

Psychological Impact Among Physical Therapists during COVID-19 in Western KSA

MOUSA GIHAN^{1,2}, SALEM MOHAMED¹, BOGARI RANA¹, YAMANI SAMARAH¹, AL MAZNI WAAD¹, AL SULAMI ALANOUD¹, AL SHARIF BASHYIR¹, YALLI SHATHA¹, HAWSAWI GHADA¹, KALANTAN BATOOL¹, FARAJ JUDE¹, ALQURASHI ASMA¹

¹Department of Physical Therapy, College of Applied Medical Sciences, Umm Al Qura University, Makkah, Kingdom of Saudi Arabia (KSA).

²Department of Physical Therapy for Cardiovascular/ Respiratory Disorder and Geriatrics, Faculty of Physical Therapy, Cairo University, Egypt.

Correspondence to: E-mail: gihanmoussa79@gmail.com

ABSTRACT

Background: COVID-19 pandemic exposed health care providers such as physiotherapists to psychological disorders as depression and anxiety. Purpose: the purpose of this study was to determine the prevalence of psychological impact among physical therapists during COVID-19 in western Kingdom of Saudi Arabia (KSA).

Methods: Researchers performed a cross sectional survey-based study targeting physiotherapists in western KSA during the COVID-19 pandemic by using an online questionnaire. The questionnaire composed of three parts personal, occupational, and psychological. One hundred and ten Physical therapists replied who were working at 18 public and health hospitals of the Western region of KSA providing direct care for patients during the COVID-19 pandemic.

Data analysis: Descriptive statistics of mean, standard deviation and percentage were utilized in presenting the subjects characteristics and collected data. Chi-square statistics was utilized to examine psychological injury with subject characteristics. The level of significance was set at $p < 0.05$ for all tests through the statistical package (SPSS) version 25.

Result: One hundred and ten physiotherapists [(60%) females and (40%) males] participated in this study. The results showed that male physiotherapists (63.69%) had higher frequency of psychological disorders in comparison with female physiotherapists (40.9%).

Conclusion: The COVID-19 pandemic had a bad effect on psychological aspect of physiotherapists in western KSA.

Key Words: COVID-19 pandemic, Psychological impact, Physiotherapists in western KSA

INTRODUCTION

COVID-19 disease, a fatal respiratory disease was diagnosed in December 2019 in Wuhan, China. In March 2020, the World Health Organization (WHO) declared it a pandemic¹. COVID-19 is a flu-like infection that is spread by coughing, sneezing, or droplets from rhinorrhea². Fever, cough, malaise, sputum and / or shortness of breath are symptoms of COVID 19 respiratory infections³. According to the Ministry of Health of Saudi Arabia, 110,671 cases have occurred in western Saudi Arabia by February 15, 2021⁴. Exposure to COVID-19 may result in psychological disorders such as depression, phobia disorders and anxiety^{5,6}. Healthcare providers are at a greater risk of developing these psychological disorders because they are on the front lines of fighting the COVID-19 pandemic⁵. Such as physiotherapists who have a crucial role in the respiratory and physical rehabilitation of patients with COVID-19³. So, providing psychological support to healthcare providers has been identified as essential for their long-term capacity⁷. The objective of this study was to determine the prevalence of psychological impact among physical therapist during COVID-19 in western KSA.

METHODOLOGY

Study Design: A cross sectional study design was used for this study.

Participants and Sampling Strategies: There were 110 physiotherapists in this study. They were between the ages of 21 and 42 at the time of the COVID-19 outbreak and worked in a variety of public health facilities in western Saudi Arabia, including (Makkah-Jeddah-Medina-Yanbu-Taif). Participants were recruited through an online survey. In the case of COVID 19, 110 physiotherapists provided direct care to patients in 18 public and health facilities in Saudi Arabia's western area. Sixty-eight (68) Physiotherapists were from Makkah public and health hospitals, (19) Physiotherapists were from Jeda public and health hospitals, (15) Physiotherapists were from Medina public and health hospitals, (5) Physiotherapists were from Taif municipal Health Hospitals, and (3) Physiotherapists were from Yanbu Municipal Public Health Hospitals.

