were divided into two groups according to disease exposure (CoV and non-CoV group). Pandemic-Associated Stress Factors of the participants were analyzed and Maslach Burnout Inventory (MBI) was used to measure burnout. The independent sample t test was used to detect the difference between the groups. Pearson's correlation analysis was used to find relations in parameters.
Results: 96% of respondents were concerned about getting infected and 98% concerned about infecting their families. Most of the participants were physically and mentally tired (74.5%, 58.8%). The CoV group consisted of 45 (44.11%) physiotherapists who had a history of COVID-19, had patient contact, or worked with coronavirus patients. There was no significant difference in MBI sub-parameters between the two groups ($p<0.05$). Physiotherapists with high exposure to COVID-19 were found to have a 3.2 times higher level of stress about feeling compelled to go to work than those with low exposure to it ($p=0.02$).
Conclusion: Anxiety about being sick and contagious can trigger psychological symptoms such as mental fatigue and sleep disturbance. Although the workload of the participants in our study did not increase, most of them stated that they felt physically exhausted. During the pandemic period, psychological diseases, and burnout in healthcare workers increased tremendously.
Keywords: Coronavirus, Physiotherapist, Burnout.

Koronavirüs salgınında fizyoterapistlerin mesleki tükenmişlik düzeyi ve pandemiyle ilişkili karşılaşılan stres faktörleri

Amaç: Bu çalışma pandemi kaynaklı strese bağlı risk faktörlerini, fizyoterapistin tükenmişlik düzeylerini, bu parametreler arasındaki ilişkiyi belirlemeyi amaçlamaktadır.
Yöntem: Sosyodemografik bilgileri alınan 102 fizyoterapist hastalık maruziyetine göre (CoV ve CoV olmayan grup) iki gruba ayrıldı. Katılımcıların Pandemi İlişkili Stres Faktörleri analiz edildi ve tükenmişliği ölçmek için Maslach Tükenmişlik Envanteri (MTE) kullanıldı. Gruplar arasındaki farkı tespit etmek için bağımsız gruplarda t testi kullanıldı. Parametrelerdeki ilişkileri bulmak için Pearson korelasyon analizi kullanıldı.
Bulgular: Ankete katılanların %96'sı enfekte olmaktan ve %98'i ailelerine bulaştırmaktan endişe duyuyordu. Katılımcıların çoğu fiziksel ve zihinsel olarak yorgundu (%74,5, %58,8). CoV grubu COVID-19 öyküsü olan, hasta teması olan veya koronavirüs hastalarıyla çalışan 45 (%44,11) fizyoterapistten oluşuyordu. MTE alt parametrelerinde iki grup arasında anlamlı fark yoktu ($p<0,05$). COVID-19'a yüksek maruziyeti olan fizyoterapistlerin, düşük maruziyeti olanlara göre işe gitmek zorunda hissetme konusunda 3,2 kat daha yüksek stres düzeyine sahip oldukları bulundu ($p=0,02$).
Sonuç: Hasta olma ve bulaşıcı olma kaygısı, zihinsel yorgunluk ve uyku bozukluğu gibi psikolojik belirtileri tetikleyebilir. Çalışmamızda katılımcıların iş yükleri artmasa da çoğu fiziksel olarak bitkin hissettiklerini belirtmişlerdir. Pandemi döneminde rehabilitasyon hizmetlerinin önemli bir parçası olan fizyoterapistlerde psikolojik hastalıklar ve tükenmişliğin büyük oranda arttığı görülmektedir.
Anahtar kelimeler: Koronavirüs, Fizyoterapist, Tükenmişlik.

