



RESEARCH ARTICLE

COVID-19 AWARENESS, KNOWLEDGE, AND PERCEPTION IN THE
POPULATION OF PAKISTAN

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ABSTRACT

Background: In 2020, the COVID-19 outbreak was intensifying, and a handful of confirmed cases in Pakistani citizens were recorded in the initial phases of the disease. During the whole nation's lockdown, this study evaluated Pakistanis' comprehension of and reactions to COVID-19. **Objectives:** The purpose of this study is to gain a better understanding of the knowledge, awareness, and perception of the coronavirus among Pakistani citizens. This study will pay particular attention to Pakistan's urban population. In order to boost the response to the COVID pandemic in Pakistan, the findings of this research will have an impact on the government's communication strategy and community participation, with an emphasis on young people and healthcare professionals. **Methodology:** Between July 20 and November 30, 2022, a survey was performed online in Pakistan. A number of websites and social media platforms, including one that did not require any data, widely disseminated the survey. On the basis of the information, awareness, contact to as well as faith in databases, as well as community and broadcasting perspectives, descriptive statistics were considered. Evaluations were compared to projections for mature people in the country in 2020. **Results:** Out of 11,235 participants (100%) about 77.72% were free of COVID-19's primary symptoms. More than 75% were properly informed about disease prevention. By educational level ($p < 0.001$), work status ($p < 0.001$), and nationality ($p < 0.001$), there were significant differences. 21.86% of people said that they were at great threat of getting coronavirus. **Conclusion:** Strategic policy must be informed by an understanding of the information, attitudes, and behavior of those affected by the COVID-19 epidemic. The findings immediately address communication needs and gaps while also aiding in the public's comprehension of the coronavirus.

Keywords: COVID-19, WHO, Pandemic, SARS-CoV-2, Vaccine, Questionnaire.

INTRODUCTION

In January 2020, throughout the contemporary pneumonia epidemic, the 7th type of human coronavirus, known as the severe acute respiratory syndrome (SARS-CoV-2), originated in Wuhan, China. SARS-CoV-2, a newly discovered innovative coronavirus, is responsible for the highly contagious ailment known as coronavirus disease. In less than three months after the virus's first detection in Wuhan, China, in December 2019, it had reached the global level (1). This epidemic has significantly impacted human life and the world economy (2).

As of May 20, 2020, almost 4,806,299 people had been afflicted by the infection, which spread throughout the whole biosphere and led to 318,599 fatalities. The fatality rates of SARS-CoV-2, SARS-CoV, and the Middle East respiratory syndrome, coronavirus (MERS-CoV) is 2.9%, 9.6%, and 36%, respectively. All of these viruses cause serious pneumonia. The remaining 4 types of human coronaviruses, HKU1, NL63, 229E, and OC43, usually cause a self-restricted infection with minimal signs and symptoms (3).

The coronavirus epidemic started in China. It quickly spread globally, altering how we view globalization and the digital age forever. While many nations were on lockdown, international travel had been suspended, businesses and industries struggled to survive, and new opportunities and challenges were emerging. One of the most intriguing effects of the pandemic was seen in higher education, where new cutting-

edge technologies are sparking a digital revolution (4).

The WHO declared the coronavirus outbreak a pandemic on March 11, 2020. The coronavirus pandemic generated problems on a global scale and greatly influenced daily life routines, connections, and household dynamics. However, depending on regional variations in the spread of infections and the effectiveness of precautionary measures, as well as subjective and environmental hazards and protective factors, the impact varied significantly. Therefore, the objectives of this special issue were to highlight the effects of the disease on the family system as well as deepen our comprehension of how these effects might vary between families (5).

The coronavirus was declared a pandemic due to the pervasive spread of SARS-CoV-2 and the thousands of deaths brought on by COVID-19 on March 12, 2020. The world has already paid a hefty price for this pandemic in the way of lost individual lives, financial costs, and increased scarceness (6). The COVID-19 pandemic in 2020 (coronavirus), which started on February 26, 2020, moved quickly throughout Pakistan after starting in Karachi city. Over 6,200 people were impacted by the illness in the initial 2 months, and 111 individuals passed away. Many questions come up when we compare the COVID-19 tragedies in Pakistan to those in China, Iran, and the European Union. The nation's geography, poverty, low literacy levels, the state of the environment, hygienic conditions, and dietary practices are only a few of the

difficulties we face in containing this pandemic. These areas have poor conditions, although Pakistan's COVID-19 outbreak was slower than that of other developing nations (7).

