

## **Knowledge and Perceptions about Covid-19 among Physiotherapists in Pakistan- A Cross-Sectional Survey**

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### **ABSTRACT**

*The whole world is experiencing the worst infectious and contagious Corona Virus (COVID-19) disease. An understanding of the disease among physiotherapist may result in prevention of rapid spread of infection and better rehabilitation. The aim of this study is to evaluate the knowledge and perception about COVID-19 among physiotherapist in Pakistan. A cross-sectional, web-based study was conducted among physiotherapist about COVID-19 during the period of January to February 2021. A 24-item survey instrument was adopted and distributed randomly among physiotherapist by using social media; it required 5-10 minutes to complete. Knowledge and assessment were assessed on the basis of percentage. A total 193 participants were completed the survey questionnaire among which majority were females (61%) and (34.2%) were males. (53.9%) participants got information by social media. Physiotherapists have good knowledge about COVID-19 spread (92.2%), incubation period (92%) and symptoms onset (73.1%). Regarding perception of COVID-19, (92.7%) physiotherapist perceived that wearing a mask can protect infection but showed poor perception regarding treatment such as antibiotics (50.8%) and vaccines (20.2%) respectively. We have identified significantly good knowledge levels of participants but poor perception about Corona virus (COVID-19) among physiotherapists of Pakistan through this study. As the threat is continuously emerging globally, the educational campaigns like seminars and symposiums are urgently needed.*

**Keywords:** COVID-19 ,SARS-CoV-2, Knowledge, Perception, Physiotherapists, Web-Based Survey

### **INTRODUCTION**

The whole world is experiencing the worst infectious and contagious Corona Virus (COVID-19) disease. Patel et al described that the transmission of this virus from one person to another is increasing illness and creating pandemic situation. [1, 2]. Tyrell and Bynoe was the first who described corona virus in 1966. They explained That it is morphologically a spherical vision with an outer core shell single Stranded RNA virus which infects humans but mainly animals. Another study Revealed that these viruses can be subdivided into four families namely alpha, Beta, gamma and delta. Among all the types of corona viruses, type delta severely Infects humans and lead to death. [3, 4], Chughtai et al, explained the severity of this epidemic in Pakistan as a biggest Health challenge for the government and healthcare professionals. They have Reported the data of recovered and asymptomatic cases based on polymerase chain Reaction but due to lacking of resources it is an assumption that some cases Remains unreported [5]. Another study

described that there is a significant role of Physiotherapy in management and rehabilitation of covid-19 patient with Respiratory distress in ICU by providing chest physiotherapy to facilitate Respiratory health and lung functioning [6]. Another study showed that the Symptoms of this virus is similar to the influenza like fever, flu, cough and sore throat but it is important to identify the symptoms clinically [7]

The whole world is facing Coronavirus infectious disease (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). (1) The World Health Organization (WHO) on 11<sup>th</sup> March 2020, has declared the novel coronavirus (COVID-19) outbreak a global pandemic. CoV is a zoonotic pathogen that can be transmitted via animal-to-human and human-to-human interactions (5) COVID-19 is spread by human-to-human transmission through droplet, feco-oral, and direct contact and has an incubation period of 2-14 days <sup>(8)</sup>

Patients suffering from COVID-19 clinically present with mild to moderate symptoms around which 15% of the patient with severe pneumonia and about 5% with acute respiratory distress syndrome (ARDS), septic shock or multiple organ dysfunction (2). The most common symptom was "Profound fatigue" in most people with a wide range of other symptoms included cough, sneezing, shortness of breath, body ache, and chest pain and heaviness. Other symptoms may present like skin rashes, palpitations, fever, headache, and diarrhea. (3) Many studies showed that the patient remains asymptomatic in some cases. Both symptomatic and asymptomatic individuals may transmit the virus within 2–14 days after exposure. <sup>(4)</sup>

It is important to evaluate the knowledge and perception about this Covid-19 pandemic, associated with management among physical therapist working in healthcare institution in Pakistan.(6) The World Health Organization(WHO) has initiated several online training sessions and materials on COVID-19 to improve preventive strategies, including awareness and training in healthcare workers in preparedness activities <sup>(7)</sup>