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The new type of coronavirus (SARS-CoV-2) first appeared in the Wuhan region of China and spread to many world countries quickly. For this reason, the World Health Organization Emergency Committee declared a global pandemic due to increasing case reports.[1] Increasing cases have placed an extra burden on the health systems of all countries, and health professionals have had to carry a large part of this burden.[2] Situations such as long working hours, isolation precautions, lack of qualified personnel, suspension of an annual permit, and resignation processes have caused in a multidimensional wear.[3] It is known that physiotherapists work in different health system departments such as neurology, orthopedics, intensive care, and cardiopulmonary clinics, and they take an active role in the pandemic and were greatly affected by this period like other healthcare professionals.[4] Because of the serious pandemic process, physiotherapists have been employed in different departments, suitable or unsuitable for their professional job descriptions, they have been affected by many stress factors associated with these situations during the epidemic. Also, physiotherapists who perform respiratory rehabilitation in intensive care units have contributed to health services by being assigned in a filiation team and performing Polymerase Chain Reaction (PCR) tests in emergency services.

Due to the nature of physiotherapy, long-term and continuous contact with patients, working hard conditions, and stress increase the risk of "professional burnout".[5] It was reported that the rates of connectedness, empathy, and burnout in physiotherapists caused by spending more time with patients were higher than other health professionals in a pre-coronavirus period study.[6] Physiotherapists who are in close contact with patients during the pandemic have highly affected by the process.

Studies have mainly focused on depression levels, occupational satisfaction, physical activity, quality of life, sports injuries, muscle pain, and posture disorders of physiotherapists.[7-10] However, we could not find any study related to the burnout caused by the COVID-19 and the stress factors associated with the pandemic in physiotherapists. The study aims to determine risk factors related to stress due to pandemic, the burnout levels of the physiotherapist, the relationship between these parameters.

METHODS

The study was carried out with 102 physiotherapists who accepted the online invitation between February 2021 and June 2021. Online invitations were delivered via professional mail groups and social media groups. The inclusion criteria were (1) to be actively working in public hospital or private hospital/clinic for at least six months, (2) to be actively working in special education and rehabilitation centers for at least six months. Exclusion criteria were resigning from work during the study period, (2) retiring, (3) taking permission with excuse during the pandemic, (4) receiving treatment for a psychological illness or using its medications. The assessor held an individualized video conference call with each participant and detailed about the study content. The same physiotherapist made all assessments once.

Marmara University Faculty of Health Sciences Non-Invasive Clinical Studies Ethics Committee approved the study with 28.01.2021/17 protocol number. Participants were divided into two group, those with and without exposure to the disease (CoV and non-CoV group). High exposure conditions were defined as (1) had a history of COVID-19, (2) work with COVID-19 patients, and (3) had contact with COVID-19 patients.

Sociodemographic data: Age, gender, height, weight, date of employment, the status of the institution (private/public), in which department they work, whether they have any health problems, whether they have COVID-19 during working, satisfaction with the department, weekly working hour and the number of patients they follow weekly were questioned.

Maslach Burnout Inventory (MBI): This scale evaluates burnout in three different dimensions emotional exhaustion (EE) (9 items), depersonalization (DP) (5 items), and personal accomplishment (PA) (8 items). While “Emotional Exhaustion” refers to a decrease in an individual's emotional and physical resources, “Depersonalization” represents the interpersonal dimension of burnout and

indicates unresponsiveness to work. "Personal Achievement" refers to the tendency of a person to evaluate himself negatively. The Turkish validity and reliability of the inventory were done by Ergin.[11] The inventory is a 5-point Likert scale. There is no total score for burnout. Each subscale is evaluated within itself. It is scored between 0-36 for emotional burnout, 0-20 for depersonalization, and 0-32 for personal achievement. There is no cut-off value for the subgroups, high scores mean a poor situation except personal accomplishmen.[12]

Pandemic-Associated Stress Factors: Nimrod Hertz and colleagues restated stress factors from previous studies. They were based on the analysis of Imai et al.[13] Stress factors include infection risk, information and measurement, protection, status, isolation, and other subheadings, and there are 15 in total. Participants chose one of four options for each stress factor. These options are; 0- Never, 1- Sometimes, 2- Often, 3- Always. Answer 0-1 means low stress, and 2-3 means high stress. The score of each factor is calculated separately, but there is no total score. The maximum score for each section is 3, and the minimum is 0 points. Stress factors are included in the statistical calculation with descriptive statistics or correlation/regression analysis.[14]

