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KNOWLEDGE, ATTITUDES, PSYCHOLOGICAL IMPACT AND PREVENTIVE PRACTICES INTERRELATED TO COVID-19. A CROSS-SECTIONAL STUDY BETWEEN MEDICAL AND NON-MEDICAL PERSONNEL IN PUNJAB

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Abstract: COVID-19 occurrence takes place in December, 2019 in Wuhan Hubei Province, China and spread to various other countries in a couple of weeks. This study was carried out to evaluate

and assess the knowledge, attitude, psychological impact and overall preventive rehearses related to COVID-19.
Alongside it was a prospective cross-sectional survey of Punjabi medical and non-medical workers. It took place in roughly three months, from June 2020 to August 2020. There were 800 volunteers in all; 436 of them were medical professionals and 364 were not. A total of 5 sections of the questionnaire comprised of questions correlated to demographics, knowledge of signs and indications, treatment, participants' preventive practices and psychological impact of COVID-19. Out of these 800, individuals aged between 18 to 30 years gave maximum responses i.e. 90.6% amongst whom the majority had been females (64%). About 98.3% of the individuals knew that COVID-19 was a viral disease, 91.3% were aware of it and 91.6% knew the appearance of symptoms of COVID-19 disease, but only 74.9% knew that it was a contagious disease. Some people stated that there were certain cures for the infection, either by self-medication at home i.e. use of antibiotics (14.6%) or sometimes by the use of herbal products or traditional medicines (42.3%). Most of the participants knew how to prevent the spread of infection and about 79.1% of the individuals knew that there is right now no vaccination available to treat COVID-12.

Keywords: COVID-19, Medical and Non-Medical Personnel, Psychological Impact, Preventive Practices

Introduction

Coronaviruses are positive-natured viruses of *Coronaviridae* family, that cause innumerable diseases in humans and several other wild animals initiating gastrointestinal (GIT), nervous system and numerous respiratory tract infections (RTIs) [1, 2]. These are designated into four genera showing alpha, beta, gamma as well as delta types of coronaviruses targeting different type of hosts e.g. alpha and beta type infect mammals while the other two types contaminate the birds and fish [3, 4]. Six coronavirus species were previously investigated for their potential to infect humans and cause RTIs. While SARS-CoV and MERS-CoV severely damage the lower respiratory tract and cause morbidity and mortality, HCoV-229E, HCoV-NL63, HCoV-OC43, and HKU1 only induce upper RTIs with mild infection [5]. Researchers, particularly virologists, have focused their emphasis on comprehending and examining the origins of these diseases in light of the recent advent of a variety of viral infections in humans. Severe Acute Respiratory Syndrome (SARS), brought on by the new coronavirus, is one of these viral illnesses. This type of viral pneumonia causes symptoms such as fever, whooping cough, dyspnea, and headaches by contacting the lower respiratory tract [6]. Within few months it spread to several other 26 countries becoming the first pandemic in 21st century [7].
Another outbreak reported by the World Health Organization in September 2012 that produced a similar threat among people, was the novel Middle East Respiratory Syndrome Coronavirus (MERS-CoV) [8]. The first case of MERS was reported in June 2012, in Jeddah, Saudi Arabia. It was found that the virus mirrored SARS-CoV; however, MERS has less fatalities than SARS. Similar to 2013 and 2014, there were few to no instances of MERS documented, and in May 2015, the mortality rate for MERS patients was roughly 40% [9]. Since the SARS pandemic, a few additional coronaviruses associated with the disease have been discovered; however, it should be noted that these viruses are thought to have a zoonotic origin, namely that bats are their natural hosts [10].

Methodology:

Study design, participants and duration of study:

Our prospective cross-sectional study was employed between medical as well as non-medical workers in Punjab showing a convenient sampling technique. Our main objective of study was elucidated to those who agreed to participate in our study. It was accompanied in 3 months preliminary from June 2020 to August 2020.