Data Collection: From January 26, 2021 to March 2, 2021, all data was collected using an online questionnaire with 31 questions. The questionnaire had three sections: personal, occupational, and psychological. The researchers asked the

participants to confirm their willingness to participate in the study. The survey's personal part featured questions about age, height, and weight⁸. The occupational component of the survey asked if the participant was a specialist or an intern, as well as their practice area and patient contact hours⁸. The last section asked about the psychological impact during COVID-19 outbreak. The researchers asked about the participants personal experience related to COVID-19. The researchers then included three sliding scales about the subject's level of general anxiety / distress associated with the COVID-19 outbreak, and the last question was an open-ended question asking to include any additional information or clarification related to the subject's emotional responses to COVID-19⁹.

Statistical analysis: To display the individuals' characteristics and study data, descriptive statistics such as mean, standard deviation, frequencies, and percentages were used. The mean and standard deviation were used to represent quantitative variables, whereas frequencies and percentages were used to represent categorical variables. The relationship between psychological injuries and subject characteristics was assessed using Chi-square statistics. All statistical tests had a significance level of less than 0.05. The statistical program for social studies (SPSS) version 25 for Windows was used for all statistical analysis.

RESULTS

Subjects' characteristics: In this study, 110 physiotherapists from western Saudi Arabia took part. The study group's mean \pm SD age was 25.34 ± 3.94 years, with a minimum of 21 and a maximum of 42 years. The study group's mean BMI was 24.12 ± 4.28 kg/m². 60% of the participants were ladies, whereas 40% were males. Specialists accounted for 62 (56.4%) of the total, while interns accounted for 48 (43.6%). The subject characteristics are shown in Table 1.

Prevalence of psychological impact among physical therapist during COVID-19 in Western KSA: The prevalence of anxiety / distress associated with the COVID-19 outbreak among physical therapist during COVID-19 in Western KSA was 50% with 95% CI of 40.81- 59.18%.

The mean \pm SD rating of general anxiety / distress associated with the COVID-19 outbreak was 5.25 ± 2.52 . The mean \pm SD rating of general anxiety / distress due to contract COVID-19 was 6.34 ± 2.89 . The mean \pm SD rating of general

anxiety / distress associated with social impacts of COVID-19 was 5.7 ± 2.84 (Table 2, Fig.1).

Table 1. subjects' characteristics

Subjects' characteristics	N	%
City		
Jeddah	19	17.3
Makkah	68	61.8
Medina	15	13.6
Taif	5	4.5
Yanbu	3	2.7
Age classes		
21-24 years	63	57.3
25-45 years	47	42.7
BMI		
Under weight (less than 18.5)	12	10.9
Normal weight (18.5–24.9 kg/m ²)	57	51.8
Overweight (25–29.9 kg/m ²)	27	24.5
Obese (≥ 30 kg/m ²)	14	12.7
Sex		
Female	66	60
Male	44	40
Degree		
A specialist	62	56.4
An intern	48	43.6
Area of practice		
Cardiopulmonary Rehabilitation	5	4.5
General Physical Therapy	82	74.5
Neurological Rehabilitation	3	2.7
Orthopedic Rehabilitation	14	12.7
Pediatric Physical Therapy	6	5.5
Working hours		
1-8 hours	99	90.0
More than 8 hours	11	10.0

29 (26.4%) physiotherapists think that the anxiety/distress related to COVID-19 had no impact on providing services to patients, 25 (22.7%) think that the anxiety/distress related to COVID-19 had small impact while 11 (10%) think that the anxiety/distress related to COVID-19 had large impact on providing services to patients and only three (2.7%) think it had very large impact. 25 (52.1%) of trainees were very concerned and 7 (14.6%) were somewhat concerned that changes related to COVID-19 will affect their training experiences/expectations while lower percentage were unconcerned (Table 3).

Table 3. Psychological impact among physical therapist during COVID-19 in Western KSA.

Question	N	%
Havel anxiety / distress associated with the COVID-19 outbreak		
Yes	55	50
No	55	50
To what extent do you think that your anxiety/distress related to COVID-19 affects your ability to provide services to patients?		
N/A, I am not currently working / providing patients services secondary to COVID-19 related concerns	17	15.5
No impact	29	26.4
Somewhat large impact	11	10
Somewhat small impact	25	22.7
Very large impact	3	2.7
Very small impact	25	22.7
Trainees only: To what extent are you concerned that changes related to COVID-19 will affect your training experiences/expectations?		
Neutral (not concerned or unconcerned)	7	14.6
Somewhat concerned	7	14.6
Somewhat unconcerned	5	10.4
Very concerned	25	52.1
Very unconcerned	4	8.3

Table 4. The frequency distribution of psychological injury and association with subjects' characteristics.

