Research Article

Behavior Trends Towards Coronavirus (covid-19) and Compliance with Preventive Measures Among Dental Patients in Response to Public Health Awareness Campaign.

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Abstract

Background Coronavirus disease (COVID-19) outbreak in Wuhan, Hubei Province, China, in January 2020, stirred worldwide apprehension and was later professed a Public Health Emergency of International Concern by the World Health Organization. Public understanding including knowledge about sign and symptoms, mode of transmission, and hygiene of COVID-19, is vital for designing effective control strategies during the pandemic

Objectives The objectives of the study is to assess the behavioral trends towards Coronavirus (COVID-19) and compliance with preventive measures among dental patients in response to public health awareness campaign. The current study is aimed to investigate the dental patient's perspective about coronavirus (COVID-19), including their knowledge, attitude and practices.

Abstract

Material and Methods *A cross-sectional, survey-based study was conducted at various hospitals in Rawalpindi/Islamabad (twin cities) Pakistan, during the months of October 2020 to January 2021. After taking an informed consent a validated and pretested questionnaire was distributed among dental patients in various hospitals. Responses were indicated on questionnaire.*

Results *A total of 200 dental patients participated in this study. Most of the respondents had good knowledge (good = 86.8%, average = 10.2%, poor = 3%) of COVID-19. A vast majority of the survey respondents (73.5%) believed that COVID-19 would be controlled successfully in Pakistan. The practices of wearing a mask (75%) and hand washing (89.5%) were common among the participants. The response rate was 100%*

Conclusion *The dental patients demonstrated good knowledge and reasonable attitude and practices towards most aspects of the COVID-19 outbreak. Improvements in certain areas could be made by mass-level education.*

Key Words*: COVID-19; coronavirus; knowledge; infection; dental patients; Pakistan*

Introduction

The coronavirus disease 2019 (COVID-19) outbreak in Wuhan, Hubei Province, China, in January 2020, stirred worldwide apprehension and was later professed a Public Health Emergency of International Concern by the World Health Organization. (WHO).(1) (2) At the end of 2019, China experienced an outburst of COVID-19 which killed more than thousand people and infected more than 70,000 people within the first five days of pandemic.(3) The pandemic has challenged the health care systems around the world and has aroused different reactions as well as varied responses across the globe. It mainly targets the respiratory system of the body.(4) Deaths have been reported in fifteen countries, including the United States, Spain, Italy, Germany, China, Iran, the UK, Belgium, the Netherlands, Canada, Sweden, Turkey, France, Brazil, and Switzerland all attributed to COVID-19.(5) Due to wide spread of COVID-19 across the globe, a global pandemic was declared by the World Health Organization (WHO) on 12 March 2020.(5) (6) While, the number of cases and chaos still rising in different regions around the globe, knowledge, awareness of COVID-19 and compliance with preventive measures still differs across cultural regions.(7) It is the beta-coronavirus that can spread to humans through bats however, the actual mode of transmission is still debatable.(8) The frequency of disastrous effects of this virus is

faced by both developing and developed countries, however the scenario could be more dreadful in countries with fragile healthcare system.**(**9**)**

Islamic republic of Pakistan located in Southern Asia with the coastline on the Arabian Sea. The country occupies an area of 796,095 km square.**(**10**)** Punjab province was also the victim of COVID-19 as it topped the ranks in terms of the number of COVID-19 cases.**(**11**)**Government has opted for several strategies which includes partial lockdown in countries, travelling restriction, social distancing, and most importantly personal protective measures. Other policies were school closure, bans on public gathering and self-isolation, despite all the measures the numbers were continuously rising.**(**12**)** The proficiency of government-run information campaigns significantly depends on what people perceive and know about COVID-19. Therefore, educating the public about personal protection and hygiene is of great significance, and possible treatment options. This will further help in tailoring effective control measures. There is a massive spread of misinformation and misunderstanding about COVID-19 pandemic, making difficult for the public to know the exact reality and which one should they trust and implement. World Health Organization team has launched a new information platform called WHO Information Network for Epidemics **(**EPI-WIN**)**.