The impact of COVID-19 seems to be lessened in Pakistan by factors like the country's humidity, hot weather, early coronavirus response, natural resistance in people, BCG immunization, and the proportion of youthful individuals. The study includes a discussion of the COVID-19 pandemic's emergence in Pakistan as well as its day-to-day development in terms of a virus response, natural resistance in people, BCG immunization, the proportion of youthful individuals, the pandemic's emergence in Pakistan, and its day-to-day development. The use of chloroquine (a commonly consumed drug against malaria), remdesivir (which is an adenosine analogue, that is used to combat RNA viruses), plasma recovery, counteracting antibodies affecting the angiotensin-converting enzyme-2 receptor, and an angiotensin-converting enzyme-2-like molecule that can bind to the "S" protein that is present in the coronavirus are also covered in terms of treatment procedures and their drawbacks. As well as government relief measures, the effect of COVID-19 on Pakistani economics is explored (8).

This research will explain the present situation of COVID-19 awareness, information, and perception in the population of Pakistan, safety concerns, and other epidemiological and social aspects of the disease. The main things that are talked about are the preference for vaccines, how to

treat the infection, how the coronavirus infection affects life, and how to get ready for a possible next phase.

Study Objectives

The major goal of this research is to advance the understanding of information, attitudes, and behaviours related to perceptions of coronavirus in the Pakistani population. This research was also performed to update the strategy during the lockdown period of the epidemic. The findings of this project will influence the government's communication strategy and community engagement, focusing on the youth and the most vulnerable communities through engagement with youth leaders, healthcare professionals, and local and traditional leadership towards strengthening the response to the COVID epidemic in Pakistan.

MATERIALS & METHODS

Study Design

On July 20, 2022, a cross-sectional online survey was started among the varied inhabitants of Pakistan. The online survey was adopted because the individual survey was not feasible during the COVID-19 pandemic era and also due to social distancing issues, the environmental conditions of Pakistan were unfavourable. In such conditions, an online survey was the only option left to accomplish the outcomes of this project.

Sampling and Procedures

The individuals who participated in this research had active access to the internet and

modern technologies like smartphones or laptops, etc. The majority of the population was above 18 years old. According to educational level, 0.50% of the participants were in matric, 12.80% of the participants were in intermediate, and 30.60% were master's-level candidates. The percentage of medical graduates was 43.00%, while that of engineering graduates was 2.40%. 10.70% of the participants were engaged in other fields of study. The employment status of the participants states that 9.78% were employed while 4.68% of the population was unemployed. The majority of the population, about 81.70%, are students. 0.43% of the population was retired, 2.98% owned a business, and 0.43% had other sources of income. The majority of the population, about 97.87%, belonged to Pakistan. 1.27% of Indian individuals and 0.85% of individuals from other nationalities also participated in the research.

Methods

Through consultation with medical experts, professionals in public health, and academic pharmacists, the questionnaire was created. Recent research on public perceptions and reactions to the coronavirus disaster provided assistance in the formulation of the questionnaire. The questionnaire asks about general knowledge about COVID-19, such as awareness of symptoms, opinions, and minds; awareness of the threats of the disease; information resources; vaccination preference; dose received; community ideas; and public awareness and feedback capacities. A total of 25 closed-ended questions made up the questionnaire. This

survey was only available in English because the shutdown had an impact on services for linguistic translation.

Correct symptom knowledge was characterized as being able to select from a variety of multiple-choice answers the symptoms of cough, fever, diarrhea, sore throat, runny nose, nausea, vomiting, and shortness of breath. A multiple-choice response survey was used to gauge knowledge about viral illness prevention. Participants had to choose which vaccine they wanted to receive and how many doses of that specific vaccine they wanted.

Data Collection Instrument

A questionnaire about respondents' opinions of COVID-19 was posed. To determine the logistic regression, the correlations between sociodemographic factors, the information source, and public awareness and education were calculated. It was also used to determine the correlations between the number of COVID-19 preventive behaviors and knowledge and between misinformation, belief, and the COVID-19 test score.

Study Duration

The questionnaire was circulated among the public on July 20, 2020. This questionnaire-based study on COVID-19 awareness, knowledge, and infection control behaviors in healthcare settings as well as in society received 11,235 responses from the people of Pakistan until the end of November 2022. Overall, the study was completed in 6 months. The questionnaire was modified based on the most recent interim guidelines and knowledge for healthcare professionals released by Disease Control and Prevention

(CDC) centres in the United States. Overall, the division of replies was given as frequencies and percentages, with a practical sampling technique to gather data. Based on the proportion of correct answers, descriptive statistics were run for each group and subgroup. With the median test for the percentage of right answers, individual pairwise comparisons were conducted.

