

Knowledge, attitude, and perception of University students toward COVID-19 Pandemic

Original Article

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ABSTRACT

Background: An increasing rate of COVID-19 cases throughout the world has increased the need to investigate the knowledge, attitude, and perception (KAP) of university students toward the COVID-19 pandemic to prevent its rapid spread as public cooperation and awareness regarding prevention is the only way to deal with this pandemic.

Methods: A retrospective cross-sectional study was conducted in Pakistan in April 2020. Data was collected by Google statistics and percent reliability was calculated through SPSS.

Results: The number of respondents n=678, out of which 443(65.2%) were female and 235(34.85%) were male. The perception of students regarding this disease is shown in a table in which 33.2% of students consider it very dangerous. 54.2% thought it moderately dangerous. 62.38% of students consider muscle pain and 73.59% of students consider throat pain as a clinical presentation of COVID-19. 80.7% of students thought that exposure to a suspected case of COVID-19 serves as a means of acquiring COVID-19 infection. The most effective measure of prevention comes out to be hand washing and covering face during coughing and sneezing. The main cause of the spread is a lack of public awareness and cooperation. Social media campaigns are an effective means of educating students about quarantine and controlling its rapid spread.

Conclusion: Researchers concluded that It's the need of the hour to increase awareness related to protective hygienic measures, rapid spread, and providing reliable approaches through social media campaigns to manage this pandemic. We believe that students should be involved in educating their surrounding society.

Keywords: COVID-19, knowledge, attitude, perception, awareness, social media campaigns

INTRODUCTION

Coronaviruses are recognized as a source of respiratory infections ranging from the common cold to severe ailments in humans.[1] The most recently

discovered SARS-CoV-2 causes coronavirus disease. SARS-CoV-2 was first identified in Wuhan, China in December 2019 (WHO). On 31st December 2019, the WHO China country Office informed about 44 cases of pneumonia of unknown etiology noticed in Wuhan city.[2] Up till then, the etiological agent was not identified. The Chinese authorities distinguished the new kind of virus on 7th January 2020. [3] Up till 19th May 2020, 4,731,458 cases were reported globally.[4] The 2019–20 coronavirus pandemic was affirmed to have reached Pakistan in February 2020.[5] Starting on 17 April 2020, the number of confirmed cases in the country was over 8348, with 1868 recoveries and 168 deaths.[5,6] Punjab is at present the locale with a noteworthy number of cases at over 3,686.[6] The country has been put under a nation-wide lockdown until 31 May, which started on 14 March and later

extended.[7] Cases are expanding day by day. Individuals with low immunity for example old aged and those who have chronic diseases and other comorbidities are contracting this infection.[8] Respiratory droplets during coughing and sneezing and close contact with the infected patient are the sources of transmission.[9] Clinical presentation range from mild symptoms of flu, dry cough, fever, and body ache to severe shortness of breath, nausea, loss of sense of taste and smell, and gastrointestinal symptoms including vomiting, diarrhea. [10] So far no vaccine has been developed against COVID and no antiviral treatment is specifically recommended.[11,12] Practicing preventive measures



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such as hand washing, use of sanitizers, wearing face masks in case of symptoms, social distancing, avoiding crowded places, cleaning and disinfecting surfaces, and taking a healthy diet to keep the immune system healthy is of extreme importance.[13] But for these to be helpful, an extensive methodology must be taken for appropriate health education of people. This study looks to explore the knowledge, attitude, and perception of university students against the COVID-19 pandemic. The focus of this study is youngsters of Pakistan who represent the main section of Pakistan. Furthermore, this study aims to explore the frequently used sources of information by young people like other studies conducted in Saudi primary care centers.[14]

MATERIALS AND METHODS

Study context, design, area, and period

A cross-sectional study was conducted across Punjab, Pakistan. Data collection was performed during April 2020 during the COVID-19 pandemic. In the period of this pandemic, multiple sources were employed to convey all the basic knowledge about clinical signs and symptoms, means of transmission, methods of prevention, and severe consequences of the disease. Educational campaigns were run through electronic and print media to emphasize the importance of social distancing, hand washing, utilization of sanitizers, face masks, ingestion of immunity building diet.

Ethical Considerations

This investigation got approval by the Sahiwal Medical College Research Society. Confidentiality was maintained. All questionnaires were anonymously distributed and responses were analyzed.

Data collection, processing and analysis

The information was gathered utilizing google forms based questionnaire designed by a focused group that inquired to break down the demographics, information on signs and symptoms, transmission and prevention of the disease. Data was collected, processed, and exported to SPSS for analysis of the level of knowledge, attitude, and perception of students regarding COVID-19. SPSS version 23 were the sources of data analysis. A chi-square test was used to depict relationships among groups between genders and study levels. A P-value of less than 0.05 was taken as statistically significant.

