Short Communication

Knowledge, Attitude and Practice of Rehabilitation Specialists During the Pandemic of Novel Corona Virus

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Abstract

Background: Globally, the increased transmission rate of the novel Corona virus has created unprecedented state of emergency especially among the healthcare professionals where only preventive measures can control the current alarming situation.

Objective: The aim of our study is to analyze the acquisition of knowledge, attitude and practice among the rehabilitation specialist of Karachi, Pakistan.

Method: An online cross-sectional survey was conducted during April to May 2020 using the electronic distribution of self-administered structured questionnaire among rehabilitation specialists across Karachi, Pakistan. The questionnaire comprised of four sections (Demographics, Knowledge, Attitude and Practice). Respondent's demographic details were documented in descriptive whereas Chi-Square and Multinomial Logistic Regression were applied in inferential statistics.

Results: A total of 384 rehabilitation specialists were included, Physiotherapists (n=299), Occupational Therapists (n=81), Behavioral Therapists (n=3) and Speech Therapists (n=1) from different districts of Karachi respectively. The good knowledge was observed in 53% (n=205), positive attitude 60.1% (n=231) whereas good practice reported in 71.8% (n=276) towards COVID-19. Furthermore, the total KAP score was significantly predicted by knowledge ($p<0.001$) and attitude ($p=0.01$) scores.

Conclusions: It was concluded that rehabilitation specialists possessed good knowledge, positive attitude and appropriate practice of preventive measures towards COVID-19. However, the proportion of fair and poor practice can effectively control by following the Centre of Disease Control and Prevention and World Health Organization guidelines to overcome the pandemic.

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Introduction

At the end of 2019, Wuhan City of China reported an outbreak of a febrile respiratory disease (SARS-CoV-2).[1] The outbreak has emerged as a global health threat as it has a rapid progression to other states inflicted worst economic crisis with over 367,255 deaths among 213 countries and territories, surpasses to 6 million cases worldwide.[2,3]

In 2020, larger outbreak was reported in the West, including USA and Italy while in North, highest number of mortalities was reported in Iran.[4,5] Pakistan's first case of COVID-19 was reported on 26th February 2020.[5] By 31st May 2020, Pakistan has 69,496 confirmed cases and 1,483 associated deaths.[6]

The transmission of novel Coronavirus may be employed by direct or indirect methods due to its biochemical and molecular properties[7]. The virus can

be transmitted from person to person through respiratory droplets (direct contact) that may travel for up to 6 feet distance or less in the air and through indirect contact such as fomites for the duration it is viable on environmental surfaces or aerosols for longer than 6 feet distances in the air.[7,8] The infection is established when it is reached to eyes, nose or mouth of a susceptible host that may develop symptoms after 14 days since infection.[8,9] Moreover, evidence stated that age and associated comorbidities such as cardiovascular diseases and diabetes may be one of risk factors for severe patients as dysfunctional immune system may manifest typical and atypical symptoms like fever, fatigue, cough, dyspnea with mild, moderate and severe pneumonia and in more critical cases, Acute Respiratory Distress Syndrome (ARDS), septic shock or death.[8,10,11] However, there is currently no cure nor vaccine for this virus, yet only practical methods of precaution is the mainstay critical intervention to prevent transmission of the virus although, its pathophysiology, transmission, prevention and treatment are still being studied.[7,12] According to WHO, prevention of person-to-person transmission by protecting close-contact and healthcare workers from being infected are primary preventative measures including hand washing, maintaining social distance and respiratory hygiene.[13]