Statistical analysis

Data analyses were performed using Statistical Package for the Social Sciences (SPSS v11.0) software. The numerical scores were presented as Mean±Standard deviation. The Independent Sample T test was used to detect the difference between the groups. Bivariate correlation coefficient (Pearson's r) was calculated and the significance level was accepted as 5%. A random sample selection technique was used in the study. It was approved to complete the survey with at least 100 people when Cohen's effect size is 0.3, the alpha error is 5%, and the power is 80%.

RESULTS

A total of 102 physiotherapists (mean age 26.52±3.16 years, range 20-36; 55 males, 53.93%) participated in this study. While 29 participants residing with the elementary family, 32 with the extended family, and 20 with the housemate, 21 of the them lived alone. Most physiotherapists serve in the private sector (67.64%) and work in different physiotherapy science branches. The percentage of physiotherapists working in pediatric rehabilitation was 48.04, orthopedic rehabilitation was 19.61, neurologic rehabilitation was 18.63. The physiotherapists working in intensive care, rheumatology, hand surgery and cardiology departments were 4.90%, 3.92%, 2.94%, 1.96%, respectively.

There were 45 (44.11%) physiotherapists with a history of COVID-19, patient contact or working with the coronavirus patients. The majority of the participants were pleased with their department but were not satisfied with their salaries. Also, the CoV group had an average of 3.5±3.0 years of professional experience and working times (weekly) were 41.1±11.6 hours. They were treated approximately 23.2±19.1 patients during this time. Other results are shown in Table 1.

When we examined the stressors related to the pandemic, almost all participants were anxious to be infected and infect their families (96.1%, 98.0%). Also, 51.9% of physiotherapists reported that the knowledge of preventing disease and protection is insufficient. Additionally, 55.9% of physiotherapists thought that health institutions could not protect themselves. Except for this, most participants were physically and mentally exhausted (74.5%, 58.8%) and had financial concerns (72.5%). All stress factors were shown in Table 2.

The burnout levels of the participants were evaluated with the MBI. The mean of the EE for CoV Group was 19.84±6.84, depersonalization score was 6.33±3.83, and personal accomplishment was 20.77±4.51. In the non-CoV group; EE, DP and PA scores were 19.57±7.20, 6.49±3.68, and 22.29±5.32, respectively (Table 3).

In the sub-dimensions of MBI, Pearson correlation coefficient showed a significant positive strong correlation between EE and DP ($r=0.69$, $p<0.05$) in CoV group. But there was a negative moderate correlation between EE and PA ($r= -0.42$, $p<0.05$). Also, there was negative low correlation between DP and PA ($r= -0.37$, $p<0.05$). There was also a moderate relationship between EE and DP in the non-CoV group ($r=0.61$, $p<0.05$).

Table 4 also indicates the correlations between pandemic-related stress factors and the MBI. According to the results, there was a

significant positive low correlation between EE of the participants and their anxiety about transmitting COVID-19 to family members in the CoV group (r=0.30, p<0.05). Lack of knowledge about the virulence of the COVID-19 (r=-0.30, p<0.05) and prevention methods also had relationship with EE (r=-0.35, p<0.05). Physical exhaustion of the CoV group participants had a negative low correlation on EE and positive low correlation on PA (r= -0.27 and r= 0.29, p<0.05 for both). All results are shown in Table 4.

When the odds ratio between level of stress factors and exposure degree of COVID-19 was evaluated, it was seen a significant result in only one stress parameter. Physiotherapists' stress level related to feeling obligated to go to work, who exposed high degrees COVID-19, were found 3.2 times higher than the others, who exposed low degrees COVID-19 (p=0.02) (Table 5).

