

## Original Article

# Health-seeking Behavior of People in Twin Cities of Pakistan during the COVID-19 Pandemic: A Cross-Sectional Study

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## Author's Contribution

<sup>1</sup> Conception of study, Experimentation, Study Conduction, Analysis, Manuscript

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## Abstract

**Introduction:** The pandemic presents a novel area for research, and making use of this opportunity makes this study crucial for assessing trends in health-seeking behavior during this period. The findings are significant for authorities, as they can inform policy development aimed at improving public health responses. Specifically, the study focuses on examining the general public's response to health-related issues during the pandemic, exploring reasons for avoiding medical consultations, assessing the prevalence of self-medication, and analyzing the relationship between self-medication and socio-demographic variables.

**Objectives:** This study is focused on determining the response of the general public to health-related issues during the coronavirus pandemic, evaluating the reasons for avoiding medical consultation, assessing the frequency of self-medication, and finding the relation of self-medication with socio-demographic variables.

**Material and methods:** A self-developed questionnaire was used, and data collection was conducted online through Google Forms. Data entry and analysis were performed using SPSS 25.0 software. Categorical data such as gender, socioeconomic status, education level, and self-medication practices were presented as frequencies and percentages. The chi-square test was employed to determine the correlation between self-medication practices and categorical factors like gender, age, socioeconomic status, and education level, with a p-value of less than 0.05 considered statistically significant.

**Results:** Most respondents did not consult doctors about their symptoms and instead resorted to self-medication. Many participants also used telemedicine during this duration due to fear of getting infected by COVID-19. A significant positive association was found between self-medication practice with age, socioeconomic status, and education.

**Conclusion:** This study highlighted that patients were resistant to visiting hospitals during a pandemic. Government healthcare providers should ensure that patients feel comfortable while going to hospitals and should arrange some campaigns to spread awareness about the adverse effects of using self-medication.

**Keywords:** Pandemic, COVID-19, Self-medication, Health, Non-prescription drugs, Telemedicine

## Introduction

In December 2019, an epidemic of pneumonia of unknown origin was reported in Wuhan, Hubei Province, China. The genome of the virus showed that it was severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).<sup>1</sup> In Covid-19 positive cases were first reported on 26 February 2020 and kept on rising.<sup>2</sup> Early in the pandemic, most of the information circled topics based on symptoms and outcomes of coronavirus infection. However, with the pandemic spreading rapidly across the world, an increased fear of deprivation of health care provision was also seen in the public.<sup>3</sup>

The health-seeking behavior of people changed with the emergence of the pandemic. Health-seeking behavior is defined as any action undertaken by individuals who perceive themselves to have a health problem or to be ill, to find an appropriate remedy.<sup>4</sup> A striking decline in emergency department visits, medical admissions, and non-Covid admissions in America was observed, with the greatest decline in regions where the pandemic was most severe.<sup>5,6</sup> According to a study conducted at BPCI-A about Half of the total number of expected surgeries were performed.<sup>7</sup> Due to social distancing, self-isolation, and quarantine, there was a significant decrease in hospital admissions and treatment of acute coronary syndrome due to the COVID-19 outbreak in Austria<sup>8</sup> In a study conducted in Italy, pediatric visits were markedly decreased during Covid peaks.<sup>9</sup> Research in Pakistan, showed a surge in the use of self-medication that can have a negative impact on the health of people.<sup>3</sup> Heightened fears of going to hospitals prevailed in the public partly because of a lack of information on protective efforts and

precautionary measures ensured by hospitals to protect people.<sup>10</sup> In an attempt to avoid going out for medical check-ups, a rise in the use of telemedicine use was observed in Arizona, Florida, and Texas.<sup>11</sup> Higher income groups and more educated people were keener to seek health information.<sup>12</sup> Telemedicine emerged as a great way of providing care to patients without exposing them to Covid while ensuring that those who cannot or do not want to visit the hospitals are provided adequate health care.<sup>13,14</sup> According to a study conducted in the United States, it was found that people who lacked access to telemedicine were affected the most.<sup>5</sup>

The importance of understanding changes in health-seeking trends and the associated factors is essential because it will help cope with future waves of coronavirus or any other pandemic through social media campaigns best suited for the general population. We also want to explore whether this pandemic promoted the trend of self-medication or not as it will facilitate the government in taking essential steps to minimize the careless use of self-medication. This study will also help the government and other concerned authorities make effective health-related policies based on evidence. This study is focused on determining the response of the public to health-related issues during the coronavirus pandemic, evaluating the reasons for avoiding medical consultation, assessing the frequency of self-medication, and finding the relation of self-medication with socio-demographic variables.

## Materials and Methods

This cross-sectional study was conducted online via the dissemination of an online questionnaire to the general population of Rawalpindi and Islamabad.