"We are not only fighting with epidemic but also fighting with infodemic".**(**13**)**

The behavior of general population largely depends on what they perceive and know about COVID-19. Therefore, it will be of great importance and need to educate the victims of COVID-19 about hygiene principles, spread of the diseases, and multiple options to treat it. Under these conditions, where health is threatened by the pandemic and since people's behavior and attitude plays most vital role in limiting or spreading the disease in the community, evaluating the practices and attitude of the general public towards the COVID-19 is decisive. Therefore, the aim of this study was to evaluate the behavior of the dental patients towards coronavirus and compliance with preventive measures in response to pandemic. **(**14**)**

Materials and Methods

Study Design

Non-experimental, cross-sectional survey based study was conducted from October 2020 to January 2021 when the COVID-19 cases begin to rise again during second wave. The data was collected from various dental teaching hospitals in twin cities **(**Rawalpindi/Islamabad**)** Pakistan. After taking an informed consent a validated and pretested questionnaire was distributed among dental patients in various hospitals. Responses were indicated on questionnaire.

Survey Instrument

A thorough literature survey of the relevant articles and guidelines was conducted to design the survey instrument.**(**15**) (**16**)**. Small changes were made in the wordings in order to enhance the understanding of the items by the participants.

The approved version of the instrument had 23 items and comprised of three parts. The first part contained questions related to the demographic information of the participants, such as gender, age, occupation. To investigate the knowledge of the participants, 15 questions were asked in the last part with three options: "yes", "no", and "don't know". The questions were based on signs and symptoms, mode of transmission, and strategies to prevent the transmission of COVID-19, attitude towards COVID-19, practices of participants towards COVID-19, such as their recent visit to the crowded area, regular hand washing, and the wearing of face masks. The reliability of the instrument was checked by determining the value of Chronbach's α, which was more than 7, indicating an acceptable level of internal consistency. **(**17**)**

The knowledge score of the participants was calculated by assigning one point to each correct item. The range of overall knowledge was 0 to 15.

Data Collection

The convenience and snowball sampling method was used to for data collection. The participants were dental patients. The participants were able to answer all the questions. The objectives of the study were mentioned on the questionnaire form. Moreover, information about confidentiality, the right to withdraw, consent and voluntary participation were also provided. Only participants more than 17 years old and living in Pakistan were included in this study.

Data Analysis

Descriptive statistics were used to assess the sample characteristics. **(**i.e., Frequency and percentages**)**. The data was analyzed through SPSS Inc., version 23, IBM. All the figures and tables were made through Microsoft Office 365. $P < 0.05$ was considered statistically significant.

Ethical Approval

Ethical approval was taken from Shifa Tameer-e-Millat University.

Results

A total of 200 participants completely filled the questionnaire. Among them, 102 **(**51%**)** were female, 98 **(**49%**)** were male. Most of the participants, i.e., 70 **(**35%**)** of them were between the age of 25 to 34 years old. Demographic details are represented in Table 1.

The information sources of the participants related to COVID-19 are shown in Figure 1. Information sources were news, media, social media, official government websites, family members, colleagues or friends. The result illustrated that the mostly the participants get the information from family members, relatives or their friends and official government websites hence public health awareness campaigns plays a significant role in controlling the spread of COVID-19.

CHARACTERISTICS	FREQUENCY (%)
GENDER	
Male	98 **(**49.0**)**
Female	102 **(**51.0**)**
AGE GROUPS REPRESENTATION	
18-24 years	50 **(**25.0**)**
25-34 years	70 **(**35.0**)**
35-44 years	54 **(**27.0**)**
45-54 years	24 **(**12.0**)**
55-64 years	2 **(**1.0**)**
> 65 years	0 **(**0.0**)**
HEALTHCARE PROVIDER	
Yes	45 **(**22.5**)**
No	155 **(**77.5**)**