Due to overcrowding, absence of isolation facilities, and contaminated environment by insufficient knowledge, the transmission of Covid-19 significantly increasing among healthcare workers including physical therapists directly influence practices and lead to delayed diagnosis, poor infection control practice, and spread of disease. The purpose of this survey was to evaluate the source of information, knowledge and perception of the risk of infection with Covid-19 among physiotherapist of Pakistan. <sup>(8, 9)</sup>

## **LITERATURE REVIEW**

M. Saqlain et. al in May 2020, conducted the study to reveal the knowledge and attitude of healthcare professionals of Pakistan as well as their practices and barriers to control infection through COVID-19 patients. For this study, they conducted a crossectional survey by using self-administered questionnaire among healthcare professionals. The results showed that the knowledge was good and positivity in attitudes of healthcare professional regarding COVID-19 and also found that pharmacist have good practices. The study also showed that there is a major barrier in infection control was the availability of material and knowledge was limited. They concluded that healthcare workers have good knowledge and attitude but have limitations in practicing the infected patients which is producing a gap between knowledge and practicing. <sup>(1)</sup>

Another crossectional study was conducted by by Akshaya Bhagavatula et. al in 2020 to investigate the worldwide knowledge and perceptions of healthcare professionals about COVID-19, they conducted a web based study among healthcare professionals in March 2020 by developing and distributing randomly a 23 item survey on social media. 453 healthcare professional were participated among which 234 were male and 137 were doctors and 134 were medical students. Most participants were aged between 25-34years. The results of the study should the poor knowledge of symptoms and transmission

but the perception was positive about COVID-19 among healthcare professionals. They were also concluded that as the threat of COVID-19 is emerging globally, it is necessary to improve knowledge of healthcare workers by further studies.<sup>(2)</sup>

Hamed et. al in March 2020, conducted the cross-sectional study to assess the knowledge, perception and attitude of medical and non-medical students of Jordan. For this purpose they developed a structured questionnaire with 592 total students. The results of this study reflected that there is no significant difference between knowledge and perceptions of medical and non-medical university students because the main source of knowledge was social media. They were further concluded that detailed measures and awareness campaigns were required to improve knowledge, attitude and perception among students.<sup>(3)</sup>

Marzieh et.al assessed the knowledge and anxiety of nurses of Shiraz, Iran during COVID-19 outbreak in 2020. They have conducted the study among 85 participants by using self-administered questionnaire to measure the level of anxiety and awareness of nurses. They found that 56% of the nurses have good knowledge about COVID-19 onset, symptoms, transmission and prevention. Nurses received this information from World Health organization (WHO) and Ministry of Health of Iran majorly. The study concluded that WHO and Ministry of Health needed to provide more information to the medical professionals against infectious diseases.<sup>(4)</sup>

The cross-sectional study was conducted by Ahmed et.al in 2019 about middle east respiratory syndrome (MERS-Covid) knowledge and attitude of healthcare workers of Saudi Arabia. For this study, a questionnaire possessed total 20 questions was used among 870 healthcare workers at hospitals and centre at Najran. The results of the study showed that physicians and nurses have good knowledge as compared to other healthcare professionals. On the basis of results, they have concluded that at Najran, the professionals have good knowledge about (MERS-Covid) symptoms and spread and also revealed that physicians and nurses have more knowledge than other professionals so, medical campaigns are needed to further improvement of knowledge to get the better results.<sup>(5)</sup>

In Nepal, knowledge, practice and attitude of healthcare workers during Covid-19 pandemic was determined by Dil K. Limbu et. al in November 2020. For this purpose, they developed a questionnaire for total 103 healthcare workers responses which contains questions related to their knowledge, attitude and practices. The results of the study depend on the participants age, as more aged participant has more good knowledge as well as participants also have positive attitude towards Covid-19. The study concluded that healthcare workers have good knowledge and practices but there is a need of more protective measures and training for improving attitudes of healthcare workers.<sup>(6)</sup>

Kushalkumar H. Gohel et. al was conducted a cross-sectional survey in February 2020 to determine the perception and knowledge of allied sciences students about Corona virus. The study included allied health sciences students including pharmacist, dentist, physiotherapist and nurses of India. The results of this survey showed that majority of the participants have sound knowledge about symptoms but have less knowledge related to severity of Covid-19. Also showed positivity in perception and control of spreading. Hence, it is concluded that higher the knowledge of healthcare professionals can better prevent community from this pandemic.<sup>(7)</sup>

Suliman Y. et al conducted a cross sectional survey in Saudi Arabia among the dental professionals regarding severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease 2019 (COVID-19). They premeditated dentists as high risk profession for infection and analyze the potential gaps in knowledge that may affect health and safety in dentists work environment.