Participant Consent

To encourage participation in the poll, the study team sent online connections to the general population. They encouraged participation in the poll, and the study team sent online connections to the general population. The sharing of links was encouraged among all participants. The link was a typical online link for one of Google's forms, which the participants filled out in accordance with their respective opinions and responses. The survey was able to reach Pakistan in this manner across a wider income spectrum because there was no cost associated with completing the questionnaire. No personal information was needed to participate in the survey, and responding was completely anonymous. We asked for informed consent from the participants. They were made aware that participation was completely voluntary, those responses were kept anonymous, and they could opt out at any time. An individual Google Form survey took 5 minutes on average to complete.

Statistical Analysis

The data were examined using Microsoft Excel. All projections were compared to Pakistan's mid-year population estimates for 2022 in order to ensure that the results could

be applied to the remainder of the nation regardless of nationality, educational attainment, or job position. Correct information, varied attitudes, and practices were compiled using descriptive statistics according to socio-demographic variables. Using pairwise t-tests and Chi-square testing, differentiations in estimates among demographic categories were evaluated. The limit for the significance of the statistical analysis was set at $p < 0.001$ (9).

RESULTS & DISCUSSION

Technical recommendations for handling COVID-19 outbreaks have been declared by the WHO, but they come with a warning that they may vary from country to country based on risk levels, public perceptions, local resources, and the circumstances at hand. Pakistan had experienced the subsequent phases of the epidemic at the time of the study and had already started implementing policy-level and public health initiatives. It is imperative to gather information on the country's awareness of and response to the outbreak as soon as possible. This gave researchers the chance to start studies that would evaluate the public's views, knowledge, and behaviors while also monitoring changes over time.

Additionally, these findings could serve as proof that public health information and communication should be tailored to a community with disparities in health, socioeconomic status, educational attainment, sociocultural identity, and geographic location. Furthermore, many live in congested spaces and are at risk for infection since they frequently have limited

contact with social as well as medical facilities.

This research is one of the first in a series of group studies that will be done during Pakistan's epidemic to gather data that will be used to guide policy and meet communication needs. This study aims to evaluate people's understanding of COVID-19 and their attitudes, actions, and responses to governmental changes and public health initiatives made in the first month of the lockdown. Common survey techniques cannot be used because of the nature of COVID-19 outbreaks. Rapid online surveys allow you to reach a large number of people in a cost-effective and timely manner, providing you with quick insights into the COVID-19 response. This survey attracted many respondents from all over the country over a period of 30 days.

There was a very high level of general awareness about signs and symptoms, knowledge and information about the infection, and preventative actions. In spite of this, those under the age of 29, those living in squalid conditions, those from rural areas, part-timers, and the elderly reported having poorer knowledge. Self-perceived

knowledge about coronavirus signs and symptoms, knowledge and information about the infection, and preventative actions significantly corresponded with real knowledge in these areas. A small number of people thought they knew enough or were up to date on the latest research, but they got some of the symptoms and ways of spreading the disease wrong.

Coughing, fever, runny nose, and respiratory symptoms like shortness of breath were the most common symptoms mentioned by respondents. The outcomes of our survey are harmonized with those of the research that was conducted in China, in which 90% of the participants reported having solid information about the coronavirus pandemic (10). While there was a good overall understanding of symptoms and transmission, according to a comparative study involving people from the UK and the US, there were also numerous misconceptions (11).

