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Knowledge, Attitude, Practices (KAP) and Psychological Impact of COVID-19 among Pakistani Population: A Quick Cross-Sectional Online Study

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Abstract

Background: Coronavirus causes extremely contagious infection and currently is a major threat for the public health globally. The aim of this study was to evaluate the current level of awareness towards Corona Virus Disease 2019 (COVID-19) among Pakistani residents, their attitude, practices and psychological impact towards COVID-19 those contribute in an important way to control this pandemic.

Methods: A cross sectional online study was conducted. A self-developed online questionnaire was made by Google forms and sent to the author's network with local residents in Pakistan. The questionnaire contained 35 questions among which 6 questions were related with the demographic features, 14 questions assess knowledge of participants, 4 questions evaluate the attitude, 7 questions assess the practices of the participants towards COVID-19 and 4 questions assess the psychological impact towards COVID-19.

Results: Among the participants (n=528) 66.7% were female and 33.3% were male. Among them 49.8% of the participants were from the age group of 18-24 and the percentage of students was higher i.e. 39.8%. The overall range for correct answers for the knowledge questionnaire was 97.5%-46.8%, for attitude 75.2%-91.9% and for practices 39%-95%. 79% of the participants were confident that Pakistan will overcome the disaster situation of COVID-19.

Conclusion: The findings of the current study indicated that Knowledge among the Pakistani residents about COVID-19 was found satisfactory. A significant number of the participants still lacking confidence when compared with the other countries. However, to effectively control the infection spread and improving COVID-19 knowledge the well-structured awareness programs must be launched by the government those could be helpful for Pakistani residents to hold optimistic attitudes and maintain appropriate practices.

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Introduction

Emerging and remerging pathogens are a major health concern to the public health in all over the world [1]. Coronaviruses are enveloped RNA viruses those are widely spread among humans, other mammals and birds and causes respiratory, hepatic and neurologic diseases [2]. The two strains of coronaviruses severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East Respiratory Syndrome coronavirus (MERS-CoV) appears from respiratory origin and sometimes cause fatal illness [3]. In 2002 and 2003 (SARS-CoV) was the actual cause of severe acute respiratory syndrome outbreak in Guangdong province of China [4-6]. During 2012 (MERS-CoV) was the pathogen that caused severe respiratory disease outbreak in the Middle East [7].

During late December 2019, some viral pneumonia cases of unknown origin were reported from Wuhan, the capital of Hubei province in China. The disease is highly contagious, and its main clinical symptoms were fever, dry cough, fatigue, myalgia dyspnea [8,9]. The pathogen was identified, and viral genome sequencing of the isolates recognized as novel strain of coronaviruses. The viral strain of novel coronavirus was different from both MERS-CoV and SARS-CoV and identified as seventh member of coronavirus family that infect the humans [10]. On January 7, 2020 the Chinese scientists named it as novel coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). [11,12]. Later on in February 2020, the World Health Organization (WHO) termed the illness caused by (SARS-CoV-2) the 2019 novel coronavirus disease (COVID-19) [13]. The continuing COVID-19 epidemic has spread at a very rapid rate and by February 15, 2020 the virus reached 26 countries altogether resulting in 51,587 laboratory confirmed cases and 1669 deaths with nearly all infections and deaths occurring in China. On January 30, in concern of this serious condition the World Health Organization (WHO) stated it "a public health emergency" of international concern and called for collaborative actions of all countries to prevent the horrifying rapid spread of COVID-19 [14].

The maximum efforts to overcome against COVID-19 are being applied in Pakistan. In order to attain the final success people's awareness to these control measures are essential that is largely affected by their knowledge, attitude and practices (KAP) towards COVID-19 in accordance with KAP theory [15,16]. The lesson learned from the dengue outbreak in 2011 in Pakistan suggest that knowledge, attitude and practices towards infectious diseases are related with level of panic emotion among the population, which can further complicate attempts to prevent the spread of the diseases [17,18].

Therefore, current study was designed to identify the current status of knowledge, attitude and practices about COVID-19 among Pakistani residents. The outcomes of the study will be helpful for the health authorities to improve COVID-19 education and preventative measures in the society.