Healthcare professionals (HCPs) of all levels and fields including Rehabilitation Professionals (RPs) are primarily serving as a front liner in COVID-19 pandemic are highly susceptible to the transmittable pathogen and adverse health risks owing to frequent exposure to the infected patients.[14] To reduce COVID-19 risk exposure, rehabilitation services has been re-prioritized to cater patients and workers ensuring high standards of precautionary measures to maintain care and safety during this period.[15] Therefore, protection of HCPs is an important aspect that requires updated knowledge regarding transmission, symptoms and precautionary measures as poor understanding regarding these aspects may result in delayed identification and management of the disease subsequently leads to increase spread of infections.[16,17] Amidst of Coronavirus pandemic, several guidelines and online courses/training have been developed by World Health Organization, Centre of Disease Control and Prevention as well as Governmental Organizations in various countries to raise awareness and enhance knowledge among HCPs.[18,19] Furthermore, RPs have also received extended infection control training for the management of COVID-19 patients updating themselves with the recent evidence based clinical practice anticipating the functional rehabilitation of the patients with inputs from the multi-disciplinary therapy team including physiotherapists, occupational therapists or speech and language therapists etc.[16] Moreover, National Institute of Health (NIH) in Islamabad, Pakistan has also published number of recommendations that is aimed to reduce occupational transmission of COVID-19 among RPs as staff well-being is a key priority during this challenging period so that they may continue their vital management of patients.[20] In addition, educational campaigns have increased awareness on COVID-19 however the practical implementation of knowledge into practice remains unclear. Nevertheless, there is a paucity of literature on Knowledge, Attitude and Practice of RPs towards COVID-19 pandemic.

Therefore, present study is aimed to identify the current status of information among Rehabilitation specialist of Karachi, Pakistan regarding COVID-19. The study will highlight the appropriate information regarding COVID-19 management and prevention among RPs that is crucial in the field.

Methods

A cross sectional survey used STROBE guidelines[21] was conducted between April to June 2020 in the period of peak pandemic situation of Novel Corona virus in Pakistan. As the situation was not feasible for direct contact survey, we collected an online data. An online structured questionnaire through Google form was distributed to Rehabilitation specialist via email and social media platforms like Whatsapp and Facebook. The Rehabilitation specialist (Physiotherapist, Occupational therapist, Speech therapist and other Rehabilitation therapist) residents of Karachi, Pakistan were included in this study. Both Convenience and snow ball sampling technique was used for the selection of the participants. We approached 550 Rehabilitation specialists in which 384 questionnaires were returned. The response rate was 69.8%. The survey questionnaire was self administered and developed from the course material provided by World Health Organization (WHO)[22] on the preven-

tion & control of COVID-19 whereas few questions were also adapted from Peng, et al study.[23] Before collecting the data, the questionnaire was sent to senior assistant professors who have adequate knowledge of research, to provide their opinion if any correction is required as well as conducted pilot study on ten participants, their responses and recommendation were also amended and integrated for its validation. All the participants were informed regarding survey and their consent was taken for the study. This study was approved by Ethical Review Committee of Ziauddin University, 2140520AZREH.

The questionnaire is designed in English with the series of question regarding knowledge, attitude and practice of COVID-19 along with demographic characteristics. The first section of survey is about Demographic information of participants such as (age, gender, occupation, qualification, year of experience, job type, and district of a city) The second section is consist of knowledge of the current pandemic condition including ten essential questions regarding (infectious disease, transmission route, incubation period, susceptibility, clinical feature, infection survival outside the body, preventing infection, distance, isolation and public gatherings). The third section document the attitude of Rehabilitation Specialist towards the COVID-19 considering another seven statements (human to human transmission, successful control of COVID-19, confidence to win, hope to return to work, cautious in religious activities, affect on job and capability to deal in future) whereas the last section is based on 5 statements involving the current practice of Rehabilitation specialist (protection, frontline rescue, protection if contact with COVID positive person, precautionary measures taken outside and while returning home). The Grading score in knowledge section is one point for each corrected answer whereas 0 for incorrect answer. The total knowledge score could be from 0-10, a cutoff level in the attitude section, 2 points for positive attitude, 1 point for neutral and 0 for negative option. The attitude points can be achieved from 14 to 0. In the Practice section, 2 points for proactive, 1 point for neutral and 0 for passive option, 0-10 points can be achieved in this section. The total maximum a person can achieve is 34 points. Cutoff level >80% considered as Good, 60-80% fair, <60% poor in knowledge, attitude and practice scores.

Statistical Analysis

Data was imported to SPSS version 20. Descriptive statistics were applied, frequency and percentages were calculated for categorical data whereas mean and standard deviation for continuous data. Test of normality was analyzed for distribution of data. Chi-square test applied between demographic variables and independent variables. Multinomial logistic regression was analyzed to predict the association between dependent and independent variable. Two tailed P-value <0.05 was considered as significant.

Results

A total of 550 rehabilitation specilaist were approached among which 384 responses were received with a response rate of 69.8%.