Dentists seem to be congruent about their knowledge of the latent period of SARS-CoV-2. Nevertheless, knowledge of viral viability and suggested hand wash time was notably varying among the dental professionals. All the dental professionals are highly disquiet toward suspected COVID-19 patients. They suggested, there is a need of pandemic awareness campaigns among health professionals <sup>(14)</sup>.

A study among Nigerian population regarding knowledge, attitude, and practice towards COVID-19 was done by Francis Enenche Ejeh et al. they concluded that Health Care Workers in Nigeria had a great knowledge towards COVID-19 and Nigerian people possessed a positive attitude and good practice towards COVID-19. Nevertheless; there were some areas where knowledge is not sufficient, negative attitudes and unsatisfactory practices were noticed. They suggested ongoing public health education of Health Care Workers on SARS-COV-2 infection control and prevention. <sup>(15)</sup>

An online survey in February 2020 has been conducted in China to explore status quo and the factors influencing of residents' knowledge, attitude and practice of residents in the prevention and control of COVID-19 by using a self-designed questionnaire and distributed among residents. A positive attitude of residents towards COVID-19 prevention and control is seen. The knowledge and practice have been popularized to a certain extent, but there are still no sufficient understanding and the adoption of applicable preventive measures. <sup>(16)</sup>

A cross-sectional national survey in April-May 2020 related to the COVID-19 outbreak Knowledge, attitudes and practices among Romanian oncological patients has been completed. A self-designed questionnaire consisting of 64 items related to the coronavirus was applied in seven Romanian hospitals. Results of the study showing a good COVID-19 knowledge among active cancer patients associated with appropriate practices and positive attitudes. <sup>(17)</sup>

A comparative Middle East survey was done to investigate risk perceptions regarding the coronavirus disease 2019 (COVID-19) outbreak, among the general population. Data was collected by using a standardized risk perception assessment questionnaire, in April 2020. The result showed that the perception, susceptibility and the extent of anxiety of COVID-19 significantly higher among participants from Saudi Arabia as compared with participants from Egypt and Jordan. <sup>(18)</sup>

In the academic tertiary care centre Saudi Arabia, a study is aimed to assess the knowledge, attitudes and intended practices of healthcare workers (HCWs) during the initial period of the COVID-19 pandemic and they compare level of anxiety with previous findings during the Middle East respiratory syndrome coronavirus (MERS-CoV) outbreak in 2015. They used an adapted version of previously published MERS-CoV questionnaire to the cohort of HCWs at a tertiary hospital in Saudi Arabia. A conclusion was made that shows an association with MERS-CoV with increased knowledge and adherence to protective hygienic practices, and reduction of anxiety towards COVID-19. <sup>(18)</sup>

## **METHODOLOGY**

### **Study Design and Duration**

A web-based, cross-sectional study was conducted by using a 'Google Form' to obtain responses from Physical therapist of Pakistan during January to February 2021.

### **Development and Distribution of Survey**

A 24-item survey questionnaire was used which was developed by WHO (World Health Organization), covered the domains of physiotherapists demographics, general awareness, information sources, knowledge, prevention and perceptions related to COVID-19. The draft survey instrument was made

accessible through a link and was distributed through social media platform such as Whatsapp, Facebook and outlook to physiotherapist of different hospitals, medical colleges and clinics.

### **Sampling Method**

In this study, the knowledge and perception of physiotherapists in Pakistan regarding COVID-19 were assessed through a web-based cross-sectional survey. The initially targeted sample size was 200 participants, calculated to ensure a 99% confidence interval with a 5% margin of error, which is appropriate for generating statistically reliable results in population-based studies. Despite the challenges posed during the COVID-19 pandemic—such as restricted mobility, limited in-person contact, and workload of healthcare professionals—the survey was successfully completed by 193 physiotherapists from various regions of Pakistan. This number exceeds the minimum expected threshold of 150 responses and represents a highly acceptable response rate under pandemic conditions. All 193 responses were properly completed and included in the analysis, thereby enhancing the reliability and validity of the findings.

### **Content of the Survey Instrument**

The survey instrument comprised of 24 questions which took 5-10 min to complete. The survey was divided into three parts, consist of participant information, informed consent form and questionnaire. In total, participant demographics questions were 7 and 24 knowledge-perception assessment questions were asked consists of the core information such as, general knowledge about novel Corona virus (11 items), source of information (1 item), precautions and risk prevention (1 item) and perceptions of COVID-19 (11 items).