Data was collected over 6 months via nonprobability convenience sampling. The sample size was calculated using the WHO sample size calculator and it came out to be 385 with a 95% confidence interval, a margin of error of 5%. Respondents ranging in age from 15 years to 50 years were included in the study. Participants with a history of previous or ongoing diagnosed psychiatric illness were excluded from the study.

An online questionnaire was generated keeping in view the aims and objectives of the study. The study's purpose was mentioned at the beginning of the questionnaire so that the respondents develop a good understanding of the study and provide appropriate responses. Filling and submission of the data was considered implied consent. Confidentiality of data was ensured to all the participants. The questionnaire was circulated among the general population of Rawalpindi and Islamabad using different social media platforms. Forms with missing information and those not meeting the inclusion and exclusion criteria were discarded.

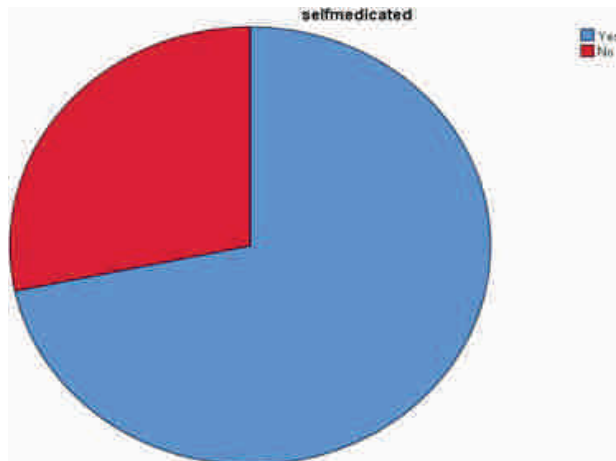
Google form was used for data collection our questionnaire comprised of 2 sections. Section 1 was based on personal and sociodemographic details of the respondents such as age, gender, socioeconomic status, education status, marital status, and occupation. Section 2 included respondents' health-seeking behavior<sup>17</sup> towards health issues during the COVID-19 pandemic, reasons for avoiding medical consultation, frequency of self-medication, and associated factors. Data was entered and analyzed by using the SPSS 25.0 software. Categorical data such as gender, socioeconomic status, education level, and practice of self-medication were presented in frequency and percentages. The chi-square test was applied to find out the association

between the categorical variables like self-medication with different age groups, genders, socioeconomic status and education levels, active source of information, and area of residence practice of self-medication and related categorical factors such as gender, age category, socioeconomic status, and education level. A p-value less than 0.05 was taken as statistically significant.

## Results

Most of the respondents were 20 to 30 years of age (n=290, 74%). 50.3% were males (n=197). 80% (n=314) of participants were unmarried. According to economic status, approximately 40% (n=156) of the respondents belonged to the upper class, 35.5% (139) middle and 24.7% (n=97) lower class. The majority was urban population (n=316, 80%). 53.6% (n=210) of the participants had completed their graduation. 59% (n=233) of participants used the internet as the main source of acquiring pandemic-related information with television being the second most used source.

The most common complaint reported was fever (n=75%) followed by body aches (n=45%). Other common symptoms included abdominal pain (n=21 %), diarrhea (n=23 %), and dyspnea (n=15 %). A wide variety of responses to health symptoms were seen in the respondents. The majority of the respondents (60.5%) did not consult Doctors for their symptoms, the rest (39.5%) did consult. The majority of the respondents (n=133, 33.9%) reported taking medication on their own without consultation from a doctor. Similarly, 15.1 % (n=59) of participants used an old prescription they had gotten a time ago for similar complaints. Approximately 1/5<sup>th</sup> of the respondents did not take any medication and waited for the symptoms to settle on their own.



