

Assessment of Knowledge among Dental Patients regarding the Second wave of Coronavirus Disease

Kanwal Zulfiqar¹, Syed Hamza Zia², Ghina Rizwan³, Zarnab Rizwan⁴, Naeema Iqbal⁵,
Mobina Fatima Zulfiqar⁶

¹ Associate Professor, Department of Orthodontics,
Riphah International University, Islamabad.

^{2,3,4} House Officer, Department of Orthodontics,
Riphah International University, Islamabad.

⁵ Assistant Professor, Department of Orthodontics,
Riphah International University, Islamabad.

⁶ Resident, Department of Orthodontics,
Riphah International University, Islamabad.

Author's Contribution

^{2,3,4,5,6} Conception of study

^{1,2,3,4} Experimentation/Study conduction

^{1,2,3,4} Analysis/Interpretation/Discussion

^{2,3,4,6} Manuscript Writing

^{1,5,6} Critical Review

⁵ Facilitation and Material analysis

Corresponding Author

Dr. Ghina Rizwan,

House Officer,

Department of Orthodontics,

Riphah International University,

Islamabad

Email: ghinarizwan@outlook.com

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Abstract

Objective The objective of this study was to assess the dental patients' knowledge regarding the second wave of COVID-19.

Materials and Methods: A self-designed questionnaire was sent as a google forms link via WhatsApp and a few patients, who had no access to WhatsApp, were asked to fill out a hand-printed form. The completed questionnaires were then analyzed using the statistical package for social sciences (IBM version 23).

Results: A total of 350 participants were included in the study, out of which 38% were male and 62% were female. The result was calculated using binary logistic regression analysis for different variables to predict the confidence level based on their knowledge, attitude, and practice regarding the second wave of COVID-19.

Conclusion: Our study concluded that there is a more than satisfactory level of knowledge regarding COVID-19 and People are aware of the basic protocols which help in protection against the virus owing to easy access to information.

Keywords: COVID-19, information, knowledge, second wave.

Introduction

The extremely infectious virus the coronavirus disease (COVID-19) has become a worldwide general health crisis since it has been transmitted outside China.¹ First case of COVID-19 was confirmed on 27th February 2020 in Pakistan by public authorities and the origin of the infection-causing virus was traced back to Iran.² As a result of this pandemic, every nation had embraced various methods of controlling this virus, for example, complete lockdowns, strict movement control on their residents, and smart lockdowns in selective districts based on hotspot analysis.³ As coronavirus is an airborne disease The US Centers for Disease Control and Prevention (CDC) has indexed dental care-related aerosols or droplets as high risk on the premise of presumed equivalence of those aerosols to those that might arise for the duration of medical tactics.⁴ As a result of the Covid-19 pandemic many states ordered healthcare facilities, physicians, and other healthcare providers to defer their elective procedures.⁵ Several actions were also taken by the Government of Pakistan, in order to limit the transmission of COVID-19.⁶ Those actions included the closure of educational institutions, public areas, business organizations, and tourist spots. A particular arrangement measure embraced by the government is smart lockdown which has been valued by the WHO authorities.⁷ With the passage of time ease in lockdown was seen in many countries. The ease in lockdown restrictions across the country allowed the rise in cases. In Europe starting from the end of July 2020 second wave of COVID-19 infection was seen in different areas with different severity.⁸ This trend was linked with the lifting of restrictions in summer that were placed all over Europe. For instance, the free movement and tourism were revived, with the Europe commission proposal.⁸ A similar rise in the curve of active and new COVID-19 cases was also observed all over Pakistan when 'Smart Lockdowns' were hailed and all day-to-day activities were re-opened. This paved a way for the spread of the virus through social, political, religious, and business activities, the Government announced a second spell in October 2020 when the national positivity ratio climbed to 3% and ultimately to 6.07% in the following months.