TABLE 1*: DEMOGRAPHIC CHARACTERISTICS*

FIGURE 1: COVID-19 Information Source
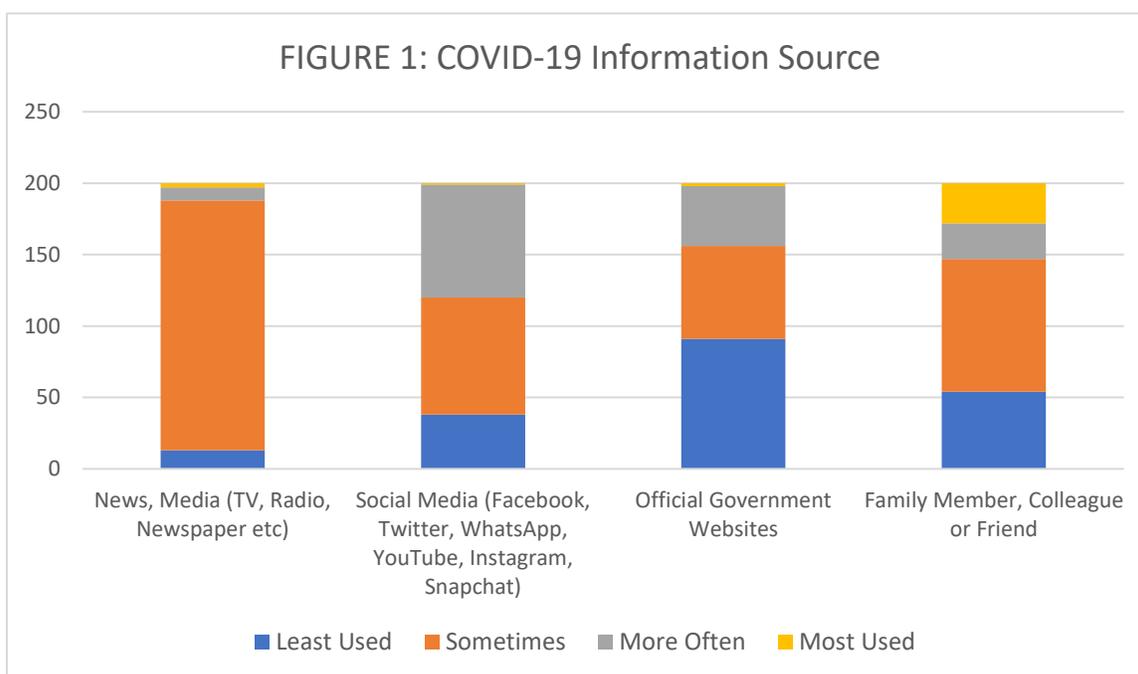
Knowledge of the Participants and their Attitude

More of the participants had good COVID-19 related knowledge as depicted in Figure 3. A large number of participants were able to recognize and identify the symptoms of COVID-19, very few of them were

not aware of the signs and symptoms of disease. They knew the phenomena of spread of virus through respiratory droplets of infected individuals. However, they perceive that there was no cure for Covid-19 at present. The dental patients also believe that they could recover by early detection coupled with the supportive therapy. 140 out of 200 dental patients (70%) believed that mask should be used during outdoor visit or interaction with the people for prevention of COVID-19. Majority of the dental patients (84%) were of the view that patients infected with COVID-19 should be kept in isolation in order to avoid the spread of disease. On the contrary, more than half of the participants (76%) said that preventive measures are not necessary for the children and young adults against COVID-19 virus.

Practices of Participants

Majority of the dental patients (66.5%) had reduced or not visited any crowded area and wore a mask when they moved out of their homes. Moreover, (73.5%) of the survey participants washed their hands regularly for ten to twenty seconds. (72.5%) of the dental patients carry a hand sanitizer all the time. Most of the participants prefer to utilize health care facilities only in case of emergency.