DISCUSSION

The relationship between the burnout levels of physiotherapists and stress factors of the pandemic were investigated in this paper. For this purpose, online interviews were conducted with physiotherapists and it was seen that the vast majority of the participants had concerns about being infected and infecting their families. Surprisingly, half of the physiotherapists stated that they had insufficient knowledge about disease prevention and protection. In addition, participants were skeptical that their health systems could protect them. Physical and mental exhaustion rates and financial concerns had similarly related to the pandemic. According to the results of burnout levels evaluated by MBI, no difference was found between the groups. Also, there was a significant relationship between group in emotional exhaustion and depersonalization parameters, while there was a correlation between emotional exhaustion and personal accomplishment in the group with a high relationship with COVID-19. Similarly, the CoV group had a low correlation between physical exhaustion and EE-PA.

Factors originating from the COVID-19 pandemic have triggered both physical and psychological stress on healthcare professionals.[15] In our results, psychological symptoms such as anxiety about getting sick and contagious, mental exhaustion and sleep disturbance are frequently seen in physiotherapists. Although their workload did not increase, most of the participants stated that they felt physically exhausted. The psychological diseases and burnout in healthcare workers and physiotherapists have increased excessively during the pandemic.[15,16] In a study, burnout was found more than half of Malaysian healthcare workers. Among the factors affecting burnout were shown such as increased workload, uncertainty, work-family balance, and poor working conditions. Similarly, the participants complained about the negative psychological impact of burnout. In addition, inadequacy in child care at home and overtime also affected the burnout levels.[17] Jacome et al.[18] reported that more than 40% of physiotherapist experienced personal and work-related burnout during the pandemic. They stated that high-level depression and stress contributed to this situation. Another study stated that the anxiety and depression levels of allied health professions were higher than nurses and junior medical staff.[19] Studies conducted in recent years mention that burnout can affect mental problems.[20] In the pre-pandemic period, Pavlakis et al.[21] reported a moderate level of burnout in physiotherapists. Tığlı et al.[22] found that the level of burnout of physiotherapists was negatively related to the level of happiness; Yasacı et al.[23] also found that the burnout level of physiotherapists is affected by the working environment. In our study, it was shown that the anxiety of infecting family members was positively related to the mental fatigue sub-dimension of burnout in the CoV group. Tarakci et al.[24] defined the burnout level of physiotherapists working in special education who have similar professional experience periods as high. In our study, MBI results of physiotherapists show a higher level of burnout compared to the results of Tarakci et al. However, the burnout rates of the CoV and non-CoV groups were similar. This can be attributed to the impact of the pandemic on the risk of transmission, general life and society.[24] Since the pandemic began, physiotherapists have worked as hard as other health professionals. In this process, they were exposed to many stress factors originating from illness, patient, and workplace due to the prevention of annual

Table 1. Demographics of the participants.

	CoV		non-CoV	
	Yes n (%)	No n (%)	Yes n (%)	No n (%)
Having Chronic Disease	7 (15.6)	38 (84.4)	6 (10.5)	51 (89.5)
Overtime Requesting of Chief	7 (15.6)	38 (84.4)	7 (12.3)	50 (87.7)
Satisfaction from Salary	9 (20.0)	36 (80.0)	13 (22.8)	44 (77.2)
Satisfaction from Working Conditions	20 (44.4)	25 (55.6)	25 (43.9)	32 (56.1)
	X±SD*		X±SD*	
Experience (year)	3.5±3.0		3.3±3.1	
Daily working time (hour)	8.1±1.0		7.8±1.3	
Weekly working time (hour)	41.1±11.6		39.0±7.3	
Number of treated patients (Weekly)	23.2±19.1		24.0±16.9	

*No differences between group (p>0.05).

Table 2. Pandemic-Associated Participants' Stress Factors.