Subjects' characteristics	Psychological injury		χ^2 value	p-value
	Yes	No		
Age classes				
21– 24 years	34 (54%)	29 (46%)	0.92	0.44
25– 45 years	21(44.7%)	26(55.3%)		
BMI				

Association between psychological injury and subject characteristics: There was no significant association between psychological injury and age, BMI, degree, area of practice and working hours ($p > 0.05$); that means physiotherapists of different age, BMI, degree, area of practice and working hours sustained injuries at similar rate.

There was a significant association between psychological injury and sex ($p < 0.05$). Male physiotherapists had higher frequency of injuries than female physiotherapist (Table 4, Fig.2).

Table 2. Rating level of general anxiety / distress associated with the COVID-19 outbreak among physical therapist during COVID-19 in Western KSA.

Question	Minimum	Maximum	Mean	SD*
Level of general anxiety / distress associated with the COVID-19 outbreak.	1	10	5.25	2.52
Level of anxiety/distress that you or someone you know will contract COVID-19.	0	10	6.34	2.89
Level of anxiety/distress associated with social impacts of COVID-19.	0	10	5.70	2.84

* SD: standard deviation

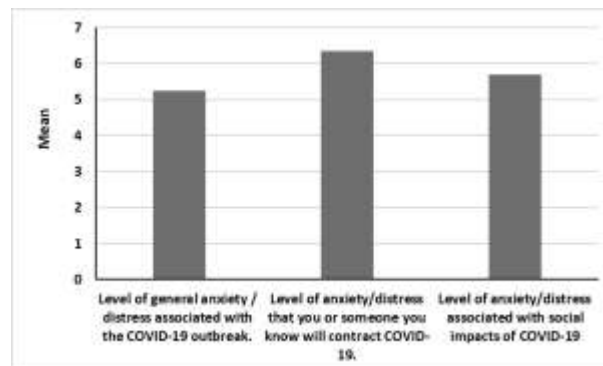


Fig. 1: The mean value of general anxiety / distress associated with the COVID-19 outbreak.

Under weight (less than 18.5)	7 (58.3%)	5 (41.7%)	6.69	0.11
Normal weight (18.5–24.9 kg/m ²)	25 (43.9%)	32 (56.1%)		
Overweight (25–29.9 kg/m ²)	12 (44.4%)	15 (55.6%)		
Obese (≥ 30 kg/m ²)	11 (78.6%)	3 (21.4%)		
Sex				
Females	27 (40.9%)	39 (59.1%)	5.45	0.02
Males	28 (63.69%)	16 (36.4%)		
Degree				
A specialist	31 (50%)	31 (50%)	0	1
An intern	24 (50%)	24 (50%)		
Area of practice				
Cardiopulmonary Rehabilitation	3 (60%)	2 (40%)	5.12	0.27
General Physical Therapy	37 (45.1%)	45 (54.9%)		
Neurological Rehabilitation	1 (33.3%)	2 (66.7%)		
Orthopedic Rehabilitation	9 (64.39%)	5 (35.7%)		
Pediatric Physical Therapy	5 (83.3%)	1 (16.7%)		
Working hours				
1-8 hours	49 (49.5%)	50 (50.5%)	0.1	0.75
More than 8 hours	6 (54.5%)	5 (45.5%)		

χ², Chi squared value; p value, Probability value

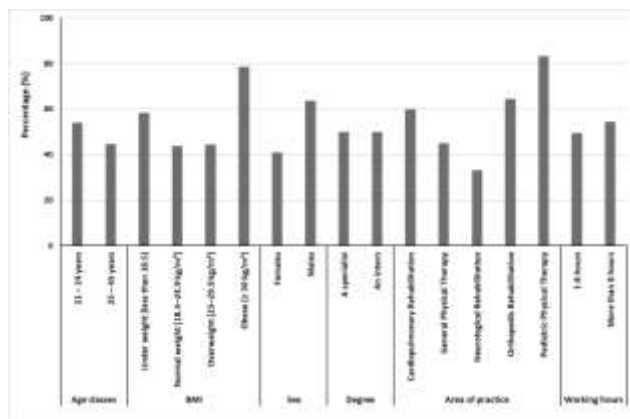


Fig. 2: The frequency of psychological injury with subject characteristics.

DISCUSSION

The purpose of this study was to determine the psychological impact of COVID-19 among physiotherapists in western KSA. The results revealed that there was bad impact on psychological aspects. The prevalence of anxiety/distress increased by 50% with a significant association with sex. According to this, male physiotherapists had a higher frequency of injuries than female physiotherapists.

