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COVID-19 and Pakistan: a survey assessing the awareness of patients presenting to the outpatient departments of health care centers.

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ABSTRACT

Background: The coronavirus pandemic is one of the most disastrous calamities of modern times. The outpatient departments of health centers have an important role in the appropriate health education of the patients and their attendants regarding disease prevention and control.

Objective: The objective of this study was to help the health authorities in devising an effective strategy of educating the vulnerable population at their point of first contact with a health professional.

Methods: This descriptive cross-sectional study was conducted from 2 April 2020, to 17 July 2020, in the Punjab province of Pakistan. Data was entered and analyzed using the Statistical Package for Social Sciences (SPSS) version 23.0. A p-value of less than 0.05 was considered significant.

Results: Out of 238, 144 were males and 94 were females and the mean age was 34.53 years. Although television was the most common source of information (51.7%) a significant proportion of the people of Shorkot, i.e., 60.3% relied on word of mouth compared to that of other cities (p < 0.001). Almost 60% of the participants recognized all the symptoms correctly. The majority agreed that wearing a mask was effective in limiting transmission (96.6%) and about 80% of the participants considered the decision of the nation-wide lockdown to be a correct measure. In Shorkot, 32% of the people were against the decision of lockdown, which was significantly higher as compared to people from other cities (p < 0.001).

Conclusions: Our study demonstrated encouraging data regarding awareness of the included population in terms of COVID-19 symptoms and preventive measures.

1. Introduction

Coronavirus is proving to be one of the most disastrous calamities of modern times with wide-ranging impacts on economic, social, and cultural aspects of a large percentage of the world's population [1]. After the origin of the virus from the Wuhan district of China, this disease has spread all over the world and by mid-August 2020 the number of affected individuals had crossed 20 million worldwide with more than 700,000 deaths globally [2].

Pakistan reported its first confirmed cases of coronavirus on 26 February 2020 [3]. This country is bordered by two of the earliest epicenters of this pandemic (China and Iran) and the inevitable arrival of coronavirus in the country was expected. However, Pakistan's already burdened health system and economic woes caused experts and laypersons alike to question the ability of the government to tackle this new but deadly danger [4–6]. In the absence of an effective treatment regimen, the situation soon reached a boiling point and strict travel advisories were issued against the country by international agencies [7]. The government of Pakistan adopted a strategy of educating the masses through media campaigns in order to relieve some of the pressure off of the health professionals working as the frontline warriors against coronavirus [8]. Finding whether this nontargeted and generalized approach proved effective needs further surveys on a national level.

There is no cure for coronavirus disease as of yet and experts have laid stress on the utmost importance of preventive strategies [9]. The education of the public regarding these preventive measures is the need of the hour and the doctors are in a uniquely advantageous position to educate the patients at the point of first contact. The outpatient departments (OPDs) of the hospitals and other health centers have long been used by health professionals to impart health awareness among the masses. The satisfaction of patients by the outpatient services of a hospital depends on many factors

including a comprehensive health information and education system [10,11]. The importance of OPDs in timely and appropriate health education to the patients and their attendants cannot be overstated.

There are many research articles that deal with the knowledge and awareness of health professionals and the general public about COVID-19 but the data concerning patients presenting to health-care units is scarce [12,13]. The objective of this study was to assess the demographic characteristics and gaps in the knowledge (about coronavirus) of patients presenting to the outpatient departments and clinics in order to help the health authorities to devise an effective strategy of educating the vulnerable population at their point of first contact with a health professional.

2. Methods

2.1. Scope of study

This descriptive cross-sectional study was conducted from 2 April 2020 to 17 July 2020 in Punjab province of Pakistan. The data was collected from outpatient departments of government and private health centers of urban, semi-urban, and rural areas of Punjab. Four localities, i.e., Rawalpindi, Multan, Wazirabad, Shorkot were targeted. People belonging from all walks of life and various educational backgrounds were included.

2.2. Sampling technique

The convenience sampling technique was used for data collection. All the patients presenting to the outpatient departments of these health centers were included in the study. Patients who were unable to understand and fill the questionnaire completely were excluded.

2.3. Questionnaire design

The questionnaire consisted of two sections. The first section included questions pertaining to demographic details (age, gender, education, presence of a health-care professional in the family, and the occurrence of coronavirus disease in a friend or family member). The second section included questions regarding the awareness and perception of patients about coronavirus disease.