Demographic Data

Three hundrend and eighty four responses were divided with respect to different districts of Karachi, Pakistan; Central (34.1%), east 27.6%, south 17.2% Malir 11.2% west 7% and korangi 2.9% respectively (Figure 1). Maximum response (77.9%) was received by physical therapist mostly attaining bachelors degree. Majority of clinicans responded (60.4%) having experience of less than 3 years (31%). The association of sociodemographic association of rehabilitation specialist analyzed with knowledge, attitude and practice score using Chi square test. The significant association was found between knowledge and marital status, occupation ($p<0.05$), whereas with regards to attitude, there is significant association with job category, education and occupation ($p<0.05$) whereas in practice score only gender was found to be significant ($p<0.05$) (Table 1).

Knowledge Towards COVID-19

Almost 99.2% of rehabilitation specialist correctly identified the type of infection and preventing the crowded place for transmission of the virus whereas the incubation period was correctly known among 84.9% individuals only. Nearly 42.4% of respondents assumed that people of all ages are severly suseptible to be affected whereas 57.6% thought of old age. Upto 70% of knowledge of respondants was documented regarding the preventive measures and safe distance that needs to be taken. However nearlly all the therapist emphasized in isolating the patient in their incubation period. An overall mean of 8.5+1.07 (out of 10 score) was documented from the rehabi-

Table 1: *Demographic Details of Participants*

Characteristics	N (%)	Knowledge		Attitude		Practice	
		X^2	p-value	X^2	p-value	X^2	p-value
Gender							
Male	92 (24)	3.1	0.531	5.192	0.878	13.928	0.052
Female	292 (76)						
Age (Mean±S.D)	27.7±4.7						
21-30	318 (82.8)						
31-40	58 (15.1)	102.19	0.532	212.05	0.987	165.30	0.807
41-50	7 (1.8)						
>50	1 (0.3)						
Marital Status							
Single	250 (65.1)	10.601	0.031	4.005	0.947	5.951	0.545
Married	134 (34.9)						
Qualification							
Bachelors	227 (59.1)						
Masters	122 (31.8)	4.026	0.983	58.918	0.001	12.13	0.936
PhD	3 (0.8)						
Others	32 (8.3)						
Occupation							
Physiotherapist	299 (77.9)						
Occupational therapist	81 (21.1)	29.014	0.004	84.057	0.000	22.26	0.384
Speech therapist	1 (0.3)						
Behavioral therapist	3 (0.8)						
Job Category							
Clinician	232 (60.4)	6.164	0.629	35.864	0.016	11.859	0.618
Academic	77 (20.1)						
Both	75 (19.5)						
Years of Experience							
Less than 1 Year	96 (25)						
More than 1 – Less than 3	119 (31)	22.491	0.128	33.73	0.747	32.91	0.239
More than 3- Less than 5	76 (19.8)						
More than 5- Less than 7	31 (8.1)						
More than 7 year	62 (16.1)						

litation responded.

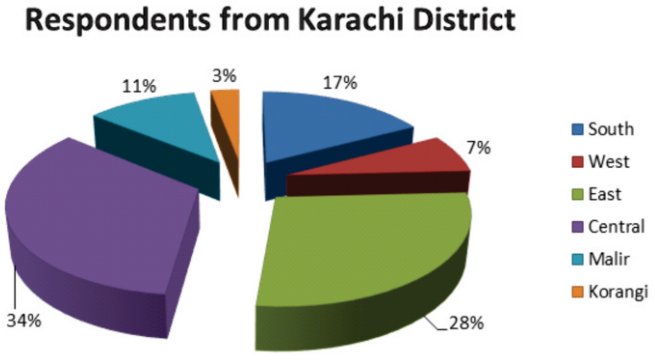

Figure 1: *Shows the Percentage Distribution of Respondents from different Districts of Karachi*

Attitude Towards COVID-19

Approximately 80% of therapist assumed that the nation shall be able to overcome the pandemic condition by practicing the preventive measures but 83.6% had adverse affects on their work. Despite of this fact 85.4% believed in their capability to deal with such emergencies in future. An overall mean of 11.1+1.8 (out of 14 score) was documented from the rehabilitation responded.