The results of the current study showed that there is a high prevalence of anxiety/distress associated with the COVID-19 outbreak among physiotherapists. The estimated prevalence was 50%. These results are in line with other studies that illustrated the prevalence of anxiety and depression in the time of COVID-19 among physical therapists. One study was performed in the early months of COVID-19 to study the psychological impact of the epidemic on physiotherapists showed that a significant percentage of physical therapists had symptoms of anxiety and depression. The prevalence of anxiety and depression was 32.3 and 18.5% respectively and those percentages are higher than the national prevalence of anxiety and depression which are 9.3% and 5.0%, respectively¹⁰. One qualitative study among physical therapists in Spain that involved 30 individuals showed that the COVID-19 outbreak was described by them as an unexpected war. It was common to identify them as the call of duty and working in wartime. The study reached a conclusion that the healthcare system was not prepared for such an epidemic. This led to a significantly

stressful effect on all frontline health care professionals that needed well-planned and organized support¹¹.

Our results are in line with other studies that showed a high prevalence of anxiety and depression in the time of COVID-19 among healthcare workers. The negative effect of COVID-19 pandemic on mental health among healthcare personnel was confirmed in a systematic review that focused on Asia. The study showed that COVID-19 was associated with having mental exhaustion, burnout, fear, depression, and anxiety among healthcare workers. Moreover, it showed that those psychological impacts might have affected patient safety¹². The high prevalence of anxiety among healthcare workers during the COVID-19 pandemic was confirmed by a systematic review with meta-analysis performed by Santabárbara et al. (2021)¹³ and included 71 studies. They estimated the prevalence of anxiety among healthcare workers to be 25%. The highest prevalence was among frontline healthcare workers, 34% while that among nurses was 27% and among doctors was 17%. This study emphasized the importance of providing psychological support to healthcare workers during epidemics especially the frontline workers. Other numerous studies confirmed the significant psychological effect of COVID-19 on health care workers as in a rapid review of the published literature regarding the mental health of health care workers during this pandemic including 87 papers showed variability of the prevalence of different mental problems. The prevalence ranged between 7.0-97.3% for anxiety, 10.6-62.1% for depression, 2.2-93.8% for stress, and 3.8-56.6% for post-traumatic stress. Based on the high prevalence of different psychological illnesses¹⁴. In contrary to what was observed in the current study that the occurrence of psychological injury in the form of anxiety and distress was higher in the males than the females, Batra et al., showed higher level of anxiety and depression for females, nurses, and frontline responders. They recommended adopting an intervention to provide psychological support and increased resilience of healthcare workers¹⁵. Also, the higher level of anxiety among female healthcare workers was also reported in a study in Turkey by Yildirim et al.¹⁶ and in a meta- analysis including 13 studies with total of 33,062 participants¹⁷.

Our study showed that much physical therapist thought that anxiety/distress related to COVID-19 affected their ability to provide services to patients at different degrees. In line with that, the effect of COVID-19 pandemic on physiotherapists, their patients, and physiotherapy services has been illustrated by Muhammad and Musa¹⁸ who showed that the pandemic affected the physiotherapists mentally, physically, and caused a reduction in the efficiency of treatment. The same effect was also observed

in other countries as 73% of physiotherapists had their work activities interrupted in one study in Portugal¹⁹. This effect of COVID-19 pandemic on physiotherapy services led to thinking about solutions to provide the services²⁰.

Recommendations: Based on the observed results of the psychological impact during the pandemic, we recommend that each hospital or physiotherapy unit should arrange the workload so that each physical therapist should have a specific number of cases per work shift. We also recommend that work shifts include specified resting times to ensure that the practitioners do not suffer from burnout. During critical situations as pandemics, each hospital should have a psychological support unit that monitors the psychological wellbeing of the healthcare workers and provides the suitable support whenever needed.

Limitations: Although important results have been achieved, our research still has some sensitive limitations. The sample does not include all physical therapists working in western Saudi Arabia. More than half of the samples come from Mecca.

CONCLUSION

The COVID-19 pandemic had a bad effect on psychological aspect of physiotherapists in western KSA. The rate of the psychological impact of the COVID-19 pandemic found higher in male physiotherapists than female.

Acknowledgments: The authors had no Acknowledgments

Conflict of interest: The authors declared no potential conflicts of interest with respect to publication of this article.

Funding: No funding support for this study .

