

COVID-19 Awareness, Perceptions and Myths Among General Population of Pakistan During Pandemic. A survey-based study

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Abstract

A novel corona virus has emerged as a disastrous situation globally. Along with a huge number of mortalities, corona virus pandemic has brought with it, the socioeconomical downfall. People around the world went through a tough physical and mental state. Initially, it was hard to establish an effective elimination strategy due to the unavailability of authentic knowledge about the transmission and treatment of the disease. However, it was defined by the World Health Organization that social distancing could be the key step to reduce the spread of disease. Pakistan during the first outbreak was listed among the less effected countries as per statistics. Therefore, a survey-based study was designed to evaluate the level of awareness about COVID-19 among the general population of Pakistan and their beliefs and attitude towards the preventive measure. Out of 376 respondents, 46.28% of Pakistanis exhibited excellent and good levels of knowledge, followed by

6.91% fair, only 0.53% of individuals were found to have poor knowledge about COVID-19. No remarkable statistical difference was noted among different socio-demographic variables like age, gender, qualification, and profession. It was concluded that the awareness could be the reason behind the less or controlled spread of COVID-19 in Pakistan during the first outbreak of 2020 as compared to other countries around.

Key Words:COVID-19, Perceptions, Awareness

Introduction:A novel coronavirus disease (COVID-19) was depicted in December 2019 and has brought about major isolation to stop the additional spread, especially in urban areas and open territories all over the globe[1]. Till the mid of august 2020 in 176 countries,19.90 million cases and0.73 million deaths were reported due to COVID-19. However, 12.68 million patients were recovered after getting infected, after 4 months in January 2021 total cases were 80.84 million with 1.7 million deaths and 56.61 million recoveries, the rest of the cases were reported to be critical at that time[2].

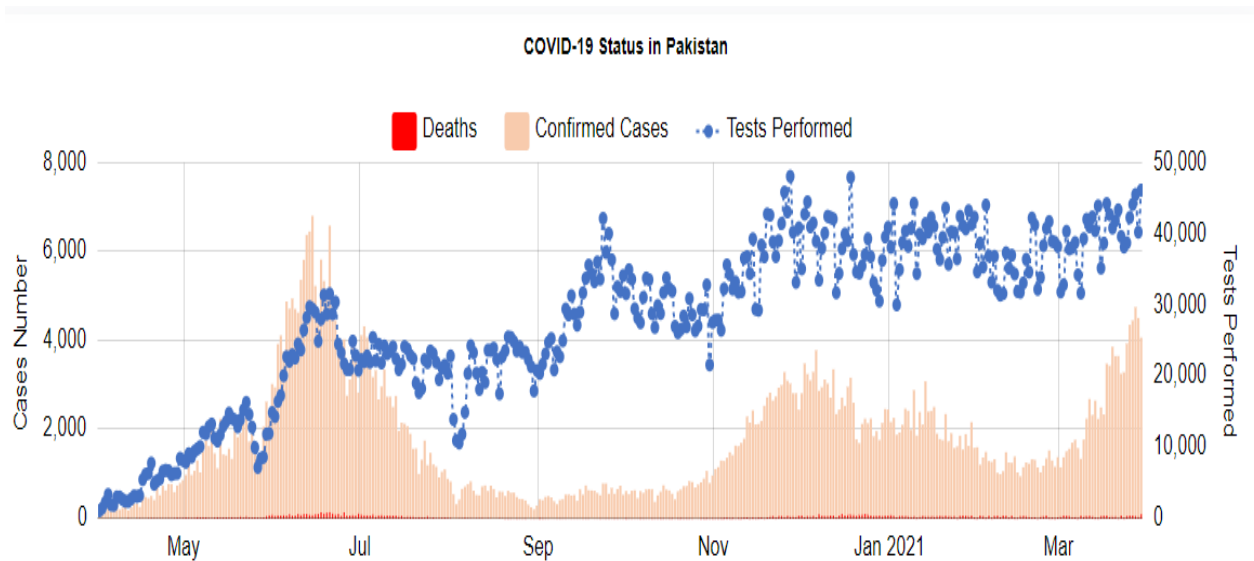


Figure 1 Details of last one year of COVID-19 in Pakistan[2].