Ethical grant of the study:
The Research Ethics Committee of the Department of Pharmacy-Practice at Rashid Latif College of Pharmacy, Lahore, primarily acknowledged the study protocol. Prior to being enrolled in our study, each subject gave permission to participate. During the data gathering process, all of the COVID-19 primary precautions were given into account.

Sampling:
The Raosoft calculator was employed for deviousness of the sample for this study having margin of error of 5% with 95% CI. A total of 800 individuals joined, out of which 436 were medical and 364 were non-medical.

Study instrument:
An English-language self-administered questionnaire was improved. An assistant professor and a lecturer first looked over the questionnaire draft to make any necessary revisions. This survey was occasionally corrected in a clever manner. The following sections comprised the final fundamental questionnaire.

Section 1: It includes six questions concerning the demographic details of medical and non-medical members.

Section 2: It contains inquiries about one's familiarity with the indications and presentations of COVID-19 illness. There are ten detailed questions in this section. A point is awarded for each accurate response. Additionally, the spectrum of possible accurate knowledge ratings is 0 to 10. Individuals who performed between 5 and 8 were classified as having weak, moderate, or good knowledge, respectively.

Section 3: Questions concerning COVID-19 treatment are included in this section. This section consists of ten questions. Every question is worth one point, and the maximum possible score is between 0 and 10. Individuals who scored between 5 and 8 were considered to have poor, moderate, or good grasp or knowledge of the treatment, according to careful consideration.

Section 4: Ten questions in all, with scoring criteria akin to those in earlier sections, are used to estimate the contributors' COVID-19 preventive practices. A score of more than 8 is usually considered as a good preventative practice, and a score of less than 5 indicates a participant's poor practice.

Section 5: A total of ten questions about the psychological effects of COVID-19 were posed in order to gain entry. Every positive impact is assigned a value of 1, with a score of more than 8 indicating a positive influence and less than 5 indicating a negative impact due to psychological illness. Before being distributed to research participants, the questionnaire was pretested on five students in the pharmacy department at Rashid Latif College of Pharmacy. Every participant in the pretest ensured that they fully assumed and comprehended the inquiries.

Results:
A total of 1000 individuals were outlook, with almost 800 giving response and being engaged in the study. The attributes of the study population are shown in Table 1. Out of these 800, individuals aged between 18 to 30 years gave maximum responses i.e. 90.6% and the majority of them were females (64%). The response of the study participants regarding COVID-19 knowledge questions is shown in Table 2. About 98.3% of the individuals knew that COVID-19 was a viral disease, 91.3% were aware of it and 91.6% knew the appearance of symptoms of COVID-19 disease, but only 74.9% knew that it was a contagious disease. Some people stated that there were certain cures for

the infection, either by self-medication at home i.e. use of antibiotics (14.6%) or sometimes by the use of herbal products or traditional medicines (42.3%). Most of the participants knew how to prevent the spread of infection and about 79.1% of the individuals knew that there is no vaccine for the treatment of COVID-19.

Table 1: Attributes of the study population:

Characteristic	**Response**	**No. of participants (%)**
Age	<18	23 (2.9%)
	18 to 30	725 (90.6%)
	30 to 50	48 (6%)
	>50	4 (0.5%)
Gender	Male	288 (36%)
	Female	512 (64%)
Socio-economic status	Lower	20 (2.5%)
	Middle	737 (92.1%)
	Upper	43 (5.4%)

Table 2: Response of study population to COVID-19 knowledge questions:

When do symptoms of COVID- 19 appear?	2-14 days after exposure	733 (91.6%)
	Within 24 hours after exposure	49 (6.1%)
	One month after exposure Quickly after exposure	1 (0.1%)
		17 (2.1%)
Which of these will make you feel that you are infected?	Fever	34 (4.3%)
	Shortness of breath Both	24 (3%)
	Depression	732 (91.3%)
		10 (1.2%)
Which of the symptoms will develop quickly within one week after onset of disease?	Cough and fever Auditory disturbance	736 (92%)
	Visual disturbance	5 (0.6%)
	I don’t know	3 (0.4%)
		56 (7%)