This ease in lockdown restrictions posed a threat to the spread of the virus again, particularly among dental patients seeking treatments. Dental hospitals and clinics are high-risk environments for disease transmission. When there is an exposure to high concentrations of aerosols in a relatively closed

climate, aerosol transmission owing to routine dental methods is a potential source of transmission with possible threats to the dental expert, dental care workers, and patients.^{2,9} Following the first wave, there was increased understanding and people were familiar with basic protocols prescribed against the virus and its spread in various places. Assessing the knowledge and levels of anxiety in such patients is vital since in dental sittings patients are at an increased risk of contracting coronavirus. Appropriate knowledge, attitude, and precautionary practices are compulsory to stop COVID-19 infections from spreading in nations.¹⁰

The objective of this study was to assess the knowledge of dental patients regarding the second wave of COVID-19.

Materials and Methods

This cross-sectional study is a survey of Knowledge and Attitude Regarding the Second Wave of COVID-19 among Dental Patients at Islamic International Dental Hospital. A self-designed questionnaire was used after ethical Approval from the hospital Research Committee **IRC**, moreover, informed consent was taken from the participants, and those that consented to be part of the study filled out the questionnaires. The sample size was calculated by the WHO sample size calculator by considering the total number of patients (N=15000) reporting the OPD during 3 months at IIDH. A sample of 375 was calculated based on the proportion of 50% at an abounding error of 5% and a confidence interval of 95%. The questionnaire was distributed in two ways, the patients having access to mobile phones, the internet, and WhatsApp was sent a link to Google form after their consent and the patients who did not have internet access were requested to fill the printed form. Inclusion Criteria were participants who were 1) Aged 18 Years or Older at the time of the survey, 2) Ability to complete and understand the questionnaire 3) Had to access to the internet, mobile phones, and WhatsApp. Mentally handicapped individuals were excluded from the study.

The questionnaire comprised 34 statements divided into 3 sections, the first section included demographics, the second section had 21 statements regarding knowledge and attitude towards the second wave of COVID-19, and the third section had 9 statements about anxiety related to dental procedures during the second wave. 3 point Likert scale was used for several statements which had the options "yes"

“no” and “maybe”. And several questions had the option of selecting multiple statements. Responses from hand-filled forms were collected and transferred on Google Forms; all the statistical tests were applied using Statistical Package for Social Sciences SPSS® software for Windows® ver.23. Simple descriptive analysis was used to calculate the percentages of demographics (age, gender, level of education) and for the regression analysis, Age and Gender were taken as independent variables.

Results

A total of 350 participants were included in the study, out of which 133 (38%) were male and 217 (62%) were female. 71.4% of the participants belonged to the age group of 20 to 30 years. The classification based on age, gender, education, and occupation is shown in Table 1.

There is a non-significant difference among gender and age groups using binary logistic regression analysis for different variables to predict the confidence level based on their knowledge, attitude, and practice regarding the second wave of COVID-19 shown in Tables 2 and 3. Regression analysis with age showed highly significant values for the statements ‘Are you worried that second wave is affecting your job?’ (p=0.005), “Do dentists have a role in the spread of COVID?” (p=0.041), and “Will vaccine be able to control the spread?” (p=0.002), rest of the statements showed insignificant values (p>0.05). Regression analysis with gender showed that all of the statements showed highly insignificant values (p>0.05) except “Will Virus will become mild and lose its potency?” (p=0.046).

However, a significant difference was seen among age groups based on the attitude of the participants regarding the stress level of the economic situation in the first wave as compared to the second wave (p = 0.014).

Assessing the knowledge of patients, 23.4% were not sure about identifying the dental procedure that contributes the most to aerosol spread. A majority 41.0% blamed the non-serious attitude of the public for the rise in cases during the second wave. A good number of patients (32.5%) were able to correctly identify the necessary precautions needed against COVID-19.

Table 1: Showing Demographic Information of the Participants

| Gender Distribution (N=350) | |
|-----------------------------|-----------------|
| | Frequency n (%) |
| Female | 217 (62.0) |
| Male | 133 (38.0) |
| Total | 350 (100.0) |
| Age Groups (N=350) | |
| | Frequency n (%) |
| 20-30 years | 250 (71.4) |
| 31-40 years | 42(12.0) |
| 41-50 years | 27(7.7) |
| 51-60 years | 26(7.4) |
| 61 and above years | 5(1.4) |
| Total | 350(100.0) |
| Level of Education (N=350) | |
| | Frequency n (%) |
| Bachelors | 186(53.1) |
| Intermediate (FSc/FA/Other) | 53(15.1) |
| Masters | 70 (20.0) |
| Matric | 21(6.0) |
| Ph.D./MPhil. or Equivalent | 20(5.7) |