First cases of the COVID-19 disease were linked to direct exposure to the Huanan seafood wholesale market of Wuhan, the animal-to-human transmission was presumed as the main mechanism[3]. Nevertheless, subsequent cases were not associated with this exposure mechanism. Analysis of data related to the spread of COVID-19 in China seems to indicate that close contact between individuals

is necessary. The spread is primarily limited to family members, healthcare professionals, and other close contacts. As with other respiratory pathogens, including flu and rhinovirus, the transmission is believed to occur through respiratory droplets from coughing and sneezing [4]. Therefore, it was concluded that the virus could also be transmitted from human to human, and symptomatic people are the most frequent source of COVID-19 spread[5, 6].It was also suggested that those individuals who remain asymptomatic could transmit the virus[7],and aerosol transmission is also possible in case of protracted exposure to elevated aerosol concentrations in closed spaces[7, 8]. Therefore, isolation is the best way to reduce this spread [9].

The most common symptoms of COVID-19 are cough, fever, sore throat, dyspnea, fatigue and myalgia[10]. Patients infected with Corona Virus indicate elevated leukocyte numbers, anomalous respiratory results, and elevated degrees of plasma proinflammatory cytokines[11].Molecular-based PCR was used for the detection of covid-19 by taking a sample from the upper respiratory tract; endotracheal aspirates, throat swab, nasopharyngeal swab and bronchoalveolar lavage [12-14]. The chest X-ray may show normal findings in the early stages, but bilateral infiltrates are common [15, 16]. CT scan was also proved to be useful to diagnose COVID-19 in suspected cases even with negative molecular detection [17]. Other nonspecific parameters like ESR, CRP ALT/AST, creatinine, CPK, LDH, D-dimer may also rise with the severity of the disease [18, 19]. Immunocompromised individuals could be more vulnerable to getting the infection, inducing symptoms that can lead to a higher rate of mortality[20, 21]. In First-line treatment for febrile patients' antipyretic therapy such as paracetamol was used for fever[22][23]. Severe respiratory infections require the administration of oxygen therapy currently explored therapeutic drugs against COVID-19 are involved in JAK inhibition, selective cytokine blockade, intravenous immunoglobulin, and other steroids[24-26]. Combination of Azithromycin and hydro oxy chloroquine was found significantly effective for disease management[27]. However, treatment strategies were modified time by time following the recent research.During the last months of 2020 vaccine for COVID-19 was started in United Kingdom and China according to a defined vaccination plan. In the year 2021 the vaccine was delivered to most of the countries including Pakistan.

As discussed above, COVID-19 isa highly contagious infection but can be avoided by following protective measures like social distancing, maintaining a reasonable distance, covering mouth and nose with bent elbow, mask or tissue while coughing or sneezing.Washing hands with soap and water or using sanitizers after touching an infected surface,eyes, mouth and nose[28]. In case of severe

symptoms, contacting the health care provider directs to the right health care and protects others by keeping the patient in quarantine under observation. Self-isolation is a good strategy for those with minor symptoms such as cough, headache, mild fever, till the time of recovery[29]. Knowledge about the progression and transmission of any disease is very important for its elimination, so parents teaching their children to make healthy and hygienic measures, could help in minimizing the spread in children. Therefore, this study aimed to evaluate the awareness and attitudes of the Pakistani population towards coronavirus spread.

Methodology: The study was conducted during the 2020 outbreak of COVID-19 in Pakistan. The sample size was calculated by using the RaoSoft website sample size calculator where the confidence interval was 95% and the error margin was 5% with 50% response distribution. Google forms questionnaire-based random sampling was done by sending google form link through social media, personal contacts and emails, keeping in view the social distancing as a preventive measure of COVID-19. All Pakistani nationals and overseas Pakistanis with no age, sex, race, profession and education discrimination were welcomed to participate in the study. Incomplete and manipulated responses (N=3) were excluded from the study to ensure integrity. Data and statistical analysis were carried out by using Microsoft Excel and SPSS software.