**Figure 1:** Frequency of self-medication

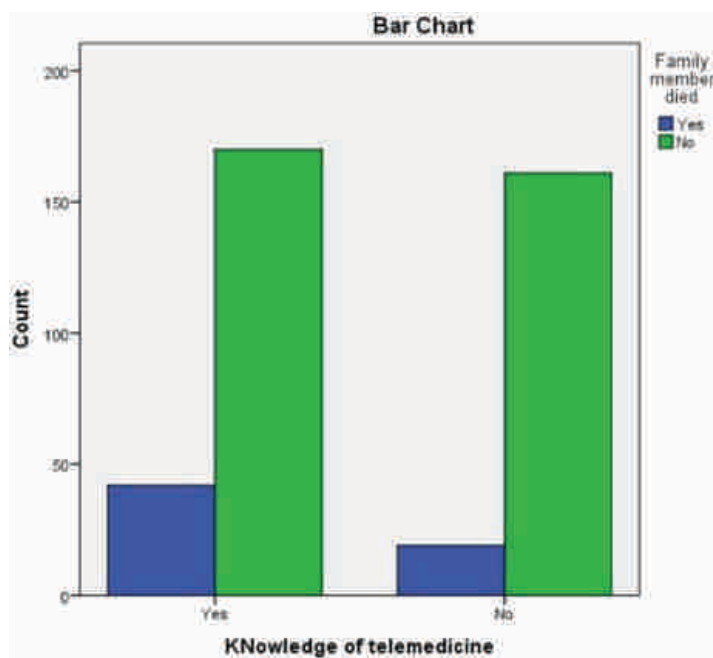
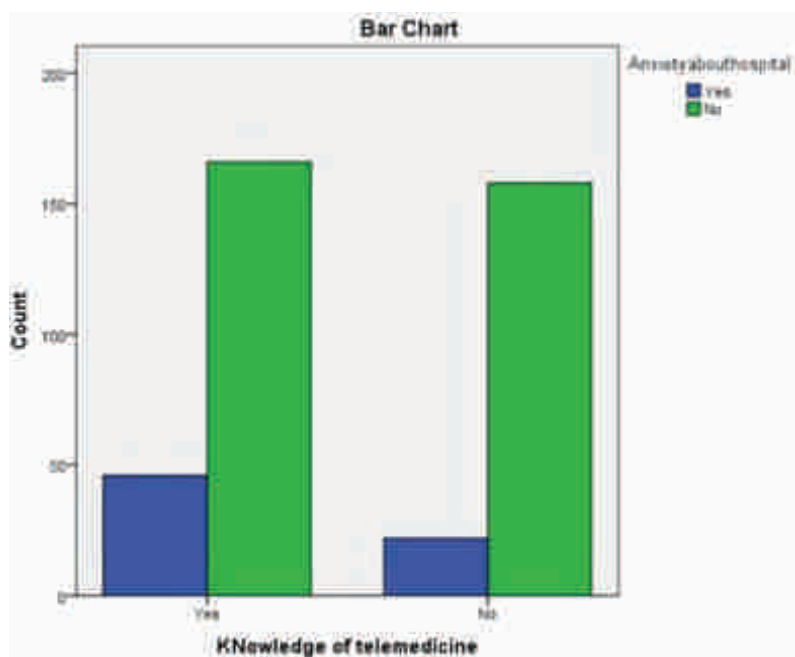
The people who self-medicate were 71.7% and those who did not self-medicate were 28.3%.

Our results show that Trend of health-seeking behavior is significantly greater in participants aged between 20-30 years compared to other age groups (51.5%) ( $p=0.009$ ;  $p < 0.05$ ). It also reveals that Change in the trend of health-seeking behavior is more significant among Upper class (>50,000 PKR) participants compared to Middle (20,000-50,000 PKR) and Lower (<20,000 PKR) class participants ( $p=0.03$ ;  $p < 0.05$ ). Moreover, it also shows that the trend of health-seeking behavior has risen in participants who visited 1-3 times or didn't visit hospitals during the pandemic than those who visited more frequently ( $p=0.01$ ;  $P < 0.05$ ). Self-medication was prevalent amongst all age groups specifically 20\_30 years old. A strong and positive association (0.000;  $P < 0.05$ ) was found between self-medication and the age group of 20\_30 years. Similarly, a positive association (0.000;  $P < 0.05$ ) was found between self-medication and bachelor's students. It was prevalent amongst all educational levels,

especially bachelor's then higher secondary, and then postgraduates. A positive association (0.039;  $P < 0.05$ ) was found between self-medication and people whose family members did not die of Covid-19.

Around 54% of participants were familiar with telemedicine and had benefitted from it in some way during a pandemic. Familiarity with telemedicine was more common in respondents between 20 -30 years of age and the relation was statistically significant ( $p=0.007$ ). Moreover, females were significantly more likely to be familiar with the facility of telemedicine as compared to males ( $p=0.001$ ). A significant association is seen among those participants who feel anxiety about going to the hospital due to fear of getting an infection and it came out that they are more aware of telemedicine ( $p=0.01$ ). Our study also revealed that the participants who had practiced telemedicine during the pandemic were less likely to report the death of an acquaintance as compared to others ( $p=0.01$ ). It might be that people who feared going to hospitals or could not reach out for any reason availed of telemedicine services timely and were managed appropriately which prevented death. During the pandemic, providing healthcare services to everyone in the hospital was very difficult our study also shows that those participants who were deprived of healthcare services during COVID-19 got benefits from telemedicine and there exists a significant positive association with telemedicine ( $p=0.02$ ). (Figure 2).