Are the symptoms of COVID-19 different in children than in adults?	Yes No May be I don't know	70 (8.8%) 343 (42.9%) 324 (40.5%) 63 (7.9%)
COVID-19 is a contagious disease?	True False In some cases No opinion	599 (74.9%) 20 (2.5%) 89 (11.5%) 92 (11.1%)
Do you think that patient suffering from chronic diseases is at high risk of getting infected with COVID-19?	May be Strongly agree Strongly disagree No opinion as such	267 (33.4%) 446 (55.8%) 23 (2.9%) 64 (8%)
What would be the other problems caused by COVID-19?	Depression ARDS Heart disease All of these	201 (25.1%) 161 (20.1%) 92 (11.5%) 346 (43.3%)
Which of these could be the reason of infection?	14 days of travel Unhygienic food Contaminated water Other disease	542 (67.8%) 86 (10.8%) 26 (3.2%) 146 (18.3%)

Are there any thrombotic complications? If yes, which of the following:	Increase clot formation Increase bleeding Fever I don't know	32 (4%) 186 (23.3%) 318 (39.8%) 264 (33%)

Table 3: Response of study population to COVID-19 treatment questions:

Do you think that a proper vaccine against COVID-19 has been developed?	Yes No I don't know No opinion	54 (6.8%) 633 (79.1%) 68 (8.5%) 45 (5.6%)
Have u done any self – medication due to fear of COVID-19?	Not at all Yes, I do For one only Only when sick	431 (53.9%) 209 (26.1%) 47 (5.9%) 113 (14.1%)
How can we prevent COVID- 19 from spreading?	By boosting immunity Social distancing Eating healthy food All of the above	23 (2.9%) 125 (15.6%) 8 (1%) 664 (80.5%)
Which of the following are not used for the treatment of COVID-19?	Antibiotic Anti-malarial Anticancer	117 (14.6%) 43 (5.4%) 329 (41.1%)
	None of these	311 (38.9%)
What will u do if u find symptoms of infection in yourself?	Stay in my residence and isolate myself to protect others I will go to public place Continue my work	779 (97.4%) 5 (0.6%) 6 (0.7%)

	Not tell anybody about it to avoid discrimination by my friends and work colleagues	10 (1.2%)
It is my opinion that early detection of COVID-19 can improve treatment and outcome?	Strongly agree Strongly disagree Moderately agree No opinion	605 (75.6%) 13 (1.6%) 115 (14.4%) 67 (8.4%)
In order to prevent COVID 19 I use herbal products and traditional medicines?	More often Sometimes Never Daily	112 (14%) 338 (42.3%) 314 (39.3%) 36 (4.5%)
In order to prevent COVID-19 I take vitamin supplement?	Strongly agree Strongly disagree Moderately agree No opinion	407 (50.9%) 47 (5.9%) 189 (23.6%) 157 (19.6%)
Will I die if I contact with COVID-19?	Strongly agree Strongly disagree	51 (6.4%) 217 (27.1%)
	Moderately agree No opinion	262 (32.8%) 270 (33.8%)
Do you think, taking steam is effective against COVID-19?	Yes No I have no idea Sometimes yes	461 (57.6%) 71 (8.9%) 141 (28.3%) 122 (15.2%)

As shown in Table 3, most of the people are quite aware of COVID-19 treatment at home and they take all the necessary steps that make an individual healthier along with stronger immunity, while some individuals aren't much aware of COVID-19 hence they don't take the necessary steps required to boost their immunity for a stronger body and mind.