Practices Regarding COVID-19

More than 90% of therapist believe to quarantine themselves if any symptom appears or had any close contact with the suspect. Interestingly more than 80% of therapist were willing to work as a frontline rescuer in case of country demand whereas 17.2% of people would consider their family. It was observed that only 66.1% of therapist always wear their PPEs at work places whereas 32.6% wear when in contact with the patient. Contradicting to the preventive measures

13% of therapist only sanitize and do nothing special while returing from work. An overall mean of 8.9+1.1 (out of 10 score) was documented from the rehabilitation responded. The total KAP score attained by the rehabilitation specialist is 28.5+2.5 (out of 34 score).

Total KAP Score of Rehabilitation Specialist

The cut off score obtained for good knowledge was > 80% (8 score), fair knowledge was set at 60%-80% (6-8 score) and poor knowledge was set below 60% (<6). Moreover, for good attitude was > 80% (11 score), neutral attitude was set at 60%-80% (8-11 score) and negative was set below 60% (<8). Furthermore, for good practice was > 80% (8 score), fair practice was set at 60%-80% (6-8 score) and poor practice was set below 60% (<6). Lastly, the cut off obtained for KAP was > than 80% (>27 score), fair KAP was set at 60%-80% (20-27 score) and poor KAP was set below 60% (<20).

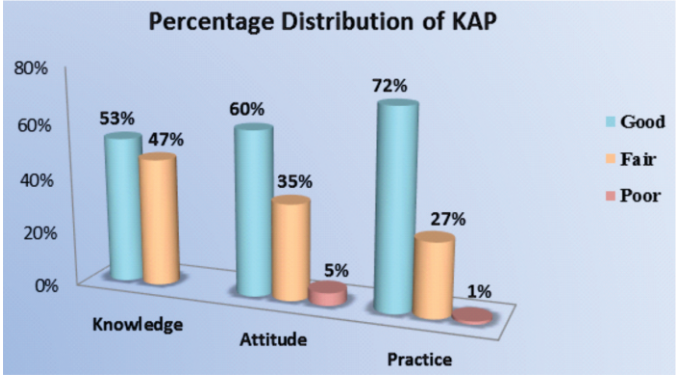

Figure 2 *Shows the Percentage Distribution of Knowledge, Attitude and Practice among Rehabilitation Specialists*

Although 72% of therapist were performing good practices but the knowledge regarding the COVID-19 was compromised (53.3%). In addition to it, 60% of positive attitude was documented confined to only 5% of negatives. (Figure 2) Multinomial logistic regression was analyzed in order to determine Rehabilitation specialist KAP score that can significantly predicts by potential pre-dictors. We conduct a likelihood ratio test to identify either a model is given a real contribution by significant predictors. The -2 log likelihood ratio for the final regression model is significant regarding know-ledge and attitude is 1653.3 ($x^2 = 142.5$, df = 60, $p<0.05$) and 1700.5 ($x^2 = 189.7$, df=150, $p<0.05$) respectively. It represent the predictor is statistically significant showing the full model can predict the outcome variable. However, -2 log likelihood ratio for practice score is 1594.9 ($x^2 = 84.1$, df=105, $p= 0.933$) given the non-significant prediction. (Table 2).

Discussion

This study was conducted in the middle stage of Coronavirus pandemic in Karachi, Pakistan involving the rehabilitation specialists from different districts in which nearly two half of the respondents were Physiotherapists (77.9%), Occupational Therapists (21.1%), Speech and Behavioral Therapists (1.1%) respectively. Findings of this survey reported that majority of rehabilitation specialists (72.6%) have good knowledge, positive attitude and satisfactory practice towards COVID-19. To the best of author's knowledge, this study is first to assess the knowledge, attitude and practice of rehabilitation specialists towards COVID-19 in Karachi, Pakistan. The analysis of respondent's information and factors

Table 2: *Likelihood Ratio Tests*

Effect	-2 Log likelihood	Chi-Square	Df	Sig.
Intercept	1510.816	0.000	0	.
Total knowledge score	1653.320	142.504	60	0.000
Total attitude score	1700.568	189.752	150	0.016
Total practice score	1594.945	84.129	105	0.933

affecting their attitude and practice is crucial to provide a reference for disease prevention among rehabilitation specialists.[24] It was observed that majority of therapists knew about the mode of disease transmission (100%), manifestations (97.9%), isolation period (95.6%) and precautionary measures (99.2%) whereas only (57.6%) and (67.2%) were aware of the severity to disease susceptibility and its survival outside body. However, only (0.3%) respondents demonstrated poor knowledge relating to COVID-19. Similar findings were reported in the study of Saqlain et al[25] that demonstrated good knowledge (93.2%) in majority of healthcare providers towards COVID-19 whom utilized social media (87.68%), seminars and workshop (23.19%) as main source of information. In contrast, Bhagavathula et al and Giao et a reported that Health care professionals HCPs predominantly used social media to attain knowledge regarding COVID-19 although significant proportion of HCPs demonstrated poor knowledge in the study of Bhagavathula et al[24].