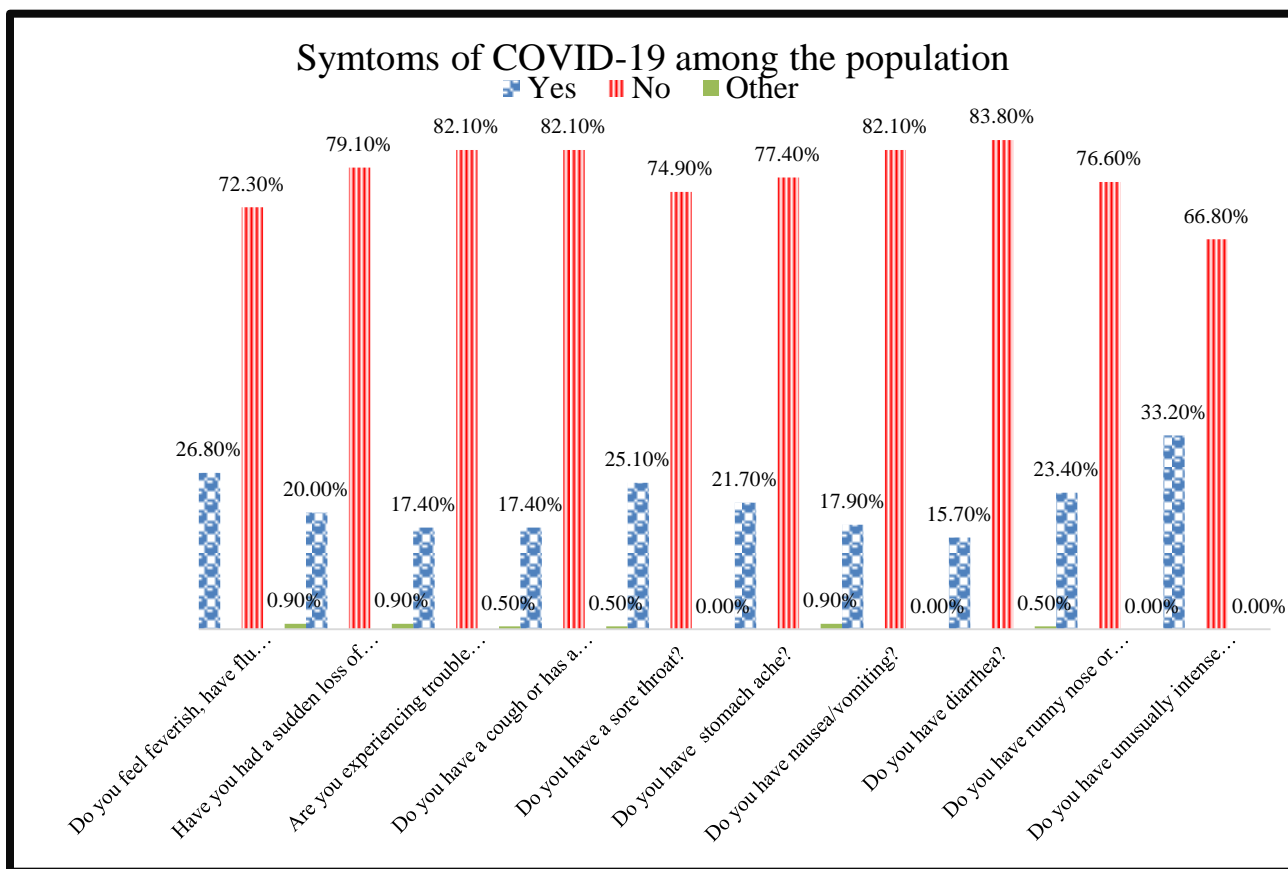


Figure 1. Graphical representation of the facts and figures of data collected by symptoms of COVID-19 by the population of Pakistan.

The information about viral proliferation through coughing, sneezing, and contacting one's face after interacting with a disease-ridden individual was lower than the information about viral spread through

diseased surfaces and being around sick people. Because all of the parameters are widely known in Pakistan, it is critical to close the knowledge gap through targeted health education initiatives (Figure 1).