Table 4: Response of the participants to COVID-19 prevention questions:

Questions	**Response**	**Percentage**
How many risk factors must be present for the transmission of COVID-19?	3 4 6 I don't know	163 (20.4%) 94 (11.8%) 88 (11%) 455 (56.9%)
To prevent the spread of COVID-19 physical distance should be of at least?	1 meter 2 meter 3 meter	197 (24.6%) 226 (28.2%) 337 (42.1%)

	I don't know	40 (5%)
Why covering your mouth while coughing and sneezing is necessary?	Because it is unethical Because it can be irritating for others Because it can make you and other people sick None of these	39 (4.9%) 46 (5.8%) 665 (83.1%) 50 (6.3%)
Which of the following is not a mode of transmission of COVID-19?	Droplet Direct contact with infected person Not wearing a mask in public place Unhealthy food	168 (21%) 48 (5.4%) 77 (9.6%) 512 (64%)
Who should not wear a face mask?	Those who are sick Those who are taking care of sick in hospital/home Those who are in crowed Those who are in home and self-isolating	19 (2.4%) 11 (1.4%) 25 (3.1%) 745 (93.1%)
If I felt the need of cough/sneeze I cover my mouth and nose with?	I never cover With my hand With a flexed elbow With a cloth I am wearing	14 (1.8%) 84 (10.5%) 652 (81.5%) 50 (6.3%)

For how long one should wash his/her hand?	At least 2 min At least 1 min At least 20 seconds At least 30 seconds	50 (6.3%) 75 (9.4%) 528 (66%) 147 (18.4%)
What is the proper way of application of mask?	Apply it by keeping colored side facing outwards Apply it with colored side facing inwards By only covering mouth By keeping face outside	514 (64.3%) 122 (15.2%) 199 (24.9%) 19 (2.4%)

Do you carry a hand sanitizer all the time?	Yes No Sometimes Only if needed	351 (43.9%) 115 (14.4%) 199 (24.9%) 135 (16.9%)
I throw tissue paper in dustbin right after using it?	More often Not at all Sometimes Always	194 (24.3%) 19 (2.4%) 83 (10.4%) 504 (63%)

As shown in Table 4, only 11% of the people were aware of the risk factors of COVID-19 and more than 50% of the study participants weren't aware about the risk factors. Moreover many people knew the mode of transmission of COVID-19 and also knew how to prevent the spread of infection by maintaining a proper physical distance (42.1%) and covering their mouth while coughing and sneezing (83.1%). Responses of the study participants regarding the psychological impact of COVID-19 is shown in Table 5.

Table 5: Response of the study participants regarding the psychological impact of COVID-19:

Questions	**Response**	**Percentage**
I am not satisfied with the current infection control measures?	Agree Disagree Moderately agree No opinion	469 (58.6%) 98 (12.2%) 172 (21.5%) 61 (7.6%)
I am scared of going into crowded places?	Yes No Very rare More often	584 (73%) 57 (7.1%) 87 (10.9%) 72 (9%)
What do you think is the proper source of information for COVID-19?	Social media News channels Official government websites Friends and family	204 (25.5%) 139 (17.4%) 414 (51.8%) 43 (5.4%)
When a family member goes outside I feel scared?	Mild Moderate Too much Not at all	103 (12.9%) 203 (34.9%)

		358 (44.8%) 60 (7.5%)
I don’t think situation is as bad as it is shown to us?	Yes No Sometimes	176 (22%) 394 (49.3%) 167 (20.9%)

	I don’t know	63 (7.9%)
I feel anxious whenever I get a news about COVID-19?	Mild Moderate Very much Not at all	140 (17.5%) 284 (35.5%) 291 (36.4%) 85 (10.6%)
I am scared of getting infected even from my own healthy family members?	Mild Moderate Very much Not at all	129 (16.1%) 197 (24.6%) 167 (20.9%) 307 (38.4%)
When a family member goes outside I feel scared?	Mild Moderate Too much Not at all	103 (12.9%) 279 (34.9%) 358 (44.8%) 60 (7.5%)
I feel that there should be separate hospitals for COVID-19 patients?	Strongly agree Strongly disagree Moderately disagree No opinion	654 (81.8%) 21 (2.6%) 87 (10.9%) 38 (4.7%)
Do u think that the major reason of panic is the fake news surfacing on social media?	Strongly agree Strongly disagree Sometimes I don’t know	453 (56.6%) 71 (8.9%) 216 (27%) 60 (7.55)