Table 1 Sociodemographic characteristics of study participants.		
Participant's demographics	Total number	Percentage
Female	177	47.08%
Male	199	52.92%
Under 20 Years	74	19.68%
Between 21-40 Years	283	75.26%
Above 40 Years	19	5.05%
Punjab	349	92.81%
KPK	18	4.78%
Overseas	6	1.59%
Baluchistan	3	0.79%
Health care professional	188	50%
Non health care professional	188	50%
Bachelor (Non-healthcare)	154	40.95%
Bachelor (Healthcare)	85	22.60%
Masters or above (Healthcare)	24	6.38%
Masters or above (Non-healthcare)	39	10.37%

Others (Intermediate/High school/Uneducated)	74	19.68%
Total	376	

Results: To explore the levels of awareness regarding COVID-19 among the general population and health-related personals during the 2020 outbreak, a questionnaire-based analysis was done along with sociodemographic determinants to ensure the quality of the study. Criteria for the evaluation of different levels of awareness was defined where <25% correct answers were considered as poor, 25-50% as moderate, 50-75% as good and >75% correct answers were considered as excellent. Total 376 survey forms were selected for the evaluation after deferring the rest of the responses which fall in exclusion criteria. Among these 376 participants, the highest number was between the age of 21-40 years however, the frequency of participants among both genders was almost the same 53% males, 47% females. Overall knowledge about COVID-19 among the general Population of Pakistan was 73% (figure 2).

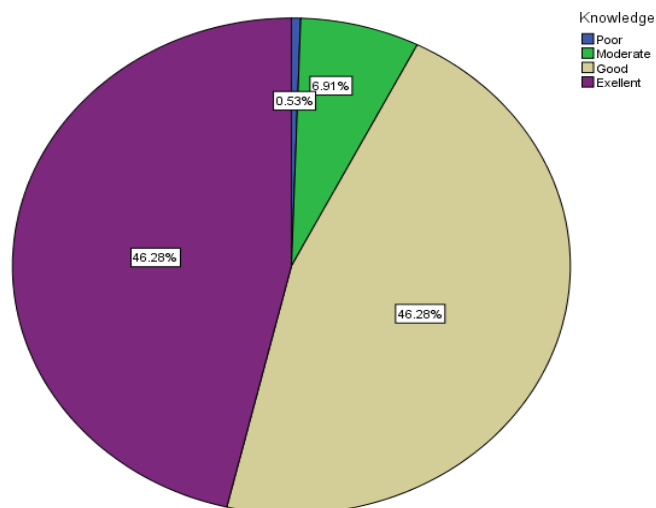


Figure 2 Overall awareness of COVID-19 among Pakistani population.

Gender-wise distribution of participants was coincidentally closely similar, the frequency of male participants was found slightly higher (199) than female participants (177). However, levels of awareness among both genders remained almost similar, with no remarkable statistical difference as shown in table 2. Individuals from the age group 21-40 years participated most actively with the highest number 283 of a total 376. However, the age group of >40 years was found highest among the good (53% individuals) and excellent (47% individuals) levels of knowledge, while the other 2 groups reported individuals in poor and moderate levels as well. No statistically significant difference was found in the level of awareness among different age groups. To observe area wise awareness of COVID-19 among the general population of Pakistan, it was found that most of the respondents 349 out of 376 were from province Punjab, followed by Khyber Pakhtun Khawan 18, Baluchistan 3, and 6 overseas Pakistanis also participated in the study, unfortunately, no participation could be possible from Sindh 4th province of Pakistan. Area-wise study showed good and excellent levels of knowledge among Khyber Pakhtun Khawan, Baluchistan and overseas Pakistanis and people from Punjab

showed a few individuals in moderate and poor category (Table 2).