### **DATA ANALYSIS**

Data were collected, downloaded and entered into Microsoft Excel and cross checked for an error to maintain its accuracy. Descriptive statistics was applied to calculate proportions and frequencies. Statistical analysis was performed using IBM SPSS software for Windows version 27. The chi-square test was used to investigate the level of association among study variables. A *p*-value of less than 0.01 was considered statistically significant.

### **RESULTS**

#### **Response Rate**

A total of 193 physiotherapists participated and completed the study questionnaire (100% response rate).

#### **Demographics**

Table.1 shows that among 193 participants, including 118 (61%) female and 75 (34.2%) male.

#### **Recent Update Of Knowledge**

#### **Source of Information**

When we asked about the participants' source for reliable information about COVID-19, the primary sources of information about COVID-19 were social media [Table.2]. (53.9%) of the participants reported that they used social media (Facebook, Twitter, Whatsapp, YouTube, Instagram, Snapchat) to obtain information about COVID-19. Moreover, nearly 36.3% of the participants used Television for COVID-19 information. Other sources were 5.2%, print media 2.6% and the least source was college that is 2.1%.



### Knowledge about Covid-19

Table 3 shows the knowledge about COVID-19 among Physiotherapist. 60.1% have good knowledge about COVID-19 . Approximately, 92.2% knew that it is contagious in nature. We identified significantly good knowledge about Incubation period (92%) but poor knowledge regarding it's origin and similarity ( 35.2% and 16.6%). 69% of participants agreed that Older/geriatrics are more vulnerable and also some patients remain asymptomatic(86%) while (73.1%) think that symptoms could lead to pneumonia, respiratory failure, and death. However, the participants' knowledge about questions related to the spread and diagnostic test of COVID-19 was poor (29.5% and 38.3%).

### Prevention

Table-4 shows a majority of the physiotherapists (89.6%) agreed that washing hands , covering of nose and mouth while coughing, and maintaining 1 meter distance could help to prevent transmission of COVID-19.

### Perceptions about COVID-19

Table-5 Approximately (92.7%) believe that wearing a surgical mask can protect COVID-19 infection. Whereas, (22.3%) have poor perception about parcels received from COVID-19 reported areas. However, approximately (50.8%) physiotherapist perceived the role of antibiotics in COVID-19 treatment while majority were not clear about the role of vaccine and herbal medicine (20.2% and 37.3%). A significant proportion of participants perceived that thermal scanner to detect fever are helpful (71.5) but role of ultraviolet lamp in killing virus was (46.1%). Some believe that spraying alcohol or chlorine disinfected and prevent spread of infection(32.2%). The perception about eating garlic and effects of climatic conditions are not clear (35.2% and 43%).

	Frequency	Percent	Valid Percent
Female	118	61	61
Male	75	34.2	38.9
Total	193	100.0	100.0

TABLE -4.4 GENDER OF PARTICIPANTS

TABLE-4.5 SOURCE OF INFORMATION

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	College	4	2.1	2.1
	Other	10	5.2	7.3
	Print Media	5	2.6	9.8
	Social Media	104	53.9	63.7
	T.V	70	36.3	100.0
	Total	193	100.0	100.0

TABLE-4.5 KNOWLEDGE ASSESSMENT

Knowledge about novel Coronavirus			
Question	Good Knowledge (%)	Poor Knowledge (%)	No Knowledge (%)
Which of the following is novel Coronavirus?	60.1	14	25.9
Is COVID-19 contagious?	92.2	5.7	2.1
What is the origin of COVID-19?	35.2	56.5	8.3
What is the incubation period of COVID-19?	92	7	1
Is there any similarity between COVID-19, SARS-CoV and MERS-CoV?	16.6	61.7	21.8
Who are more prone to COVID-19?	69	1	30
Do you know the fatality rate of a person infected with COVID-19?	38.3	43.6	18.1
Do you think a person infected with COVID-19 can remain asymptomatic?	86	10.9	3.1
What are the symptoms of Severe COVID-19?	73.1	26.4	0.5
How does the COVID-19 spread?	29.5	47.2	23.3
What are the diagnostic tests for COVID-19?	38.3	55	6.2