Table 2: Regression (R 0.484) analysis of Ages with different variables in assessing the knowledge and attitude of the respondents towards the second wave of COVID-19

| Questions | B | Std. Error | Beta | Sig. |
|---|--------------|-------------|--------------|-------------|
| Are you worried that the second wave is affecting your job? | -.202 | .072 | -.148 | .005 |
| Current status regarding COVID | -.172 | .101 | -.091 | .088 |
| Do dentists have a role in the spread of COVID? | -.127 | .062 | -.111 | .041 |
| Do you know what protective measures can be taken? | .029 | .100 | .016 | .775 |
| Do you think an effective vaccine will be available soon enough? | -.021 | .064 | -.019 | .743 |
| Do you think the second wave will be worse than the first? | .066 | .065 | .056 | .312 |
| During the last week did you undertake any precautions? | .002 | .008 | .011 | .826 |
| Has COVID affected your mental health? | .014 | .069 | .012 | .843 |
| Source of Information regarding second wave. | .003 | .014 | .013 | .804 |
| Will you consider leaving work and taking time off to avoid exposure? | -.112 | .067 | -.090 | .097 |
| Do you think there will be a second lockdown? | .082 | .066 | .068 | .219 |
| Do you think there will be a shortage of food supplies? | -.034 | .069 | -.027 | .626 |
| Do you think there will be a shortage of masks and sanitizers? | .039 | .077 | .028 | .608 |

| | | | | |
|--|--------------|-------------|--------------|-------------|
| Will Virus will become mild and loose its potency? | .117 | .063 | .100 | .064 |
| Will the vaccine be able to control the spread? | -.186 | .060 | -.177 | .002 |
| Will you go for your ongoing dental appointments? | -.028 | .068 | -.022 | .682 |

Table 3: Regression analysis (R= 0.485) of Genders with different variables in assessing the knowledge and attitude of the respondents towards the second wave of COVID-19

| Questions | B | Std. Error | Beta | Sig. |
|---|-------|------------|-------|------|
| Are you worried that the second wave is affecting your job? | -.059 | .034 | -.090 | .089 |
| Current status regarding COVID | -.087 | .048 | -.096 | .073 |
| Do dentist have a role in spread of COVID? | .023 | .030 | .041 | .448 |
| Do you know what protective measures can be taken? | -.088 | .048 | -.100 | .068 |
| Do you think an effective vaccine will be available soon enough? | -.014 | .031 | -.027 | .639 |
| Do you think the second wave will be worse than the first? | -.011 | .031 | -.020 | .721 |
| During the last week did you undertake any precautions? | .000 | .004 | -.006 | .904 |
| Has COVID effected your mental health? | .126 | .033 | .233 | .000 |
| Source of Information regarding the second wave. | -.010 | .007 | -.084 | .122 |
| Will you consider leaving work and taking time off to avoid exposure? | -.042 | .032 | -.070 | .199 |
| Do you think there will be a second lockdown? | -.009 | .032 | -.015 | .779 |
| Do you think there will be a shortage of food supplies? | .023 | .033 | .039 | .490 |
| Do you think there will be a shortage of masks and sanitizers? | -.028 | .037 | -.042 | .447 |
| Will Virus will become mild and loose its potency? | .061 | .030 | .108 | .046 |
| Will the vaccine be able to control the spread? | -.004 | .029 | -.009 | .879 |
| Will you go for your ongoing dental appointments? | -.061 | .033 | -.100 | .063 |
| Are you worried that the second wave is affecting your job? | -.059 | .034 | -.090 | .089 |
| Current status regarding COVID | -.087 | .048 | -.096 | .073 |
| Do dentist have a role in spread of COVID? | .023 | .030 | .041 | .448 |
| Do you know what protective measures can be taken? | -.088 | .048 | -.100 | .068 |
| Do you think an effective vaccine will be available soon enough? | -.014 | .031 | -.027 | .639 |
| Do you think the second wave will be worse than the first? | -.011 | .031 | -.020 | .721 |
| During the last week did you undertake any precautions? | .000 | .004 | -.006 | .904 |
| Has COVID affected your mental health? | .126 | .033 | .233 | .000 |
| Source of Information regarding the second wave. | -.010 | .007 | -.084 | .122 |
| Will you consider leaving work and taking time off to avoid exposure? | -.042 | .032 | -.070 | .199 |
| Do you think there will be a second lockdown? | -.009 | .032 | -.015 | .779 |