2.4. Data analysis

Data were entered and analyzed using the Statistical Package for Social Sciences (SPSS) version 23.0 (IBM Corp, Armonk, US). The results were reported as frequencies, percentages, and figures. Chi-square tests were applied for qualitative variables. A p-value of less than 0.05 was considered significant.

3. Results

The study included a total of 238 [Males: 60.5% (n = 144), Females: 39.5% (n = 94)] patients who visited the outpatient departments of Punjab. The mean age of the patients was 34.53 ± 12.49 years. A major proportion of the patients was married (74.8%, n = 178) while 24.4% (n = 58) had a health-care professional in the family. Only 11.34% (n = 27) of the patients reported that one or more of their relatives developed COVID-19 symptoms. The statistics regarding the educational background, location, and professions of the participants are described in Table 1.

Eighty percent (n = 191) of the patients reported COVID-19 to be deadly. When asked about the symptoms of COVID-19, 59.7% (n = 142) recognized all the symptoms correctly. Television was regarded as the most common source of information (51.7%) [Table 2].

Sixty-three percent (n = 151) of the participants reported that no single effective treatment of COVID-19 was identified at the time with 73.5% (n = 175) reported that home remedies were effective for treating COVID-19.

Only 44.1% (n = 105) of the patients reported that the recommended distance between the people should be 2 m. About 34% (n = 82) of the patients considered COVID-19 to be deadly only for old-aged people. The majority agreed that wearing a mask was effective in limiting transmission (96.6%). About 80% (n = 192) of the participants considered the decision of the nation-wide lockdown to be a correct measure.

Table 1. Educational background, city, and professions.

		Frequency	%
Education	Illiterate	41	17.2
	Less than Matric	72	30.3
	Matric	52	21.8
	Intermediate	25	10.5
	University	48	20.2
Location	Multan	46	19.3
	Rawalpindi	46	19.3
	Wazirabad	48	20.2
	Shorkot	98	41.2
Professions	None	72	30.3
	Government Job	20	8.4
	Business	29	12.2
	Retired	5	2.1
	Housewife	52	21.8
	Student	15	6.3

Table 2. Knowledge of symptoms, and source of information.

Parameter		N	%
Awareness of COVID-19 Symptoms	Fever	18	7.56
	Flu	21	8.82
	Cough	51	21.43
	Body Ache	6	2.52
	All of these	142	59.66
Source of Information	Internet	36	15.13
	TV	123	51.58
	Newspaper	8	3.36
	Word of Mouth	68	28.57
	All of these	3	1.26

Only 54 (43.54%) of 124 unemployed (including housewives) while 88 (77.19%) out of 114 employed participants correctly identified all symptoms of COVID-19 (p = 0.008). About 45% (n = 57) of the 124 unemployed and only 26.32% (n = 30) of the 114 employed participants thought that an effective treatment for COVID-19 is available (p = 0.016). People from nearly all the professional domains agreed that the decision of lockdown was correct (p = 0.007) with 22.7% (n = 10) of the private job holders disagreeing with this decision.

3.1. Role of education

Out of the 142 participants who correctly identified COVID-19-Symptoms, 66% (n = 95) had an education of at least matriculation or above (p < 0.001). Seventy percent (n = 69) of the people belonging to Shorkot had education less than matric. Whereas in other areas, the majority of the people had an education level above matric [89% (n = 41) from Multan, 69.56% (n = 32) from Rawalpindi, 47.9% (n = 23) from Wazirabad]. Figure 1 represents this disparity in the level of education among people belonging to the four locations.

About 93 (74.4%) of 125 people with education above matric stated that COVID-19 was deadly for old as well as for young individuals, while 63 (55.75%) of people with education less than matric agreed with this (p = 0.395).

Out of 125 people with education above matric, 35 (28%), while 52 (46.01%) of people with education less than matric stated that COVID-19 treatment was available (p = 0.013). About 95 (76%) of 125 people with education above matric correctly identified all symptoms of COVID-19, while only 47 (41.59%) of people with education less than matric correctly identified all symptoms of COVID-19 (p < 0.001).

Although television was the most common source of information (51.58%) for the patients presenting to OPDs of Punjab, a significant proportion of the people of Shorkot, i.e., 60.3% (n = 41) relied on word of mouth compared to that of other cities [11.8% (n = 8) in Wazirabad, 19.1% (n = 13) in Rawalpindi, and 8.8% (n = 6) in Multan] (p < 0.001).