	Awareness of Dental Patients	**YES (%)**	**NO (%)**	**DON'T KNOW (%)**
Q5.	The main clinical symptoms of novel coronavirus (SARS-CoV-2) are fever, fatigue & dry cough.	91.5	3.0	5.5
Q6.	The coronavirus (SARS-CoV-2) spreads via respiratory droplets of infected individuals.	85.5	6.0	8.5
Q7.	Person with COVID-19 can't transfer the virus to others when symptoms are not present.	86.5	6.5	7.0
Q8.	People who have contact with someone infected with COVID-19 should be immediately isolated for minimum period of 14 days.	84.0	8.5	7.5
Q9.	I agree COVID-19 will finally be successfully controlled.	73.5	15.5	11.0
Q10.	I feel news spreading through media regarding COVID-19 is causing panic.	56.0	22.0	22.0
Q11.	I feel the situation is not as bad as it is being portrayed on media.	63.5	19.5	17.0
Q12.	Persons who are elderly or have chronic illness are more likely to develop severe symptoms.	75.0	13.5	11.5
Q13.	Preventive measures are not necessary for the children & young adults against COVID-19 virus.	76.0	13.5	10.5
Q14.	I have avoided/reduced going to crowded places & prayer places.	66.5	20	13.5
Q15.	I wash my hands more frequently.	73.5	14	12.5
Q16.	I carry a hand sanitizer all the time.	72.5	15.5	12
Q17.	When interacting with people or visiting any area, I use a mask.	70	17	13
Q18.	I have avoided/reduced using public transportation.	71.0	12.0	17.0
Q19.	I prefer to use healthcare facilities only for the emergency cases.	75.5	14.5	10.0

FIGURE 3: AWARENESS ABOUT COVID-19
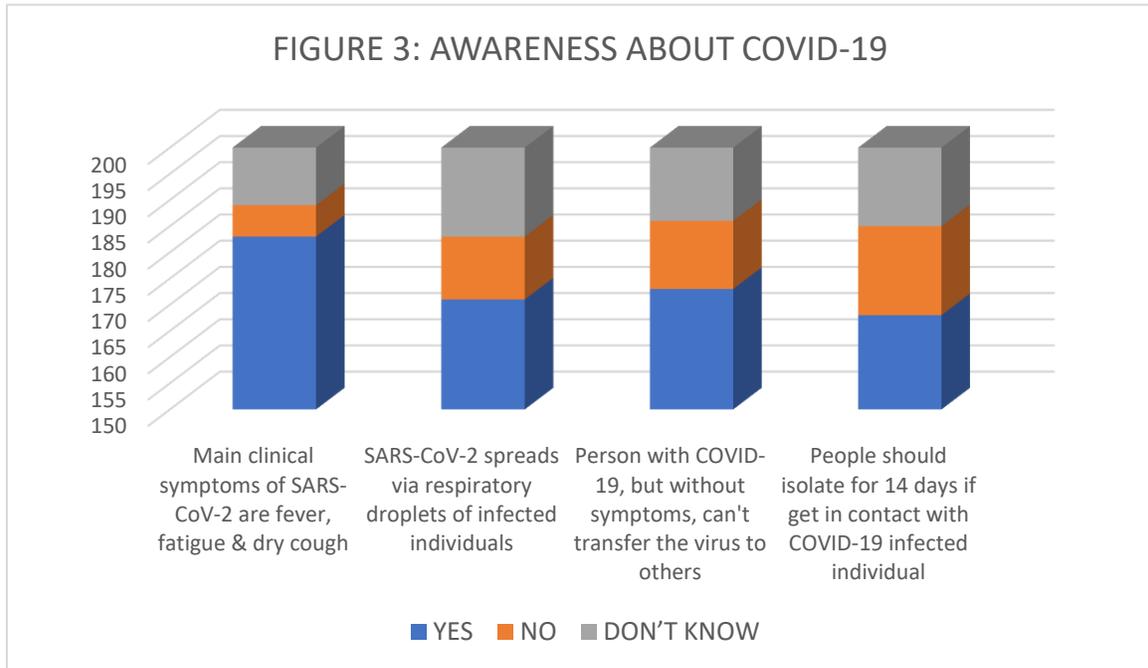
Attitude of Participants

A large number of participants held an optimistic attitude towards COVID-19 outbreaks. In essence (73%) thought that COVID-19 would be successfully controlled, whereas a few participants responded that they 'disagree' (16%) or were not aware (11%) towards this question as depicted in Figure 2. Their optimistic attitude plays a substantial role in enhancement of their essence and immunity and they will better be able to fight against the pandemic.