It was assumed that the medical professionals could demonstrate higher levels of awareness and knowledge about COVID-19 because of their direct exposure to the hospitals and clinics. Therefore, to make a fair analysis equal number of participants were selected from both healthcare professionals and non-healthcare professionals. After acquiring the results, can be declared that there was not any big difference between the participants from both categories. For example, from 188 health care professionals, 89% had excellent knowledge and from non-healthcare professionals, 85% had excellent knowledge and vice versa for a good level. Lastly, we evaluated the knowledge of COVID-19 among different educational levels. The highest participation was reported from the students doing of have done bachelor's in health sciences as compared to other groups, but again no statistically significant difference was found among different educational qualifications. It was collectively observed that the general population from all over Pakistan and from all age & genders groups, professions and educational qualifications had a satisfactory level of awareness (Figure 1 & Table 2).

Variables		Knowledge				Total
		Poor	Moderate	Good	Excellent	
Gender	Female	2 1.2%	13 7.3%	77 43.50%	85 48.02%	177
	Male	0	13 6.5%	97 48.74%	89 44.72%	199
Age	Under 20 Years	0	8 10.81%	28 37.83%	38 51.35%	74
	Between 21-40 Years	2 0.7%	18 6.36%	136 48.05%	127 44.87%	283
	Above 40 Years	0	0	10 52.63%	9 47.36%	19
Province	Punjab	2 0.57%	26 7.44%	164 46.99%	157 44.98%	349
	KPK	0	0	6 33.33%	12 66.66%	18
	Overseas	0	0	3 50%	3 50%	6
	Baluchistan	0	0	1 33.33%	2 66.66%	3
Profession	Health care professional	0	14 7.44%	89 47.34%	85 45.21%	188
	Non health care professional	2 1.06%	12 6.3%	85 45.21%	89 47.34%	188
Education	Bachelor(Health Sciences)	2 1.2%	8 5.19%	71 46.10%	73 47.40%	154

Bachelor (Others)	0	5 5.88%	43 50.58%	37 43.52%	85
Masters or above (Others)	0	3 12.5%	11 45.83%	10 41.66%	24
Masters or above (Health Sciences)	0	3 7.69%	19 48.71%	17 43.58%	39
Others (Intermediate/High school/Uneducated)	0	7 9.45%	30 40.54%	37 50%	74
Total	2 0.5%	26 6.9%	174 46.27%	174 46.27%	376

The attitude of the general population is a key player to tackle the situations like COVID-19 outbreak, along with the international and national action plans. Therefore, we analyzed some of the perceptions and myths about COVID-19 among the population of Pakistan. The majority of people (85%) thought they have good knowledge about COVID-19 from public awareness by government and private resources, which was proved by the results of this study as shown in table 2. However, some very important socio-psychosocial aspects were obtained during the study (Table 2). Thinking about preventive measures, when people were asked about pandemics, only 37% said they already knew what a pandemic and of them most were healthcare professionals or students. The majority of the Pakistani population agreed that self-isolation is a good strategy if a person develops symptoms of COVID-19. Almost all (95%) believed that social distancing can help in averting the spread of disease. A mixed opinion was found when it was asked about the target and severity of COVID-19, but the majority thought COVID-19 can target all age groups and can be deadly but in rare cases only. When a study was initiated vaccine was not available in Pakistan, later it was announced for the public in defined categories. Therefore, only 9.2% knew that the vaccine is available for COVID-19. Just like dengue which most probably strikes in summers, it was assumed that the corona virus is seasonal and will end in summers.

The social, psychological, and economical effects of COVID-19 on the general population were also kept in consideration while designing the study. Out of 376 respondents, 70% believed that COVID-19 had huge psycho-social effects on people around the world. It was proved when 82.5% said they get stressed when they hear about rising cases of coronavirus. Mixed opinions were received about the influence of the pandemic on social ethics. Unfortunately, more than half 68% of individuals including healthcare professionals and students believed that COVID-19 is a biological weapon, and the world is under a biological war situation. On the other hand, we observed in our friends and family that some people do not even believe that COVID-19 is real. But study results proved our observation wrong by reporting that 91% believed in the existence of COVID-19 and only 9% believed it does not exist and is just political hype.