While, our study didn't evaluate the source of information and sample was relatively small as compared to the study of Saqlain et al. Moreover, HCPs should carefully seek COVID-19 information from authentic and valid content to avoid malicious or unverified evidence. Subsequent to the findings, (1.6%) and (6.5%) were found to be afraid from the behavior that may amplify disease transmission and amid concerns over working. This showed a considerable impact on mental and social well-being among rehabilitation specia-lists in path to aid the affected people. While (96.6%) and (93.5%) therapists showed positive attitude following precautionary measures such as wearing PPE's, gloves, mask that are imperative in effective prevention with infected patients thereby minimizing the risks.[25] In addition, it is evident that good know-ledge has a probability of positive attitude corresponding to critical situation in ongoing pandemic.[25] Therefore, future health educational program should focus on the rehabilitation specialists with poor knowledge to improve the rate of positive attitude towards the disease. Additionally, future educational programs could be designed to target those professions which demonstrated a greater incidence of insufficient knowledge level among dentists, pharmacists, laboratory technicians and personnel. Consequently, proactive practicing approach was evident in (91.4%) and (96.1%) therapists to take quarantine measures and testing when contact with the suspected cases although, (78.6%) ensure implementation of precautionary measures while returning from work to home whereas only (66.1%) therapists were observed to take health and safety implications at their workplace. This advocates the significance in current scenario when there is neither standard treat-ment nor vaccine available therefore therapists must be aware of taking imperative precautions to ensure oneself and family health safety.[25] As healthcare providers are working as front liner are exposed to number of hazards in COVID-19 outbreak response yet (81.3%) showed willingness to help affected people that showed their commitment to the field. Besides, proactive practice in complying preventive measures may also create awareness among society.[25] In Pakistan, quarantine facilities were not declared in most of the healthcare settings due to which hospitals are professed as red zones of infection therefore pragmatic approach is required to prevent staff from disease. Thus, standard guidelines should be reinforced nationwide implementing management protocols hence improving the outcomes.On the other hand, our findings reported significant relationship between knowledge-attitude (p=0.05) and attitude-practice (p=0.01) however, suggest a weaker relationship between the variables that may be due to different demographic dimensions of the respondents. Whereas, number of study findings implies higher the knowledge score, higher the preventive practice scores hence, good knowledge is a key for a better practice towards COVID-19. Despite, age, qualification, job type and years of experience differ significantly in knowledge, attitude and practice domain. Likewise, findings of Naser et al revealed a statistically significant difference in knowledge score according to marital status however could not build a good correlation due to difference cultural trends. On the contrary, study of Giao et al revealed significant association with occupation in attitude only. Besides, this survey highlighted awareness of information towards COVID-19 in less explored field thereby identified the current status of knowledge, attitude and practice among rehabilitation specialists in response to COVID-19 pandemic. The current study has also demonstrated certain limitations that respondents were included only from Karachi, disseminated unofficially using personal contacts by the authors merely through social media. Moreover, substantial variability was found among rehabilitation specialists KAP level however physicians and nurses had better knowledge levels than other professions reported in several studies. The interpretation of results was confined due to COVID-19 as limited studies have been conducted to compare. In addition, total sample of 384 was not relatively monumental that may reflects the culture where target population was reluctant to participate in the survey leads to recall bias. Therefore, it was difficult to generalize the results across the population. Subsequently, relevant authorities must initiate educational campaigns towards HCPs that mainly focused on prevention strategies from COVID-19.

Conclusion

It was concluded that rehabilitation specialists of Karachi have good knowledge, positive attitude and proactive practice towards COVID-19. This survey also highlighted gaps in specific aspects of knowledge and practice that should be focused in future

awareness and educational campaigns. Despite of the challenges, rehabilitation specialists were found to dedicated and selfless to offer reassurance of their services to overcome this pandemic.

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