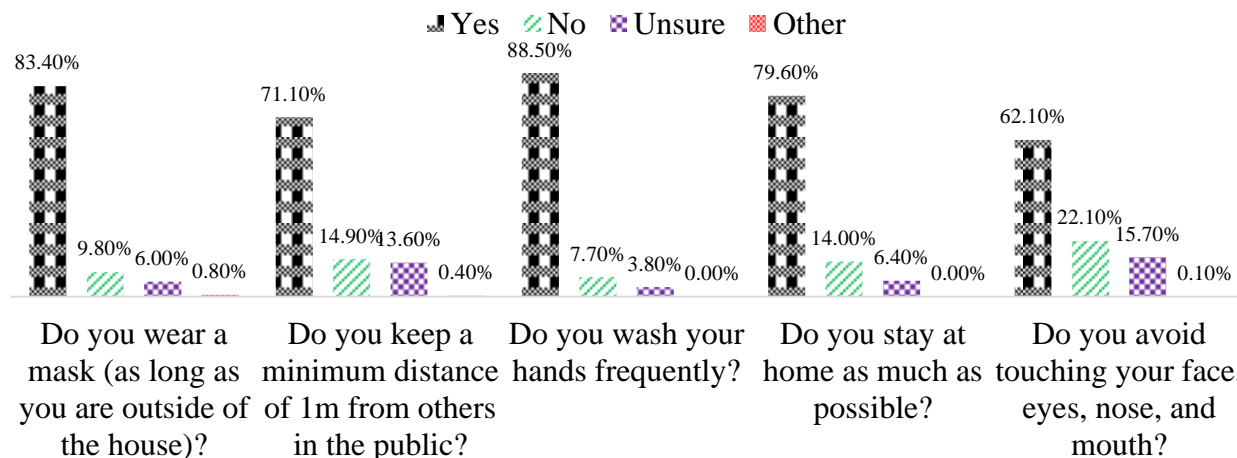


Figure 2. Graphical representation of data collected by awareness of COVID-19 in the population of Pakistan.

Since social distance is a challenging behavior that goes against human nature, health education should thoroughly describe how the transmission process works. Health education initiatives should stress the value of routine surface cleaning and disinfection in light of the knowledge of virus transmission through surfaces. Countering false information and disinformation is also crucial for health education.

With the intention of managing this epidemic quickly and effectively, communication and community involvement

is essential. Regarding the many information sources that were available on COVID-19, radio and television, as well as official communication, were heavily used and trusted.

In order to increase the coverage of health education, this gives the government the chance to disseminate information via radio and television (Figure 2).

Participants who believed they had a high risk of contracting coronavirus disease had lower levels of confidence in the ability of the administration, the national health system, as well as local supermarkets and medical services, to control the pandemic.

The avoidance and management of transferable ailments can be made more challenging by a population's levels of terror (12). So, it is important for institutions and governments to talk to the public in a way that reassures and calms them, especially those who are at a high risk of getting sick. The Figure 3(a). data gives a graphical representation of the different types of vaccines the population was administered either on the availability of the vaccine or on their own preference. From the collected data, it was seen that SinoPharm was the leading vaccine followed by Pfizer. And the Figure 3(b) the percentage of vaccine dosing the population got. Most of the population received first dose but less than 40% of received second dose as they were unwilling to do so. The population was also asked about the dosing of medications they received required only for COVID-19 or other medicines such as NSAIDs or other. Most of population also indicated that they had not faced COVID-19 infection either during or after the first dose as the common knowledge perceived by the general population. The data can be seen in Figure 4.

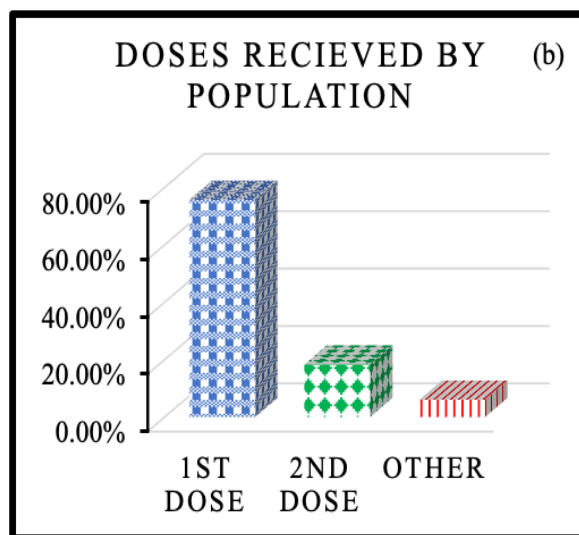
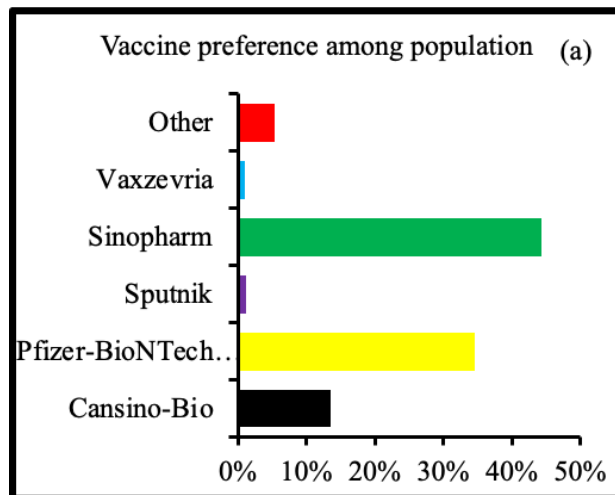


Figure 3. Graphical representation of data collected by COVID-19 vaccine preference (a) as well as doses (b) received by the population of Pakistan.