RESULTS

A total of 678 students participated, out of which 235 (34.8%) were males and 443 (65.2%) were females. Most students were concerned and stressed whereas

only a few reported ignoring it. One third of survey respondents (33.2%) considered it very dangerous causing death as its endpoint where as 54.2% thought it moderately dangerous causing spread to others but a recovery in healthy individuals. Only 7.9% of students consider COVID19 not dangerous, as recovery is possible in most cases without any complications. The standard deviation (SD) risk perception is 0.6609. Only 4.9% of students didn't have any knowledge about the risk of disease. More females than males reported COVID19 as a dangerous disease although p-value and statistics indicated no significant difference in risk perception[Table 1].

Most of the respondents reported fever (91.44%), shortness of breath (92.33%), and dry cough (90.11%), as common clinical presentation of the disease. (Significant p values i.e. 0.020, 0.023, 0.034, 0.035, 0.047 for shortness of breath, dry cough, fever, throat pain, muscle pain less than 0.05). Most of the respondents (40.1%) considered diarrhea as one of the clinical presentations of COVID-19. Majority of students (62.38%) consider muscle pain and 73.59% of students consider throat pain as a clinical presentation of COVID-19, in which the majority of students were females. Results showed that university students had satisfactory knowledge about the clinical presentation of COVID-19[Table 2].

Crowded places, exposure to coughing, sneezing, handshaking and directly touching surfaces such as doorknobs and tables were reported as the most common sources (significant p-value) of transmission of COVID-19. 39.52% reported consuming animal-derived products as a source of transmission. More than ninety percent (96.75%) of the respondents considered coughing and sneezing, 97.64% considered handshaking, 93.95% considered touching surfaces and 99.55% considered the crowded place as the source of transmission of infection from one person to another. The data analysis showed that students were well aware of the means of transmission of COVID-19[Table 3].

A majority of males and females (97.9% and 98.6% respectively) considered covering face while coughing and sneezing and washing hands. Similarly, 98.3% of males and 98.6% of females agreed to the fact that they would regularly wash hands and would keep up hand hygiene. A good percentage of study participants (Males and females-96.2% each) considered the use of face masks. Almost all (99.9 % males and 98.6% females) considered avoiding crowded places and 94% males and 94.8% of females agreed that abstinence

	Males (%)	Females (%)
Perception of risk		
Highly dangerous(death in all cases)	93(39.6)	178(40.2)
Moderately dangerous(spread to others)	127(64.0)	234(63.5)
Not dangerous	9(3.8)	18(4.1)
Don't know	6(2.6)	10(2.3)
P value	0.006	

Table 1: Risk perception of COVID-19

		Males (%)	Females (%)	*SD	**SE	*P-value
Clinical presentation of COVID-19 Fever	Yes	218(92.8)	402(90.7)	0.279	0.01	*0.034
	No	17(7.2)	41(9.3)			
Dry Cough	Yes	214(91.1)	397(89.8)	0.298	0.011	*0.023
	No	21(8.9)	46(10.4)			
Shortness of breath	Yes	223(94.9)	403(91)	0.2661	0.01	*0.020
	No	12(5.1)	40(9.0)			
Diarrhea	Yes	105(44.7)	207(46.7)	0.498	0.019	0.07
	No	130(55.3)	236(53.3)			
Muscle pain	Yes	154(65.5)	269(60.7)	0.484	0.018	*0.047
	No	81(34.5)	174(39.3)			
Throat pain	Yes	178(75.5)	321(72.5)	0.016	0.44	*0.035
	No	57(24.3)	122(27.5)			
*SD: Standard deviation, **SE: standard error of the mean						
*significant p-value						

Table 2: Knowledge about the clinical presentation of COVID-19

Coronavirus can be transmitted through		Yes (%)	No (%)	Don't know (%)	*P-value
coughing and sneezing	Male	230(97.9)	4(1.7)	1(0.4)	0.046
	Female	426(96.2)	9(2.0)	8(1.8)	
handshake	Male	231(98.3)	3(1.3)	1(0.4)	0.031
	Female	431(97.3)	9(2.0)	3(0.7)	
Touching surfaces as doorknobs	Male	219(93.2)	6(2.6)	10(4.3)	0.024
	Female	418(94.4)	12(2.7)	13(2.9)	
crowded places	Male	235(100)	0	0	0.049
	Female	440(99.3)	3(0.7)	0	
Consumption of animal-derived food products	Male	95(40.4)	84(35.7)	56(23.8)	0.002
	Female	173(39.1)	174(39.3)	96(21.7)	
*chi-square test for difference in gender showing significant p-value					
significant p-value					