REFERENCES

- World Health Organization (WHO). Retrieved from: <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>. (Accessed on 2020 Apr 15).
- Van Doremalen N, Bushmaker T, Morris D H, Holbrook M G, Gamble A, Williamson B N, Munster V J. Aerosol and surface stability of SARS-CoV-2 as compared with SARS-CoV-1. *New Engl J Med*. 2020; 382(16), 1564-1567.
- Guan W J, Ni Z Y, Hu Y, Liang W H, Ou C Q, He J X, Zhong N S. Clinical characteristics of coronavirus disease 2019 in China. *N Engl J Med*. 2020; 382(18), 1708-1720.
- Ministry of Health. (2021, February 15). COVID 19 Dashboard: Saudi Arabia. Retrieved from <https://covid19.moh.gov.sa/>
- Brooks S K, Webster R K, Smith L E, Woodland L, Wessely S, Greenberg N, Rubin G J. Rapid review. *Lancet*. 2020; 395, 912-920.
- Jeong H, Yim H W, Song Y J, Ki M, Min J A, Cho J, Chae J H. Mental health status of people isolated due to Middle East Respiratory Syndrome. *Epidemiol health*. 2016; 38, 1-7.
- World Health Organization (WHO). Mental Health and Psychosocial Considerations during the COVID-19 Outbreak. Available online: <https://www.who.int/docs/default-source/coronaviruse/mental-health-considerations.pdf> (accessed on 17 April 2020).
- Salik Y, Özcan A. Work-related musculoskeletal disorders: a survey of physical therapists in Izmir-Turkey. *BMC Musculoskeletal Disord*. 2004; 5(1), 1-7.
- Reilly S E, Zane K L, McCuddy W T, Souliard Z A, Scarisbrick D M, Miller L E, Mahoney Iii J J. Mental health practitioners' immediate practical response during the COVID-19 pandemic: Observational questionnaire study. *JMIR Ment Health*. 2020; 7(10), e21237.
- Yang S, Kwak S G, Ko E J, Chang M C. The mental health burden of the covid-19 pandemic on physical therapists. *Int J Environ Res Public Health*. 2020 ; 17(10), 3723.
- Palacios-Ceña D, Fernández-de-Las-Peñas C, Palacios-Ceña M, de-la-Llave-Rincón A I, Florencio L L. Working on the frontlines of the COVID-19 pandemic: A qualitative study of physical therapists' experience in Spain. *Phy The*. 2021 ;101(4), p2ab025.
- Thatrimontrichai A, Weber D J, Apisarnthanarak A. Mental health among healthcare personnel during COVID-19 in Asia: A systematic review. *J Formos Med Assoc*. 2021; 120(6), 1296-1304.
- Santabárbara J, Bueno-Notivol J, Lipnicki D M, Olaya B, Pérez-Moreno M, Gracia-García P, Ozamiz-Etxebarria N. Prevalence of anxiety in health care professionals during the Covid-19 pandemic: A rapid systematic review (on published articles IN Medline) with meta-analysis. *Prog Neuropsychopharmacol Biol*. 2021;107, 110244
- Major A, Hlubocky F J. Mental health of health care workers during the COVID-19 pandemic and evidence-based frameworks for mitigation: A rapid review. *medRxiv*. 2021;01.03.21249166.
- Batra K, Singh T P, Sharma M, Batra R, Schvaneveldt N. Investigating the psychological impact of COVID-19 among healthcare workers: a meta-analysis. *Int J Environ Res Public Health*. 2020; 17(23), 9096.
- Yildirim T T, Atas O, Asafov A, Yildirim K, Balibey H. Psychological status of healthcare workers during the Covid-19 pandemic. *Age*. 2020; 20(30), 31-40.
- Pappa S, Ntella V, Giannakas T, Giannakoulis V G, Papoutsis E, Katsaounou P. Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. *Brain Behav Immun*. 2020; 88, 901-907.
- Muhammad D G, Musa J S. Impact of the corona virus disease 2019 pandemic on physiotherapy services in Nigeria. *J Health Res*. 2021; 35, 369–373.
- Minghelli B, Soares A, Guerreiro A, Ribeiro A, Cabrita C, Vitoria C, Antunes R. Physiotherapy services in the face of a pandemic. *Revista da Associação Médica Brasileira*. 2020; 66, 491-497.
- Turolla A, Rossetini G, Viceconti A, Palese A, Geri T. Musculoskeletal physical therapy during the COVID-19 pandemic: is telerehabilitation the answer?. *Phy the*. 2020; 100(8), 1260-1264.