FIGURE 2: COVID-19 WILL FINALLY BE SUCCESSFULLY CONTROLLED
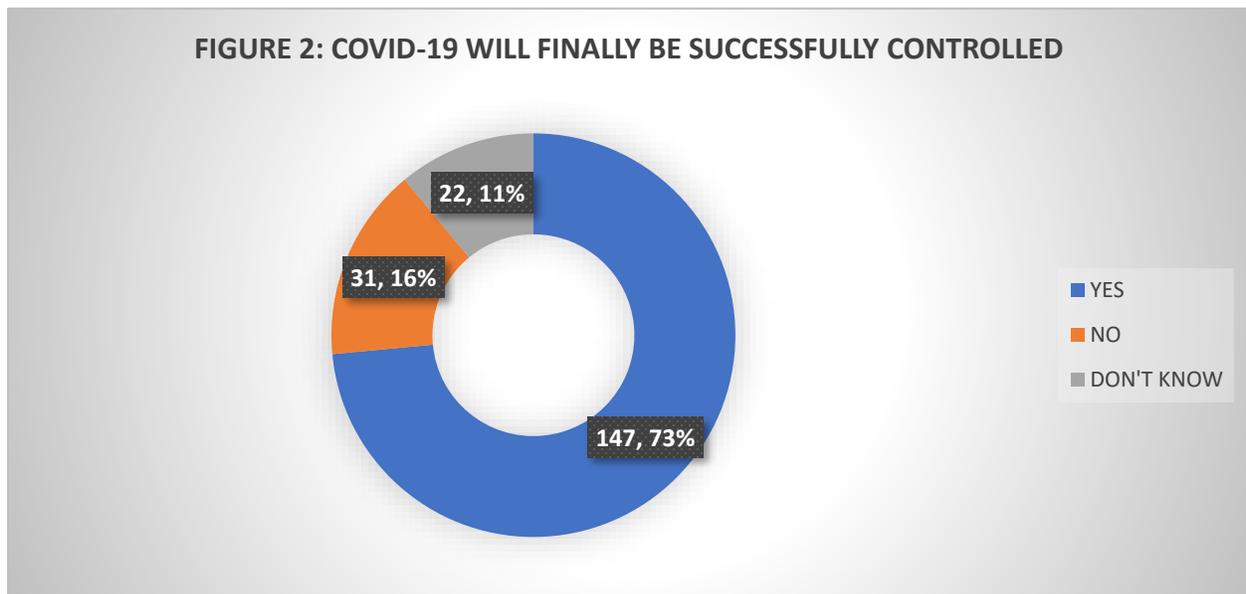
Discussion

The world is going through a dilemma and perceiving severe life-threatening effects due to pandemic. The current study, is the first to report the perspective and behavioral trends of dental patients toward COVID-19 and compliance with preventive measures among dental patients in response to public health awareness campaign. This study has shown that the COVID-19-related knowledge of most of the study participants was good. They are well aware of the sign and symptoms of novel coronavirus (SARS-CoV-19). Their knowledge regarding transmission of virus to others was good. Moreover, their attitudes and practices towards COVID-19 were optimal. Majority of them are hopeful and they believe that this disease will be successfully controlled. The high rate of correct responses of the study participants was surprising, as this study was undertaken during the second wave of the COVID-19 outbreak. Additionally, due to a rapidly changing situation and overwhelming news related to COVID-19 in Pakistan. Moreover, awareness campaigns using print and electronic mediums have also been launched by the government to help improve the understanding of the general public including dental patients about COVID-19. (18)

On the contrary, some of them believe that preventive measures are not necessary for the children and young adults against COVID-19 virus. Most of them have reduced going to the crowded places and prayer places. They avoid/reduced using public transportation. The practices of hand washing and using a sanitizer are good. They prefer to use health care facilities only for the emergency cases.