Pandemic-Associated Stress Factors	X±SD	High Stress n (%)
Anxiety about being infected	2.5±0.5	98 (96.1)
Anxiety about infecting family members	2.6±0.5	100 (98.0)
Lack of knowledge about infectiveness and virulence	1.2±0.9	39 (38.2)
Lack of knowledge about prevention and protection	1.3±1.0	53 (51.9)
Feeling of being protected by national government	1.2±0.8	29 (28.4)
Feeling of being protected by healthcare systems	1.6±1.2	57 (55.9)
Increased workload	0.8±0.8	16 (15.7)
Physical exhaustion	2.1±0.7	76 (74.5)
Mental exhaustion	1.8±0.7	60 (58.8)
Sleep Difficulties	1.4±0.8	40 (39.2)
Feeling of being isolated and shunned by others	1.3±0.6	38 (37.2)
Feeling obligated to go to work	0.6±1.0	22 (21.6)
Increased childcare burden	1.1±0.7	23 (22.5)
Feeling mission-driven to work	1.2±0.9	37 (36.3)
Financial worries	2.0±0.8	74 (72.5)

Table 3. Differences of Maslach Burnout Inventory results between groups.

	CoV X±SD	non-CoV X±SD	
Maslach Burnout Inventory			
Emotional Exhaustion	19.8±6.8	19.5±7.2	0.85
Depersonalization	6.3±3.8	6.4±3.6	0.83
Personal Accomplishment	20.7±4.5	22.2±5.3	0.12

Table 4. Correlations between Maslach Burnout Inventory and pandemic related stress factors.

	CoV			non-CoV		
	EE	DP	PA	EE	DP	PA
	r	r	r	r	r	r
Anxiety about being infected	0.05	-0.13	0.10	0.01	0.09	0.13
Anxiety about infecting family members	0.30*	0.04	-0.10	0.10	0.10	-0.13
Lack of knowledge about infectiveness and virulence	-0.30*	-0.12	0.05	-0.13	-0.07	-0.01
Lack of knowledge about prevention and protection	-0.35*	-0.09	0.24	-0.10	-0.06	-0.23*
Feeling of being protected by national government	-0.08	0.07	0.15	0.01	0.09	-0.08
Feeling of being protected by healthcare systems	-0.27*	-0.11	0.05	-0.01	0.01	-0.16
Increased workload	-0.07	-0.08	0.21	-0.19	-0.06	-0.19
Physical exhaustion	-0.27*	-0.22	0.29*	-0.11	-0.09	-0.17
Emotional exhaustion	0.01	-0.08	0.28*	0.07	0.13	-0.04
Sleep Difficulties	0.13	-0.02	-0.01	0.12	0.05	0.02
Feeling of being isolated and shunned by others	-0.03	0.18	0.01	0.06	0.07	0.11
Feeling obligated to go to work	-0.06	0.05	0.07	-0.09	-0.01	-0.01
Increased childcare burden	0.05	-0.01	-0.04	-0.07	0.00	-0.12
Feeling mission-driven to work	-0.08	-0.14	0.17	0.06	-0.11	-0.11
Financial worries	-0.15	-0.14	0.01	0.15	0.00	-0.03

*p<0.05, r: Pearson's correlation coefficient. EE: Emotional Exhaustion. DP: Depersonalization. PA: Personal Accomplishment.

Table 5. Odds ratio (OR) between level of pandemic related stress factors and exposure degree of Covid-19.

Pandemic Related Stress Factors	Stress Level	CoV	non-CoV	OR (95% CI)	p	Eta
Feeling of being protected by healthcare systems	Low	15 (14.7%)	30 (29.4%)	2.22 (0.99-4.99)	0.05	0.19
	High	30 (29.4%)	27 (26.5%)			
Feeling obligated to go to work	Low	31 (30.4%)	50 (49%)	3.22 (1.17-8.87)	0.02	0.23
	High	14 (13.7%)	7 (6.9%)			
Feeling mission-driven to work	Low	24 (23.5%)	41 (40.2%)	2.24 (0.98-5.10)	0.05	0.19
	High	21 (20.6%)	16 (15.7%)			

leaves and resignation.