Methods

Study Design and data collection

We adapted a survey-based methodology to achieve statistical inferences about the population being studied. This survey questionnaire was developed by using Google forms, a freely available, widely used and one of the most accessible tools out there. The cross-sectional online survey was conducted from April 14 to April 23. During this special period, it was not feasible to do a community-based national sampling survey because these are the days of stringent lock down, in order to avoid the spread of this pandemic so we decided to collect data online. Relying on authors networks with local residents in Pakistan, the questionnaire in the form of link was sent to the WhatsApp groups and individuals on the WhatsApp.

Measures /Questionnaire

The questionnaire contained 5 questions of demographic characteristics including age, gender, education, occupation and family members in the house. There were fourteen questions regarding the knowledge of COVID-19. Every question had three possible answers True, False, don't know. There were four questions regarding the attitude of COVID-19. Each question had three possible answers Agree, Disagree, Maybe and not sure. There were seven questions regarding practices related to COVID-19. The six questions had possible answers Yes, No, not sure. One question had more than one possible answer. Moreover, there were also 4 questions regarding the psychological impact of COVID-19 on the people. The three questions had possible answers Yes, No, don't know and may be. The rest of question has more than one answer.

Analysis of data

The data sample was then exported to a csv file. A Python script was developed to generate the individual scores for the Knowledge section of the survey. These scores were then exported as a single column csv file, compiled with the original dataset. The processed dataset was then directly imported into Plotly, a data analytics and visualization tool. Plotly is a complete solution that comes with much useful statistical and graphical functionality. Each plot generated through Plotly was appropriately formatted and normalized according to the data and plot type. We have also included plots directly generated by Google forms in this study. Our aim was to extract most of information from the dataset.

Results

Demographic Characteristics

A total of 528 participants completed the survey questionnaire. Among 528 participants 352 (66.7%) participants were female and 176 (33.3%) were male. 263 (49.8%) participants were from the age group of 18-24 as followed by 177 (33.5%) from the age group of 25-34, 52 (9.8%) were from the age group of 34-44, 18 (3.4%) were from the age group of 45-54, 14 (2.7%) were from the age group of 55-64 and 4 (0.8%) participants were from the age group of 65 or more.

The highest level of response was received from participants that have completed or pursuing their bachelor studies 231 (43.8%), as followed by Master students 187 (35.4%), PhD scholars 54 (10.2%). Furthermore, 46 (8.7%) participants were those who have secondary education and 10 (1.9%) were diploma holders.

290 (54.9%) participants responded that including themselves 4-6 people live in their house as followed by 147 (27.8%) answered that 7-10 people live in their house, 53 (10%) responded that 1-3 people lived in their house and 38 (7.2%) replied that more than 10 people live in their house as shown in the table 1:

Demographic Features	Characteristics	n (%)
Gender	Male Female	352 (66.7%) 176 (33.3%)
Age	18-24 25-34 34-44 45-54 55-64 65 or more	263 (49.8%) 177 (33.5%) 52 (9.8%) 18 (3.4%) 14 (2.7%) 4 (0.8%)
Highest Level of Education	Secondary Diploma Bachelor Master Doctoral Degree (PhD)	46 (8.7%) 10 (1.9%) 231 (43.8%) 187 (35.4%) 54 (10.2%)
Including Yourself how many people live in your house?	1-3 4-6 7-10 More than 10	53 (10%) 290 (54.9%) 147 (27.8%) 38 (7.2%)

Table 1: Demographic features of the residents.

Knowledge of COVID-19

The knowledge regarding the COVID-19 was assessed by 14 variables. Mixed responses were obtained regarding 14 knowledge questions. More than 90% of population were aware about COVID-19 is a viral infection, incubation period, symptoms, vaccination availability status and precautions regarding the COVID-19. Furthermore 454 (86%) participants responded that COVID-19 is transmitted by direct contact with infected person and 463 (87.7%) participants replied that COVID-19 does not cause severity to every person. Only those patients who are elder or immunocompromised are more likely to be severe cases. 247 (46.8%) participants answered that COVID-19 is also transmitted by animals whereas 174 (33%) of participants replied that COVID-19 is not transmitted by animals and 107 (20.3%) participants don't know about its transmission by animals as shown in the figure 1.