Most of the people stated that their sources of information about the infection were some official government websites i.e. 51.8%. About 73% of the people were scared of going in crowded places, 58.6% of the people stated that they were not satisfied with the infection control measures. But a majority of the study participants were aware of the infection and followed all the preventive measures to combat the disease.

Discussion:

Our study is amongst the very few earlier research studies that we are aware of that looked into COVID-19-related knowledge, attitudes, psychological impact and preventive practices among medical and non-medical personnel in Punjab. COVID-19 is not a water- or air-borne disease; it transmits from infected people to others by respiratory droplets through sneezing or coughing, as well as by contaminated hands. The incubation period has been reported to be 5.2 days (95% confidence interval), however the Center for Disease Control and Prevention (CDC) says that it might be anywhere from 2 and 14 days. Fever, tiredness, and a dry cough are the most prevalent symptoms of COVID-19, with dyspnea affecting one-third of the patients. Myalgia, headaches, sore throats, and diarrhea are some of the other symptoms. Furthermore, COVID-19 is more common among the elderly, people with chronic illnesses (hypertension, cardiovascular, cerebrovascular, and chronic respiratory disorders), and amongst healthcare workers.

Some participants in our study were aware of the mode of transmission of COVID-19, 98.3% were aware that COVID-19 was a viral disease and 91.6% knew the appearance of COVID-19 disease symptoms, but only 74.9% were aware that it was a contagious disease, 42.1% knew how to prevent the spread by keeping an appropriate physical distance and 83.1% knew to cover their mouth when coughing or sneezing. Only 11% people knew the risk factors of COVID-19. COVID-19's management has been mainly supportive so far. Several authorized medications (e.g. Chloroquine, hydroxychloroquine, lopinavir, ritonavir, sofosbovir, ribavirin, etc.) as well as certain investigational medications (e.g., remdesivir, favipiravir) are being explored for COVID-19 prevention and treatment. In over collective data some people stated that there were certain cures for the infection, either by self-medication at home i.e. use of antibiotics (14.6%) or sometimes by the use of herbal products or traditional medicines (42.3%). Most of the participants knew how to prevent the spread of infection and about 79.1% of the individuals knew that there is none of best vaccine for the treatment of COVID-19. Most of the people stated that their source of information about the infection was through some official government websites i.e. 51.8%. About 73% of the people were scared of going in crowded places, 58.6% of the people stated that they were not satisfied with the infection control measures. But a majority of the study participants were aware of the infection and followed all the preventive measures to combat the disease.

The majority of university students and personnel had good COVID-19 knowledge and attitudes, which was positive. This could be due to the fact that our sample included personnel and students from the medical, pharmacy, and allied health sciences fields of study. Similar studies in China, Jordan, and Saudi Arabia found that university students in those countries had better knowledge, attitudes, and practices related to COVID-19 than those in Pakistan. Despite the generally good knowledge and attitudes in our investigation, it was concerning that COVID-19 prevention actions were far from satisfactory. If Pakistan's educated sector has inadequate preventative behaviors, one can wonder what the general public's practices will be. We assume that vulnerable populations, such as the illiterate or lowly literate, geriatrics, and rural people, are more likely to have inadequate knowledge, attitudes, and preventative actions due to limited access to online health information resources.

Limitations of our research:

There are certain limitations to our research. The research included university students as well as personnel from the medical, pharmacy, and allied health science departments. Furthermore, we adopted the handy sampling approach, which is a non-probability sampling method. As a result, our

findings might not be representative of all Pakistani university students.

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