About 32% (n = 32) of the people in Shorkot were against the decision of lockdown, which was significantly higher than in people from other cities [10.42% (n = 5) Wazirabad, 8.69% (n = 4) Rawalpindi,10.87% (n = 5) Multan] (p < 0.001).

4. Discussion

Since the dawn of time, mankind has faced a number of unprecedented challenges which affected a large percentage of the world population. Every disaster taught mankind valuable lessons and forced them to take certain initiatives whose effects were echoed throughout the world. Coronavirus pandemic is one of such events which has shaken the scientific, social, and economic foundations of the modern world. Despite the advances in modern science, governments failed to stop the spread of this disease and the destructive impact of this disease has been comparable to other historical man-made and natural calamities [14,15]. Arguably, the most logical course
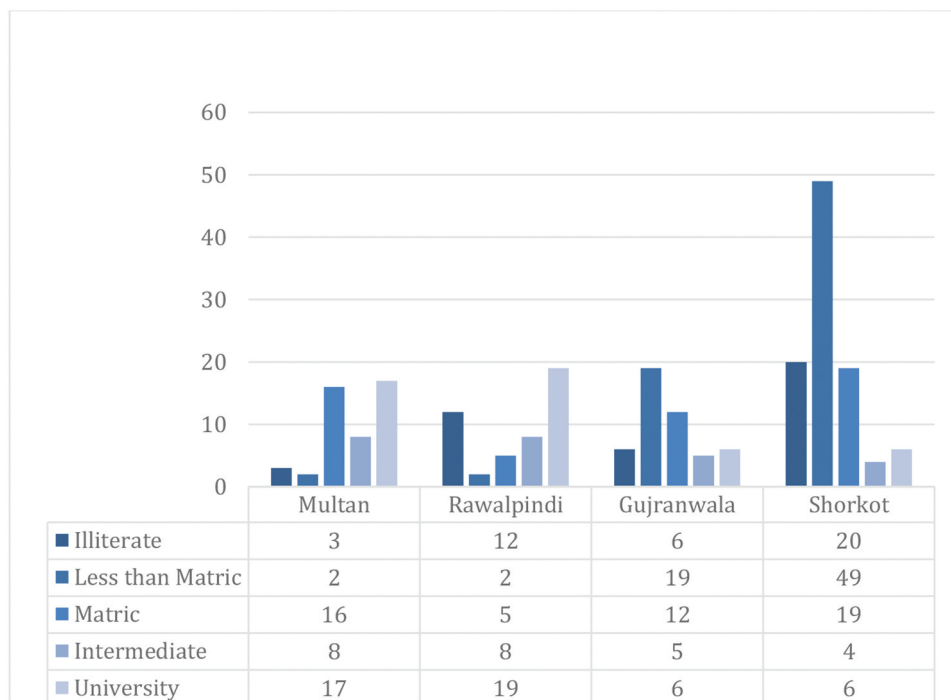

	Multan	Rawalpindi	Gujranwala	Shorkot
■ Illiterate	3	12	6	20
■ Less than Matric	2	2	19	49
■ Matric	16	5	12	19
■ Intermediate	8	8	5	4
■ University	17	19	6	6

Figure 1. Disparity of education with location.

of action to tackle an emerging infectious disease is effective preventive measures and awareness of the public about the emerging threat [9,16]. The effectiveness of awareness campaigns in a resource-poor country like Pakistan depends on a targeted approach which utilizes the available resources cost-effectively. The purpose of this study is to help the decision-makers identify the vulnerable population presenting to health-care units and help devise a strategy of providing them with the most appropriate health education regarding emerging threats to public health.

Our study population consisted of participants from four rural and urban areas of north and south Punjab. The most common source of information reported by the participants in our study was television followed by acquaintances and the internet. Many studies from around the world have also reported TV and the internet as the main source of information about COVID-19 for the general public and health professionals alike [13,16,17]. In contrast to these studies, however, friends and relatives were the second most frequently sought out source of knowledge about the pandemic in our study. The people of Shorkot in particular were significantly more likely to rely on friends and relatives as their source of information as compared to other cities (p < 0.001). Shorkot is a rural area with problems like a low literacy rate (70.4% of study participants from Shorkot had the education of less than matric) and lack of basic facilities like electricity and high-speed internet. These point towards a need of finding ways to educate the community by innovative and unconventional ways by involving local leaders and engaging the public directly along with the use of social media and television campaigns so that the multi-faceted health needs of communities can be met in a comprehensive and cost-effective way [18].