Discussion

Presently, Corona infection is a hot topic of conversation among people in general and media as well, which brought about increasing public consideration towards their awareness and preventive measures against Coronavirus. 33.7% of the participants stated that they were diagnosed with COVID-19 through PCR testing. As it is the most commonly used tool for testing and messenger RNA detection and quantification technique.¹¹ 41.1% of dental patients were of the view that the main reason for the rise in the second wave of COVID-19 is the non-serious attitude of the people and violation of SOPs. The negligence on part of the public regarding the essential precautions has been deemed detrimental to the process of containment of the virus.¹² Similarly Mun-KeatLooi reported that public loosening of

precautionary measures and ease in lockdown was the major factors of the second wave of COVID-19 in Europe.¹³ A similar finding was reported in India where relaxation in precautionary protocols by the Government led to non-seriousness by the public possibly leading to another wave of the virus.¹⁴ Our study result stated that the economic stress level was more in the first wave of coronavirus as compared to the first one. This could be explained by the uncertainty and sense of panic seen in the public due to the sudden closure of trade and businesses worldwide seen in the first wave. People were more worried about their jobs during the first wave as compared to the second wave. Many businesses started operating under prescribed protocols and the use of technology by shifting to online trade and commerce. However, a study conducted in Canada reported that there was a decrease in fear of job

security, but their study could not find the reason behind this change.¹⁵

When comparing the genders against the variables, it was believed that the virus will soon become mild and lose its potency (Table 3). However, this was negated by the WHO after a series of debates on this topic where people speculated the virus might lose potency.¹⁶

Similarly, the younger age group was more worried about losing their job as a result of the second wave of coronavirus ($p = .005$) (Table 2). A trend was seen in many other studies across the world.¹⁷ Dentists were also considered to be one of the major factors in the spread of COVID-19 as per the results in this age group. Furthermore, evidently in this age group, it was significantly believed that the vaccine will be able to curb the spread of the virus and put an end to this pandemic. ($p = 0.002$). This was backed by an American study that concluded this fact.¹⁸

43.7% of the respondents said that COVID-19 had affected their mental health and 40.3% of people are very worried about the second wave of COVID-19. 61.7% population who is young said that they are worried that they might lose their job because of the disruption of education due to the closing of institutions. During the first wave of COVID-19, research was carried out about mental health and the study concluded that approximately 10% of respondents suffered from suicidal thoughts happening because the lockdown started, and over 25% stated significant mental fitness deterioration.¹⁹ Levels of anxiety and suicidal thoughts were increased up to 40% in the second wave.²⁰ Earlier reports additionally indicated that younger adults were under extra intellectual stress during the pandemic. Research carried out on a representative pattern of university college students in China²¹ proved that their level of anxiety was higher compared to the general populace. Other researches²² additionally came to this end which is interesting due to the fact younger humans do not belong to the group at risk of death from COVID-19. It is suspected that their mental health consequences are from their fear for the future and their profession, or are related to their inexperience in coping with tough or unpredictable conditions.

According to our study, 43.1% of dental patients are worried that there might be a shortage of food supplies during the second wave of coronavirus. As Larue stated in the article that due to COVID-19 travel restrictions frequently led to shortages of agricultural labor, affected the stage of trade activity and restricted availability of, and get access to, inputs, inclusive

seeds, fertilizers, and insecticides; lower capability within the food processing industry; and demanding situations inside the distribution of food products.²³ 46.9% of the respondents are not sure whether there would be a shortage of masks and sanitizers. Since the start of COVID-19, the prices of masks and sanitizers have increased. To fulfil the growing international demand WHO estimates that the industry must increase the manufacturing demand by 40%.²⁴ The results of our study showed that 60% of the participants got information regarding the corona virus through television. A study done in Karachi reported that the main source of their knowledge is the internet (53%) and television (31%).²⁵ For this reason observation of higher authorities is needed to improve these mediums to be used for health promotion. (26) However according to the study conducted in China 87.6% of the students used social media mostly to get information regarding COVID-19. Traditional media such as magazines and newspapers were not used often to get updates.²⁷