Attitude among Pakistani residents regarding COVID-19

All participants responded to the 4 questions on their attitude regarding COVID-19. About 422 (79.9%) of participants agreed that personal hygiene is the best way to protect COVID-19. More than 90% of the participants strongly agreed that staying at home is the best way to prevent the COVID-19 infection. Similarly, 397 (75.2%) of participants agreed that they are taking enough precautions to prevent COVID-19. On the other hand, 417 (79%) of the participants agreed that Pakistan will win battle against COVID-19 as shown in figure 2.

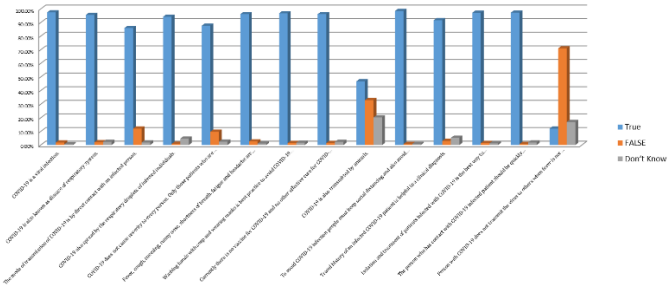


Figure 1: Knowledge among the Participants regarding COVID-19.

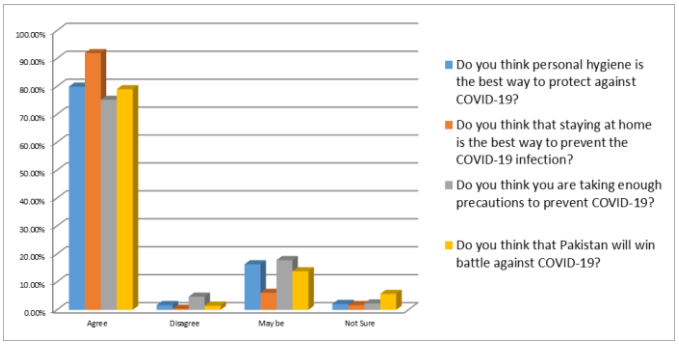


Figure 2: Attitude of the participants towards COVID-19.

Practices among Pakistani Population regarding COVID-19

All participants responded to all 7 questions on practices regarding COVID-19. More than 90% participants responded that they wash their hands frequently. However, 75% participants replied that they wash their hands for at least 20 seconds each time. More than 90% of the participants responded that they wear face mask when they go outside. There were still a small proportion of participants (4.2%) who say they don't wear face mask when they go outside. In addition, 407 (77.1%) participants answered that they do not visited any relatives during lockdown and 318 (60.2%) participants responded that relatives do not visited their home during lockdown as shown in figure 3.

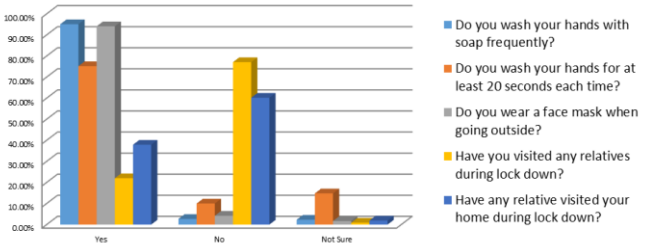


Figure 3: Practices among the participants regarding COVID-19.

Furthermore 206 (39%) of the participants answered that they leave their home only once a week to buy groceries, 127 (24.1%) participants replied that they go to outside for buying groceries twice a week and 89 (16.9%) of the participants answered that they go daily to buy groceries outside as shown in figure 4.

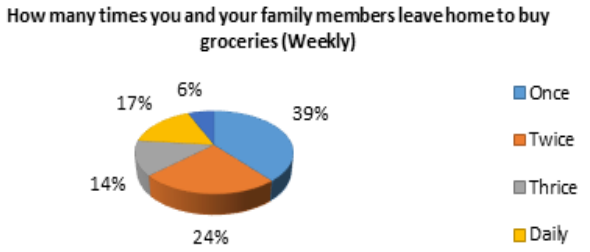
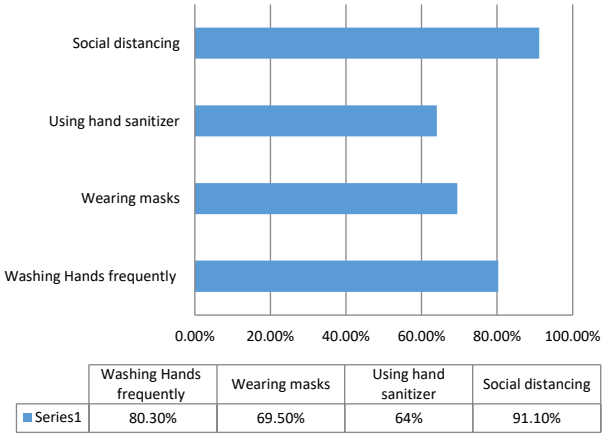