Table 3 Perceptions and myths about COVID-19 among the Pakistani population.	
Questions	Response

	Yes	No	Mixed Opinion/ Not sure
You have enough knowledge about COVID-19 situation?	85%	15%	-
Corona virus is a pandemic situation, did you know about pandemics before corona virus spread?	37%	26%	36%
Self-isolation is a good strategy if a person has COVID-19 symptoms.	72%	14%	4%
Social distancing is a key step to stop the spread of Coronavirus?	95%	5%	-
Corona virus can infect to all age groups but get more sever in people with low immunity, old age group and children.	81.3%	2.1%	16.6%
Corona virus infection is very deadly but, in rare cases only.	66%	10%	24%
Asthmatic Patients are on high risk to Corona virus?	90%	7%	3%
Vaccine for Corona virus is available in your country?	9.2%	90.8%	-
Corona virus will reduce or end in summer?	57.5%	25.3%	17.2%
Do you get stressed when you hear about rising cases of Corona Virus?	82.5%	17.5%	NA
Corona virus pandemic will have big psychological impact on general population.	70.1%	3.2%	26.6%
Corona virus does not exist it is just a political hype	9%	47.2%	43.8%
Do you think corona virus outbreak will ruin our social ethics?	56%	44%	-
Coronavirus is a Biological Weapon?	68.1%	31.9%	-

In countries like Pakistan where majority of people work on daily basis salaries, it is hard to implement lock down situation. Majority of the participants believed that lockdown is the best strategy to control COVID-19 but its not possible because of poverty (table 4).

LOCKDOWN IS A GOOD STRATEGY TO CONTROL THE SPREAD OF COVID-19. IT SHOULD BE IMPLEMENTED IN PAKISTAN?

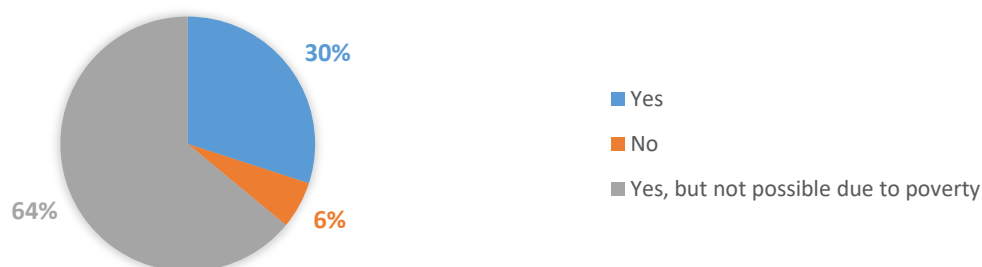


Figure 3 Perception of Pakistani population about lockdown strategy.

Media played a very important role in the spread of awareness about COVID-19 around the world. On the other hand, some media platforms also publish unauthorized news about the outbreak. We tried to identify the role of media in the COVID-19 pandemic situation, according to 25%, Pakistanis media play a positive role in the COVID-19 outbreak and according to 15% it played a negative role. Another community preferred to choose a dual option and expressed their opinion about the limitations of media as well, (21.4%) who thought media played a positive role and it should be promoted to publish news about COVID-19 and the same number (21%) was reported of those who thought it played a negative role and should not be allowed to publish news about the situation.

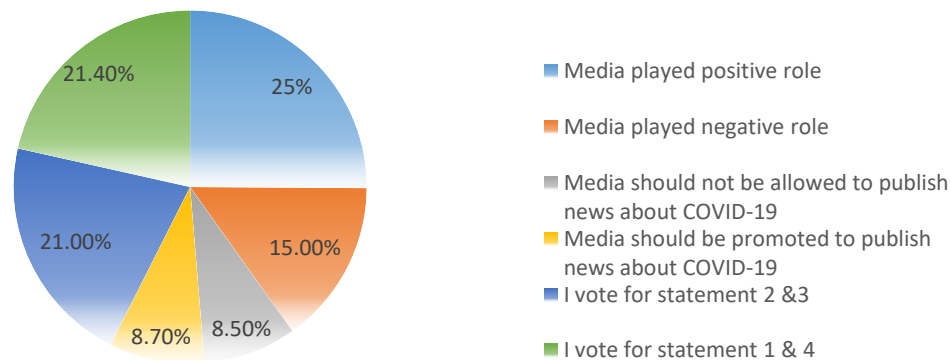


Figure 4 Perception of general population of Pakistan about the role of media.