TABLE-4.6 WAYS OF PREVENTION FROM COVID-19 INFECTION

	Frequency	Percent
All of the above	173	89.6
Avoid personal contact	5	2.6
Valid Maintain 1 meter distance between yourself and anyone who is coughing or sneezing	3	1.6
Washing hands with alcohol based sanitizer	12	6.2
Total	193	100.0

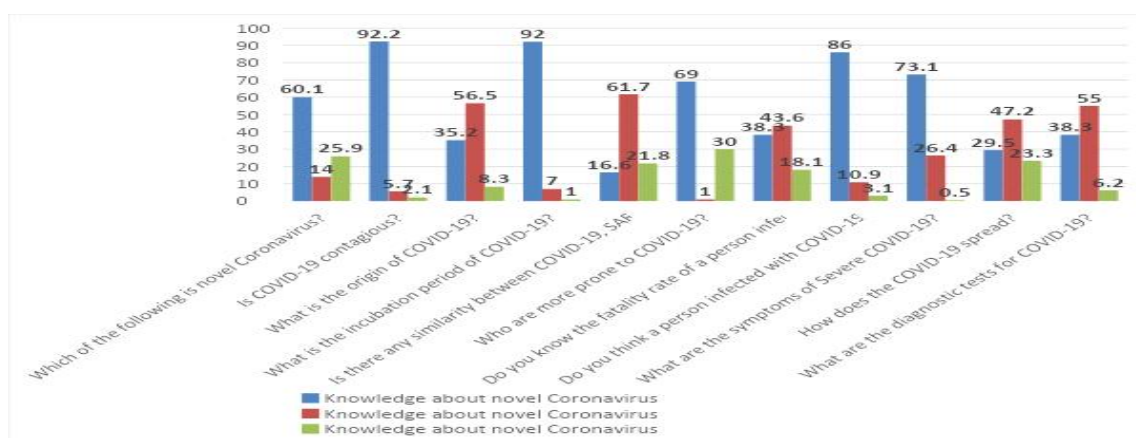


FIG. 4.7:

## KNOWLEDGE ABOUT COVID-19

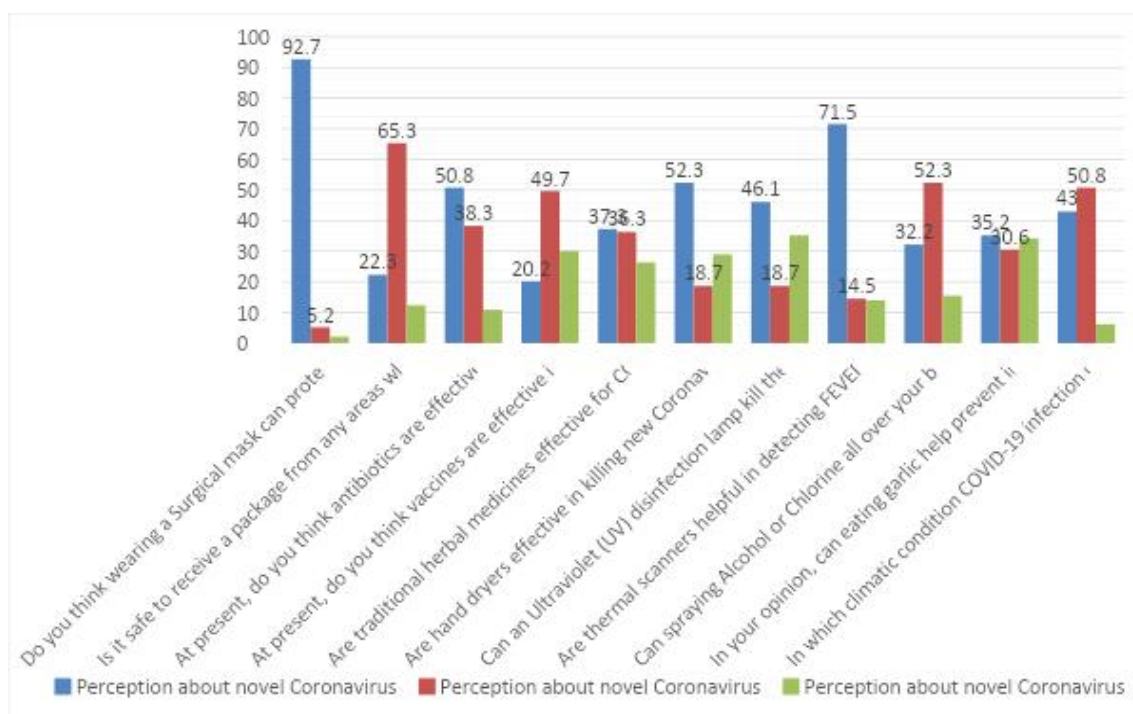


FIG.4.8: PERCEPTION ABOUT COVID-19

## DISCUSSION

COVID-19 is an emerging infection that places a significant threat to the health globally. As the Knowledge about COVID-19 plays a major role in preventing the spread of infection therefore this study aimed to evaluate the knowledge and perception about COVID-19 among physiotherapist in Pakistan.

The findings of this survey shows that most of the physiotherapists (53.9 %) obtained knowledge about COVID-19 via social media similarly another survey conducted by Saqlain et al. reported social media to be the major source of information among healthcare professionals of Pakistan. (1)

Although this study shows an overall good knowledge and perception regarding the novel infection in the population of Pakistan, however certain demographics are found to have less knowledge than the other showing that Pakistanis bearing diversified attitudes towards the novel COVID-19.

Most of the participants were having good knowledge about COVID-19, however some participants have average knowledge and others reported poor knowledge about COVID-19. However previous studies in Pakistan reported an average knowledge of COVID-19 (15, 16). Evidence shows that good knowledge can significantly contribute to the control of infection spread (2)

Most of the participants (60%) correctly identified and had good knowledge about novel Coronavirus however (25.9%) reported no knowledge hence it is important to spread information so that infection could be prevented.



Almost of the physiotherapists (92%) correctly reported the incubation period of COVID-19, however only 1 % had no knowledge regarding incubation. In contrast studies conducted in the neighbouring countries like China and Iran documented that only 66.40% and 85.4% of the participants were aware of the incubation period respectively. (3, 4)

The results of the survey shows that only (29.5%) of the physiotherapists were aware of the COVID-19 spread/ transmission. However studies conducted by Zhong BL et al. reported that 98.85% of the participants have knowledge regarding the transmission modes of novel Coronavirus (5). Hence it is important that physiotherapists must be given information regarding the transmission so that infection could be prevented.

Large proportion of the physiotherapists (69%) documented that geriatric population is more prone to COVID-19. This finding is supported by another study which shows that 95% of Egyptians also believe that geriatric population is at more risk (6) . Additionally public of the United States (US) also believe older adults at more risk or even death from COVID-19. (7)

Findings of this survey shows that majority of the physiotherapists were aware of the preventive measures of COVID infection spread

Prevention of COVID-19 Physiotherapists were further inquired to assess their beliefs towards prevention of COVID-19. Majority of all the physiotherapists (100%) positively agreed to the ways of preventing COVID-19 as prescribed by WHO. These precautionary measures are, cleaning hands with alcohol based sanitizer, avoid personal contact and maintaining at least 1 m distance (Social distancing).

Perception about novel coronavirus A high majority of the physiotherapists (92.7%) believe that wearing a surgical mask is a considerable approach to prevent COVID-19 while some (7.3%) of the physiotherapists do not agree with the statement. A few number of the physiotherapists (22.3) believe that it is not safe to receive a package from areas where a case of COVID-19 has been reported. About half of the physiotherapists (61.7%) were found to have a wrong perception that antibiotics are not effective in COVID-19 treatment as well as 49.7% rightly agreed that vaccines are sufficient to prevent COVID-19 transmission at present. Notably, one third of physiotherapists did not know that thermal scanner could help to detect fever in a person infected with COVID-19.

To our knowledge, no published study has evaluated the knowledge and perceptions about COVID-19 among physiotherapists in Pakistan. Hence this study will play a significant role in order to prevent the spread of COVID-19 infection also emphasizes the need to raise further awareness.

## **LIMITATION AND CONCLUSION**

### **Limitations**

In this study, we have used already developed questionnaire. This study has few Limitations. The study followed a cross-sectional study design, so causal inferences may not be established. If we compared with face-to-face interviews, online survey has Limitations including multiple biases and accuracy of data.

### **Conclusion**

We identified significantly good knowledge levels of participants but discrepancies in perception about Corona virus (COVID-19) among physiotherapists of Pakistan. As the threat is continuously emerging globally, the educational campaigns like seminars and Symposiums are urgently needed countrywide.

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