Figure 4: Daily grocery routine.

More than 90% participants replied that social distancing is the best practices to avoid COVID-19, 80% participants responded washing hands frequently and more than 60% of the participants answered wearing masks and using hand sanitizer is the best way to avoid COVID-19 as shown in figure 5.



	Washing Hands frequently	Wearing masks	Using hand sanitizer	Social distancing
Series1	80.30%	69.50%	64%	91.10%

Figure 5: Best Practices to avoid COVID-19.

Psychological Impact regarding COVID-19

Mixed responses were received for psychological impact regarding COVID-19. In the current study 88% of participants replied that they don't have any kind of psychological illness and 6.8% of the participants respond that they have psychological illness and they take medicine for it. Furthermore 148 (28%) participants answered that they have psychological stress due to COVID-19 during this pandemic as shown in the figure 6.

In the current study (148) 28% participants said that they have psychological stress during this pandemic and (261) 49.4% said that they don't have any psychological stress. Of these participants 147 (17.8%) have fear of getting infection, 41 (7.8%) have fear of dying due to COVID-19, 55 (10.4%) have fear of getting unemployed due to lockdown, 100 (18.9%) have stress due to decreased social life, 167 (31.6%) have stress due to media news and reports whereas 245 (46.4%) respond that don't have any stress during this pandemic as shown in the figure 7.

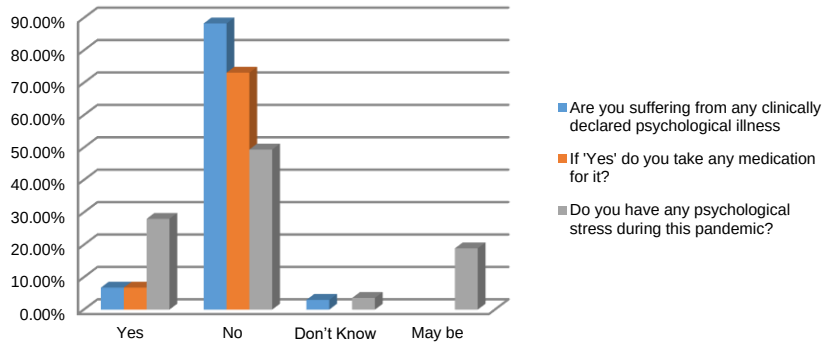


Figure 6: Psychological Impact among the participants

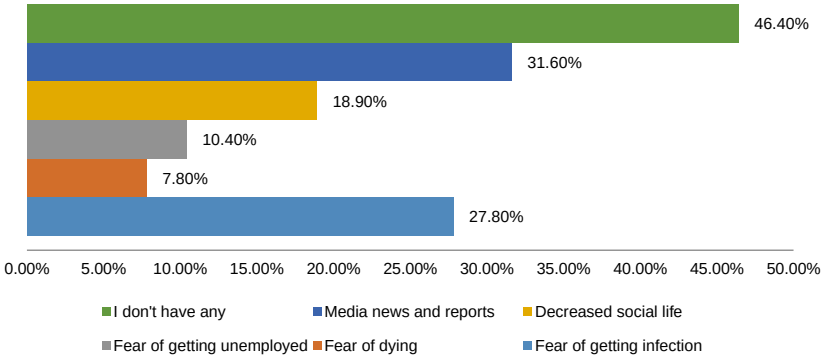


Figure 7: Psychological stress among the participants due to COVID-19.