Discussion: During the 21st century, the health sector around the globe has tackled several epidemics. However, the COVID-19 pandemic gave a tough time to health departments and ministries around the globe because, at the time of emergence, available knowledge was not enough to establish some very effective prevention and treatment strategies. WHO declared an international health emergency in January 2020. Along with WHO, all other health-related organizations collectively contributed to the establishment of COVID-19 prevention strategies, which ultimately helped in breaking the chain of spread. The most important strategy for the prevention and control of any disease is to promote the delivery of awareness and to educate people about the insights of disease, including its transmission, sign and symptoms, diagnosis, treatment and most importantly prevention techniques. We conducted this study to i) assess the level of awareness among the general population of Pakistan and ii) to evaluate the myths and perceptions about COVID-19 among people of different age & gender groups, professions, qualifications, and regions. The results of our study surprisingly demonstrated a satisfactory level of awareness about the outbreak among the selected population. In the questionnaire, it was asked that how many people in your area do you think have awareness about COVID? and most of them believed that they have good knowledge of COVID-19, but they believed < 30% of others would have good knowledge except them. While the results of this study indicated 73% awareness among the population. Nooh et al. 2020 conducted a study to find out the level of awareness among the Saudi population about COVID-19 and found 85% moderate, 13% good and

6% fair knowledge. While our study revealed that the Pakistani population had more knowledge as compared to the Saudi population [30]. However, their study was more detailed in context to knowledge assessment.

People from 21-40 years of age participated more actively and exhibited moderate and good levels of awareness. The reason behind this might be the active involvement of the internet and smartphone use between this group. This group is more involved in social interactions and they are at the verge of being targeted easily [31]. Also, this age group could be more vulnerable to get the infection for being more social. A study conducted in May 2020, indicated the target group of corona virus belongs to the age between 20 to 39 years [32]. During our study people from the other age groups participated less actively but those who participated had moderate and good levels of awareness. The same was the case with gender. It is obvious that the immediate and circuitous mental and social impacts of the corona virus infection 2019 pandemic were unavoidable and influenced the social, economic and emotional aspects of an individual like unemployment and fear to lose your loved ones and yourself. During the pandemic situation, social distancing remained the key strategy to reduce the intensity of viral spread, on the other hand, social distancing led to mental health issues. Health care workers who were on the front line and at higher risk to get a virus were facing Stress and depression, which leads to the fluctuation in their working capacity and efficiency. A survey comprising COVID-19 effects in Pakistan integers the medical professionals as at higher risk [33]. The general public revealed a sense of helplessness and as a result of this psychotic breakdown in Pakistan, 16 individuals committed suicide due to this virus outbreak induced psychological and economical stress [34-36]. Economical stress could be the major cause of negative thoughts, like loss of job, business and rapidly increasing poverty [34]. Another research demonstrated that in the year 2020 nearly one-quarter of the population was dealing with severe poverty below the line of national poverty [36]. Along with all the destructive effects of COVID-19, participants also indicated that the lockdown strategy brought some positive insights regarding the comeback of the family system, as people got a huge time to spend together.

Conclusion: The awareness of COVID-19, its symptoms and prevention remained the same in all groups regardless of age, gender, profession, and education level. Social media platforms along with electronic and print media can play a vital role in spreading information. Summarizing the results of our study about social, economic and mental aspects, it was observed that COVID-19 and lockdown strategy affected the general population (both rich and poor). However, we found that the lockdown policies exhibited both positive and negative effects on people of all economic groups, but they showed an optimistic attitude towards the control of pandemics. Social awareness about the disease is not only helpful regarding its precautionary measures but also to educate the masses but to adopt medical assessments.

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