The burnout of healthcare professionals who work exclusively with COVID-19 patients are higher than non-workers.[25] In this respect, our results differ from the literature because we could not detect a significant difference between the groups. For instance, Paniak et al.[26] said that COVID-19 increased the work-related burnout of physiotherapists in Poland. However, they emphasized that the effect of social isolation and other factors on this increase should be examined in more detail. Revda reported that doctors who were actively fighting the epidemic had lower levels of burnout and the probable reason is a sense of sanctity attribution to their work.[27] In another study, it was reported that 54.4% of nurses experienced moderate burnout during the epidemic.[28] The vast majority of the participants in our study were working in the field of pediatric and orthopedic rehabilitation. Although the risk of transmission is always present, not working directly with COVID-19 patients may not have affected burnout as much as expected. In addition, the professional experience years of the participants were not excessive. This situation reduces the effect of burnout risk due to years on the results of this paper.

Long shifts, lack of support, sleep problems, and exposure to COVID-19 of healthcare workers increase their burnout levels.[29] Our results showed a moderate positive correlation between EE and DP scores of physiotherapists who had a high relationship with COVID-19, while there was a moderate negative relationship between PA. At the same time, we noticed a low correlation between their physical burnout and personal achievements. It was reported that in a study, nurses who work in COVID-19 team had moderate/high-level EE, DP and PA during the epidemic period. In addition, it was stated that there was a moderate correlation between DP and EE, and a very low relationship between PA and EE-DP. Similarly, the participants had a strong correlation between EE and anxiety, and a moderate correlation between DP and anxiety. Also, individuals with high family support had low EE, DP scores and high PA scores.[30] Another study found that more than half of nurses experienced high levels of emotional exhaustion. In the same study, 52% of the nurses had moderate depersonalization and 12.5% had high level personal achievement.[31] Barello et al.[32] conducted a study with health professionals. According to this, it was underlined that occupational-related deterioration in people's private lives and excessive risk at work affected their emotional exhaustion during the COVID-19 epidemic. The fact that health care workers feel at risk and occupational-based deterioration in their private lives cause depersonalization. Mosheva et al.[33] reported that increased workload was associated with increased anxiety. In another study, a strong relationship was reported between the quality of life and burnout of health workers working during the epidemic.[34] Our results showed that there were no major differences between our groups according to burnout. In this respect, we obtained different results from the literature. Although the participants were healthcare workers in our groups, almost all of them did not work directly with patients with corona virus. However, burnout levels were high in both groups and there was no difference between the groups. We think that the possible reason is due to the working conditions of our sample. Our participants may have been indirectly affected by the pandemic as healthcare workers, not directly. In addition, the depersonalization score of the physiotherapists was pleasingly low. Because physiotherapists stay with patients for longer periods, unlike other healthcare professionals. This situation makes patient-physiotherapist relations more emotional and causes an increase in empathy.

Limitations

This study included several limitations. Firstly, the number of physiotherapists who directly followed COVID-19 patients was very small and the majority of the participants were working in pediatric rehabilitation. This situation was caused by due to the low number of physiotherapists employed in respiratory departments and intensive care units in many hospitals. Secondly, although the forms are filled online, most of the invited individuals had not respond. Nevertheless, to the best of our knowledge this is the first article examining the stress factors experienced by physiotherapists during the pandemic in Turkey. At the same time, the burnout status of physiotherapists was also examined.

Conclusion

As a result of the study, it was detected that physiotherapists have high perceptions of emotional exhaustion and personal achievements. On the contrary, it was observed that the insensitivity of physiotherapists was low in depersonalization. For researchers, it will be an example and guide for future studies to improve the emotional and psychological problems experienced by physiotherapists in their professional lives.

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