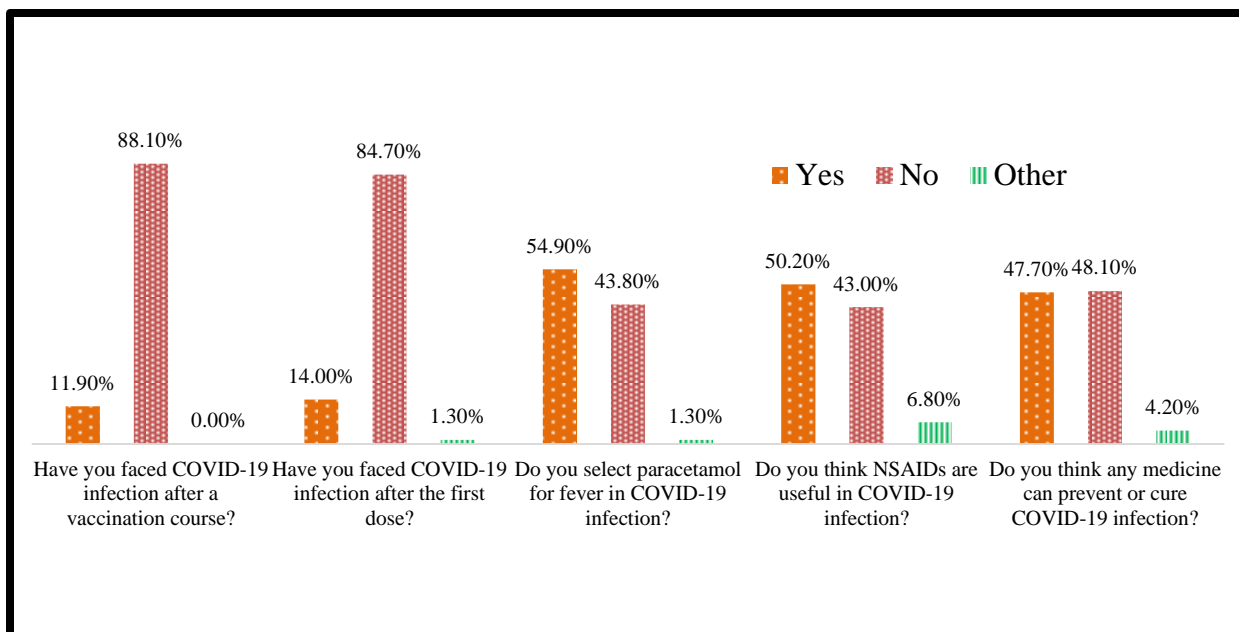


Figure 4. Graphical representation of the data collected by investigation of knowledge of treatment protocols among Pakistan's population

This research has several restrictions. A drawback of the surveys that are conducted online is that a particular sub-population is unable to have complete access to the internet and is therefore less likely to answer online surveys. Online surveys use website visits as a basis for sampling. The present poll naturally attracted less participation from several population segments, like the unemployed and those who live in squalid conditions, and there was no sign that it reached out to rural regions.

The disparate participation percentages most likely also reflect challenges with connectivity and contact with modern equipment and technology, including the internet and digital devices. The study's use of quick online surveys, which deliver results instantaneously as the coronavirus epidemic develops, is one of its advantages (13).

CONCLUSION

In conclusion, the risk of contracting COVID-19 involved a significant level of personal responsibility. In this moment of crisis, Pakistanis' compassion and faith in the government are important advantages in

the nation's fight against COVID-19. The strategic policy must be informed by an understanding of the information, opinions, and behaviours of those affected by the coronavirus epidemic. The findings immediately address communication needs and gaps while also aiding in the public's comprehension of coronavirus as the phases of the epidemic advance.

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None

DECLARATIONS

Authors' Contributions

AA contributed to study concept and MHRB contributed to study design and data collection. IRB, HA, AA, IRB did the literature review, contributed in data analysis and interpretation, and critically reviewed the manuscript. All the authors read and approved the final manuscript.

Ethical Approval

Ethical Approval was obtained from Research & Ethics committee of Minhaj University Lahore (IRB # MUL/AHS/145).

Conflict of Interest

The authors declare no conflict of interest among them.

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