Only 11.34% of the people in our study reported that they knew someone who had developed coronavirus symptoms. Pakistan faced a surge of coronavirus cases in the initial months of the outbreak but the number of cases started to fall dramatically at the end of July [2,19]. Although the decrease in community transmission has been acknowledged by health authorities in the country, the reluctance of the general public in disclosing the actual symptoms of the disease could be one of the reasons for this sudden drop in reported cases. About 34% of participants in this study were of the opinion that COVID-19 is deadly for older patients only. Although the old and immunocompromised patients are more likely to develop serious complications from this disease, there have been many reported cases of mortality among young and healthy patients with no comorbidity. Multiple studies in our setup show that the general public and health-care workers recognize old

age as a risk factor for a complicated course of illness [12,20].

While the majority of participants (63.4%) reported correctly that there is currently no single effective treatment available for this disease, 73.5% of the participants considered home remedies (hot tea, gargles, herbs, garlic) to be effective in preventing and reducing the severity of coronavirus symptoms. Mirza et al. reported that 58.2% and 85.25% of the participants in their study thought gargling and sativa seeds, respectively, have a preventive role against coronavirus disease [20]. There is an emerging evidence of the beneficial role of these remedies in the prevention and control of coronavirus disease and further studies are required in order to design a holistic approach towards tackling this new challenge [21,22].

The most common symptoms of coronavirus disease are fever, cough, and flu but the list of symptoms is being updated continuously as the number of infections increases and the patients exhibit a diverse range of symptoms [23,24]. Around 60% of our study participants correctly identified the multiple symptoms of this disease while cough was the most commonly selected single symptom (21.43%). A significantly larger percentage of study participants with the education of matriculation and above identified the disease symptoms correctly as compared to those with education less than matriculation (p < 0.001). In contrast, 92.4% of the participants in a study by Hussain et al. recognized cough, fever, sore throat, and shortness of breath as possible symptoms of COVID-19 infection [12]. We found an interesting correlation between the state of employment and awareness of the patients presenting to the OPDs with 77.19% of the employed identifying the COVID-19 symptoms correctly as compared to 43.54% of the unemployed study participants who were aware of the disease symptoms (p = 0.008). This disparity can be explained by the level of social exposure of the employed versus the unemployed people. Although the social media and television campaigns have a far greater outreach, people are more likely to believe what they are told by their colleagues and companions which further adds to the importance of devising community outreach programs in order to influence people in a better and more personal way.

Only 44.12% of the participants correctly reported that the recommended distance to avoid contracting the virus was 2 m. An encouraging 96.6% of the study participants agreed that wearing a face mask is effective in limiting the transmission of coronavirus. This was similar to the findings reported by other studies from Pakistan and other countries [13,20]. Around 80% of our study participants were in favor of imposing a nationwide lockdown in order to curb the

spread of the COVID-19 pandemic. People of Shorkot were significantly more likely to oppose the decision of lockdown by the government than all other cities (p < 0.001). The low literacy rate of Shorkot may be a factor behind this finding and a targeted approach towards guiding the people with low education levels may be an effective strategy in order to eliminate emerging threats like coronavirus disease.

5. Conclusions

Coronavirus pandemic has proved to be a litmus test for the preparedness of the international health institutions and decision-making authorities against emerging novel health challenges. The use of mass awareness campaigns might be the most reasonable initial measure but it has its limitations when it comes to the unique demographic characteristics of under-developed areas of a resource-poor country like Pakistan. Our study demonstrated encouraging data regarding the awareness of the included population in terms of COVID-19 symptoms and preventive measures. The majority of the participants correctly identified the symptoms and considered facemask and nation-wide lockdown as appropriate steps. Among other demographic characteristics, education was significantly associated with the variability of responses in different regions. Our outpatient health departments operating in these areas can play an important role in this fight against the COVID-19 pandemic. The involvement of doctors, paramedical staff, and community leaders should be considered when making important health decisions in order to cater to the unique health demands of each community.

Disclosure statement

There is no conflict of interest to disclose.

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