89.4% of the participants already knew about the protected measures that could prevent the 2nd wave of COVID-19. They stated that using masks (surgical, KN-95, N95), frequent hand washing, practicing social distancing, avoiding crowding areas, and staying at home are effective measures to prevent the second wave. Similar results were found in the study done in Karachi in which 78.2% of the participants thought that these were the preventing measures.²⁸ In our study 98.3% of people knew about the signs and symptoms of COVID-19 which is similar to the study in which 93.9% of the participants had knowledge about COVID-19 symptoms.²⁵ Our study results showed that 50.6% of the participants wanted to work from home. However, a study conducted in Netherland concluded that 72% of people had expressed the desire to work from home.²⁹ Because of better work-life balance, increased productivity, better focus, less stress, and avoiding a commute.³⁰

According to our study, 47.4% of people stated that anybody can be affected by COVID-19. But there is literature in which it is written that older people are most likely to get ill from the coronavirus. Overage 65 more than 80% of people died because of COVID-19 as they were having many chronic diseases due to their age.³¹ 48% of people in our study said that the COVID-19 vaccine will be effective and it would control the spread of coronavirus. However, in a placebo control trial, 90 to 100% efficacy of the vaccine was seen.³² 37.7% of participants thought that the second lockdown would be enforced by the government the

same as before. According to the study during the first wave of coronavirus 89%, of people showed a positive response to the government actions to control the spread of COVID-19, and 88% of people find government strategies effective for this pandemic.²⁵

43.4% of our study participants were not sure whether dentists have a role in spreading coronavirus. According to the literature dental treatment can pose a high risk of viral transmission because the tools which can be used regularly produce aerosols, which could include high numbers of SARS-CoV-2 virions, copies of the virus inflicting COVID-19.³³ 37% of people reported that they would go to the hospital for their regular dental appointments. This suggests, in a certain way, that patients in the middle of a path of therapy display more care and interest concerning their treatment and probably would no longer miss an appointment to keep away from impairing the final results of their treatment.³⁴ Our study results showed that 48.6% of people would not like to have an online consultation with a dentist. They preferred to go to the hospital during the second wave. This might be because online consultations have a linear format and tend to focus on a narrow range and it has less chance for patients to raise their problems as compared to face-to-face consultations.³⁵ Moreover, this recorded trend also suggests that most Dental Treatments require an in-person appointment to achieve the desired level of satisfaction and positive results as opposed to an online consultation. 23.4% of people had no idea and 15.1% said that scaling and polishing are responsible for aerosol generation leading to the possible spread and exposure of COVID-19. As the literature suggests that dental handpieces, air-water syringes, and ultrasonic scalers are capable of producing aerosols.³⁶

In our study, no statistically significant difference among gender and age groups using binary logistic relation, however, these results are contraindicated with the results of the Syrian residents study³⁷ and prior study of the SARS pandemic³⁸ where women were more likely to engage in non-pharmaceutical health behaviors (e.g. hand washing). Furthermore, this research is contraindicated with prior findings that elder people were more likely to participate in risk-taking behavior.³⁹

Conclusion

Within the limitations of this study, it should be considered that this study is representative of only one Dental Hospital in Islamabad. The sample size should

be increased covering more dental hospitals and clinics both in the Private and Government sector. Secondly, only the patients reporting to the Hospital were given the opportunity to participate in the study, this could result in a form of sampling bias ignoring a huge chunk of the population staying at home. These limitations could pave way for more studies to be conducted in the future.

Conclusion

In conclusion to the results of our study, there is a more than satisfactory level of knowledge regarding COVID-19 in our sample. People are more aware of the basic protocols which help in protection against the virus owing to easy access to information.

Generally, patients had a positive attitude towards pursuing dental treatments in person despite being anxious.

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