**Figure 2:** Knowledge about telemedicine among the population and its association with various health seeking behavior

**Table-I:** Relationship between health-seeking behavior and sociodemographic variables

Sociodemographic variable	Health-seeking behavior		p-value
	Yes	No	
	Age		
15-20 years	44	14	
20-30 years	205	85	
30-40 years	22	5	
above 40 years	10	7	
Total	281	111	0.009
	Gender		
Male	145	50	
Female	136	61	
Total	281	111	0.245
	Marital status		
Married	51	17	
Unmarried	222	92	
Divorced	5	0	
Widow/widower	3	2	
Total	281	111	0.419
	Economic status		
Low <20,000 rupees/month	69	28	
Middle 20,000-50,000 rupees/month	101	38	
Upper >50000 rupees/month	111	45	
Total	281	111	p=0.03
	Residence		
Urban	221	95	
Rural	60	16	
Total	281	111	0.117
	Education		
None	3	2	
Primary (till 5 class)	6	1	
Secondary (Matric)	11	5	
Higher Secondary (Above Matric)	75	24	
Bachelor's	146	64	
Post-Graduation	40	15	

Total	281	111	0.001
Active source of information			
Television	87	40	
Internet	168	65	
Newspaper	11	0	
People	15	6	
Total	281	111	0.172

## Discussion

To the best of our knowledge, our study is the first of its kind within the current pool of literature available, that has evaluated the trend in health-seeking behavior during the COVID pandemic, especially in Rawalpindi. Health-seeking practices are not exceptionally good so there is a need for improvement by creating awareness.<sup>18</sup> Our study was conducted to see the prevalence of different health-seeking behaviors among different age groups and people of different literacy levels. This study reveals the prevalence of various diseases and describes people's health-seeking behavior during the COVID-19 pandemic. At the beginning of this pandemic, some governments and non-governmental efforts have been made to increase public awareness of this disease. There was a wave of rumors, hoaxes, and misinformation concerning the causes, effects, prevention, and treatment of disease. The percentage of people visiting the government hospitals has been pretty less than 52.3% during the pandemic. According to a study in Lahore, the percentage of people visiting government hospitals has been reduced to more than half (27.3% to 12.8%).<sup>19</sup> This may be due to numerous factors influencing the health-seeking behavior of people like fear of contracting coronavirus, lack of trust, inadequate facilities at hospitals, etc. A decreased trend of visiting hospitals during the pandemic is also described in a study performed in the USA.<sup>20</sup>

The incidence of self-medication revealed in our results is around 39%. According to a study in Lahore self-medication before the pandemic was 14.1% and 24.6% after the pandemic. The trend of self-medication has risen during the pandemic (10% increase).<sup>21</sup> Our results are consistent with this research. Another study in Punjab showed a trend of self-medication at 53%.<sup>22</sup> A strong and positive association (0.000;  $P < 0.05$ ) was found between self-medication and the age group of 20\_30 years. Similarly, a positive association (0.000;  $P < 0.05$ ) was found between self-medication and bachelor's students. A positive association (0.039;  $P < 0.05$ ) was found between self-medication and people whose family members did not die of Covid 19. Self-medication can be bad in the sense that it can lead to addiction, cause adverse effects, and result in more risks than benefit.<sup>23</sup>

Telemedicine is a service that is rapidly evolving to provide increased access to high-quality healthcare that is efficient and cost-effective, especially amid the current COVID-19 pandemic.<sup>24</sup> During COVID-19, many practices do not allow family members or visitors to accompany the patient to their appointment (or even to the hospital afterward).

The COVID-19 pandemic has been harsh on many levels, but we look forward to seeing how the practice of telemedicine will be able to help in providing better patient care. It seems to offer the one thing that we are all are looking for – a way

to connect patients and their families through virtual platform.<sup>25</sup> In 2018, a study from the American Medical Association (AMA) found that about 15% of physicians were using telemedicine, and in 2019, a survey from telemedicine company AmWell (formerly American Well) found that that had increased to about 22%.<sup>26,27</sup> The use of telemedicine appears to provide an avenue through which we can help improve the communication and relationships that are so vital to the successful care of our patients.<sup>25</sup>

## Conclusion

This study tells us that patients were resistant to visiting hospitals during a pandemic with an increased tendency of people to self-medicated and avoid medical consultation but there is a positive uptake of people towards telemedicine which necessitates that government healthcare providers should ensure that patients feel comfortable while going to hospitals and arrange some campaigns to spread awareness about the adverse effects of using self-medication and improving the area of health care service provision through telemedicine.

## Limitations

This study has two main limitations. The first limitation is that the participants of the study were only the people of the twin cities of Pakistan and secondly, there may be recall bias.

## Conflict of Interest

The authors have no conflict of interest to reveal and have no confounding. There are no conflicting financial interests, misuse of position and representation.

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