Table 3: Knowledge about the COVID-19

		Agree (%)	Disagree (%)	Don't know (%)	*P-value
Covering face while coughing and sneezing	Male	230(97.9)	2(0.9)	3(1.3)	0.029
	Female	437(98.6)	4(0.9)	2(0.5)	
Washing hands and keeping up hand hygiene	Male	231(98.3)	2(0.9)	2(0.9)	0.014
	Female	437(98.6)	5(1.1)	1(0.2)	
Using face mask	Male	226(96.2)	6(2.6)	3(1.3)	0.001
	Female	426(96.2)	16(3.6)	1(0.2)	
Avoid crowded places	Male	233(99.9)	2(0.9)	0(0)	0.022
	Female	437(98.6)	6(1.4)	0(0)	
Abstain from touching nose, mouth and eyes reduces the risk of infection	Male	221(94.0)	8(0.4)	6(2.6)	0.016
	Female	420(94.8)	13(2.9)	10(2.3)	
*Significant p values					

Table 4: Knowledge about protection to prevent transmission of COVID-19

from touching nose, mouth, and eyes diminish the risk of infection and provide protection against the virus transmission from one person to another. Our study also found highly significant associations of all the answers to the above-mentioned questions having P-values of 0.029, 0.014, 0.001, 0.022, and 0.016 respectively[Table 4].

The most frequently cited source of information regarding this pandemic was social media, followed by print media. About one-fourth of the respondents reported Healthcare workers, their surroundings, and only minority reported print media as a source of knowledge. Against other media, doctors appear to be a less favored option for gathering knowledge[Figure 1].

DISCUSSION

The spread, severity of the disease, and techniques for sharing and distribution of information can influence the levels of understanding about a specific infectious illness as shown by different studies conducted during epidemics throughout the world.[15] On the account of COVID-19 pandemic, the spread of the disease in almost every region of Pakistan has evoked the interest of the population for awareness about adapting preventive measures both on the community and on the individual level.[16] Therefore, this investigation had the option to explore the degree of understanding of the disease among university students. The results recommend a decent degree of recognition about the illness hazard. Detailing fever and shortness of breath as proof of clinical presentation of the disease depicts the level of concern of students and their perception of the serious consequences of contracting coronavirus disease. Inquiry of all the essential information about

this pandemic was included in the questionnaire. The interpretation of the study results proposes the well-established connection between data accessible in the online networking and depth of insight of students. Most of the students have good knowledge about the means of transmission, clinical presentation, and protective measures. The most effective way to reduce the risk of transmission comes out to be quarantine and self-isolation. It is needed to highlight the practice of quarantine and self-isolation.[17,18] At present in this pandemic, there is no immunization for COVID-19. Currently, many countries are doing a trial for the vaccination but it may take a decade.[19] These countries are experimenting with different drugs, such as Hydroxychloroquine (which is reported to have some serious adverse effects), BCG vaccine, Azithromycin, and Remdesivir have been tested in corona positive patients.[20] Plasma transfusion from infected patients is also done [21]. But it is not confirmed that these measures are fully helpful against COVID19 infection. Till that time, the best anticipation is to abstain from exposure.[22] Preventive measures that may decrease the danger of exposure include the utilization of face masks, covering mouth and nose properly while coughing and sneezing, washing of hands with soap or hand sanitizer with 60% alcohol, avoid touching eyes nose mouth after contact with surfaces as the virus can remain active on surfaces up to hours.[23] The people with low immunity and those with chronic comorbidities such as diabetes mellitus, COPD, hypertension, cardiovascular diseases, are highly vulnerable. Therefore, natural Vitamin C and citrus fruits should be consumed to boost immunity to fight with this infectious disease.[24]

Crowded places serve as exposure and transmission platform for coronavirus. So, it is recommended to maintain social distancing, self-isolation, and quarantine in case of exposure. Therefore, many countries all over the globe are facing a lockdown situation. The government and health-related authorities of these countries are taking strict action for the implementation of lockdown situations just as China has acquired benefits from this.[25]

This pandemic has overcome the daily routines of the majority of the population. There is a health emergency crisis at hospitals, educational institutes are closed, markets, restaurants, gyms, recreational places are locked down. This situation has started a new debate regarding the psychological aspect of the population [26]. We need to promote healthy activities to remove stress among the general population.

CONCLUSION

Our results revealed that it is crucial to raise the level of information about protective hygienic measures among both Pakistani students and the population. Health care workers can educate students and populations about the prevention and rapid spread of disease through social media campaigns as these campaigns proved to be a very efficient source of information. It is suggested to pay more attention to employing social media resources as a means of promoting public health education. The government should be consistent in implementing preventive measures throughout the country. Students should play their role in educating a vast majority of people who are not well aware of the seriousness of the disease and the importance of preventive measures as shown in studies.

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All the data shared is under terms of [CC BY](#). The Supplementary Material is raw data sheet in PDF format with size less than 500 kb and can be downloaded from this URL:

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