Discussion

The findings of high corrected rate of COVID-19 knowledge in Pakistani residents were unexpected. In this survey more than 40% of the participants held Bachelor's, 35.4% masters and 10.2% doctoral degree. Because of the serious situation of the epidemic and the overwhelming news reports on this public health emergency the population would actively learn knowledge of this infectious disease from various channels of information. The government of Pakistan also played an important role for awareness among the population. The current study showed a good knowledge of COVID-19 among Pakistani residents. More than 80% of the participants have good knowledge regarding COVID-19, its transmission, symptoms, current vaccine and treatment status and prevention. The findings of our study are very closely related with the previous studies as described by [16,19].

The attitude towards COVID-19 were positive, most residents took safety measures to avoid infections by COVID-19. The strict preventive measures could be primarily attributed to the stringent prevention and control measures applied by the government for example banning public gathering. Resident's good knowledge about the high infectivity of COVID-19 virus, which can be easily spread among people via invisible droplets, is also another reason for positive attitude towards COVID-19. Moreover 79% participants were confident that

Pakistan will overcome the disaster situation against the COVID-19 outbreak. Similar study in China showed that 90.8% were confident about the control of COVID-19 and 97.1% participants believed that they will win battle against COVID-19 [16]. The good attitude among the Chinese residents is possibly due to better health care facilities in China as compared to Pakistan. The better economic status of China is also another reason for the positive attitude of Chinese residents towards COVID-19.

Current study also showed that Pakistani residents are cautious to avoid potential problems due to COVID-19. Nearly 90% residents wear face mask and wash their hands frequently. Unfortunately, 4.2% of residents did not wear masks when they leave home. Similar study from China also revealed that 2.0% of the residents also did not wear masks when they leave their homes [16]. Current study also revealed that only 39% of the residents leave home once a week for buying groceries. In the current study 22% of the participants replied that they visited their relatives during lockdown and 38% of participants respond that relatives visited their homes during lock down. The possible risky behaviors were related to male gender, occupation of "students" and poor COVID-19 knowledge. From the findings of some previous studies regarding age and gender patterns of risk taking behaviors men and late adolescents are more likely to engage in risk-taking behaviors [20,21].

Previous studies also suggested that public health emergencies also have many psychological effects on the people which can be expressed as anxiety, fear and worry among others [22]. In the current survey 88.3% of participants respond that they don't have any kind of psychological illness and 6.8% of participant replied that they have psychological illness and they take medication for it. In the current study 148 (28%) participants were afflicted with psychological stress because of COVID-19 outbreak. Of these participants 147 (27.8%) have fear of getting infections, 41 (7.8%) have fear of dying, 55 (10.4%) have fear of getting unemployed, 100 (18.9%) have stressed due to decreased social life and 167 (31.6%) have stress due to media news and reports. It has been shown that the rapidly rise in the number of patients and suspected cases and the spread of outbreak to other provinces and countries, have worried people about being infected in this outbreak which has increased anxiety [23]. Also the significant deficiency of masks and disinfectants, the devastating and astonishing news headlines and specious news reports have also added to anxiety and fear [24].

Due to limited access to the internet and online health information resources, vulnerable populations of Pakistani society under COVID-19 epidemic such as older adults, population with comorbidities and people living in the rural areas of Pakistan usually have very limited participation. Furthermore, they are more likely to have poor knowledge, negative attitudes and inappropriate preventive practices towards COVID-19. Therefore, a separate study requires for assessing KAP towards COVID-19 of vulnerable population in Pakistan. Another limitation to the study was lack of in-depth assessment of KAP towards COVID-19 which would be possible with interviews and group discussion.

In conclusion the current study shows that Pakistani residents have good knowledge, optimistic attitudes and appropriate practices towards COVID-19 during the rapid rise period of the COVID-19 outbreak. When compared to other countries a significant number of participants still lacking confidence. A fraction of participants are lacking safety practices for example not wearing face masks, washing of hands for at least 20 seconds, daily go outside for grocery and visiting the relatives. Some of the participants also have psychological stress during this pandemic such as fear of getting infection, fear of dying, stress of getting unemployed, stress of lack of social life and stress due to media news and reports regarding COVID-19. However, 79% of the participants are hopeful that under the combined efforts of Government of Pakistan and all Pakistani residents, Pakistan will win battle against the COVID-19 in the near future.

Conflict of Interest

None.

Author Contributions

All authors contributed equally to this study.

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