Different information sources they used were news, media, newspaper, social media, official government websites, family members, colleague or their relatives. Majority of the participants got the information from family members, friends and official government websites hence public health awareness campaigns plays vital role in refining the knowledge and awareness of the general population in Pakistan.

Literature review of the studies conducted during COVID-19 phase shows trends similar to those observed in our study.

The Novel Coronavirus disease 2019 (COVID-19) has led to hundreds and thousands of deaths, resulting in chaos and catastrophe for humans. Cross-sectional Survey based study conducted in Karachi, Pakistan. The result shows the development of fears and anxiety in the target population. They were concerned for the health of their family members. Some solution needs to be devised along with the awareness campaign in order to lessen the anxiety levels of the population.(19)

Another Cross-sectional survey based study conducted in Pakistan concluded that majority of the participants have heard about the Coronavirus diseases and had adequate knowledge about the pandemic. They are well aware about the transmission of virus, causative agents and signs and symptoms of COVID-19.(20)

Similar study conducted in Kingdom of Saudi Arabia also reported the same results.(21)

One of the studies conducted among patients in health care center (Riyadh), Saudi Arabia showed that preventive practices and knowledge regarding Coronavirus was statistically significant. The patients

were well aware about awful disease and its consequences if personal protective measures are not implemented. The main source of awareness among general population was TV, social media, Internet, neighbors, newspaper.**(**22, 23**)**

The novel coronavirus pandemic has toppled the world and is a concern for governments globally, cases still surging in different regions of the world. In-depth interview based study conducted in Nigeria, Anambra State. Findings showed that most of the participants consider Covid-19 deception than a fact, this inadequate awareness affected their compliance with preventive measures to avoid the spread of the disease. These findings suggest the need of awareness campaigns about the pandemic.**(**24**)** Another study showed that most of the participants wore masks during the pandemic era to prevent the spread of COVID-19. This resulted due to government initiatives about the spread and transmission of virus, they ban on gatherings and because of the participants "good knowledge". Despite preventive measures, hardly one or two participants visited crowded places and the ratio of this risky behavior was among young male patients.**(**25**)**

Randomized controlled trial conducted in Bangkok in order to assess non-pharmaceutical interventions to control the spread of virus showed that hand washing with soap regularly effectively removes the virus.**(**26**)** Similarly, personal protective measures were advised by the government globally during the peak time of Covid-19 to avoid the transmission of virus to others like wearing of masks, frequent hand washing, and the use of sanitizers.**(**27**)**

Similar study conducted at Jordan aimed to assess knowledge and behavior of medical/dental health care students towards COVID-19 pandemic outbreak. The knowledge score of most of the participants was found to be satisfactory. The social media, television and internet were the main routes through which participants heard about COVID-19. Education/awareness programme and mentoring is essential for those who showed poor knowledge about the disease.**(**28**)**

However the limitations of the study that should be taken into account are the sample size is not adequate to depict the point of view of all the dental patients of Pakistan and therefore its generalizability is limited. Secondly, the focus of the study was only dental patients not the medical patients. Therefore, there is a need to conduct a study for medical patients and paramedical staff who have increase susceptibility to COVID-19. Despite all the above limitations, this study is the first to highlight the knowledge and behavior of the dental patients of Pakistan towards COVID-19

Conclusion

Study showed that the knowledge and awareness of dental patients in Pakistan was good in several aspects. Moreover, their attitudes and practices toward the COVID-19 outbreak were reasonable, as most of them were involved in the regular practices of avoiding crowded areas and hand washing. Likewise, a large number of participants believed that Pakistan would be able to eradicate COVID-19 successfully. The government should take the initiative and implement educational sessions for less

knowledgeable people to enhance their acquaintance, which will subsequently improve their attitudes and practices towards COVID-19. More studies with nationwide sampling are justified to validate the current findings. Occupational health is of paramount importance to minimize the risk of getting infected and transmit the deadly virus to others.

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