

COVID-19 - uncertainty and anxiety, psychological and dental healthcare needs

Sami Aldhuwayhi^a, Atul Bhardwaj^{b*}, Smita Singh Bhardwaj^c

Abstract

Background: This study was conducted to analyse anxiety, awareness and perceived need of dental and psychological healthcare during COVID 19 among the adult Saudi Arabia population.

Materials and method: An online survey was done by using a questionnaire involving 18-70 years old participants, over a period of two months. The questionnaire comprised of 30 questions; related to anxiety, awareness, psychological and dental health care needs and it was distributed among population of Saudi Arabia through Email, social networking sites etc.

Results: A total of 1456 survey forms were circulated, out of which 900 survey forms were obtained and evaluated for the data collection and analysis. All the participants were resident of Saudi Arabia with knowledge of English language and were above 18 years of age. Descriptive statistics are used in this study to analyse the findings. Frequencies and percentages were used to observe the results. The data obtained was subjected to statistical analysis using IBM SPSS version 24.0.

48.33% were females and 51.67% were males. More than 60% people were aware of various facts associated with coronavirus infection. More than 70% people were anxious about this pandemic and stressed on the requirement of psychological health. 72% responders were scared of going to dental health care providers and 88% felt that they might catch COVID-19 infection if they went for dental consultation or treatment. That's why 84% of population avoided their regular dental check-ups.

Conclusion: We must learn that awareness regarding the disease is really important to manage the anxiety in patients. Our authorities should stress on adequate psychological health care needs of people to manage distress as well as online dental consultations to remove anxiety related to dental treatment.

Key words: Anxiety; attitude; psychological needs; dental healthcare; Coronavirus.

1. Introduction

A novel virus called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was identified.¹ This virus was responsible for coronavirus disease (COVID-19).² Coronavirus has zoonotic origin, and has a rapid person to-person transmission.³⁻⁴ Various changes have been noticed in social life, and general wellbeing of people during this phase of pandemic. These changes are encountered as life has become unprecedented,

due to daily increase in cases suffering from this deadly virus and increase in mortality. There have been efforts to identify people infected with this infection, but measures to acknowledge the psychological health care need of people have been comparatively neglected.⁵ Psychological distress is being created due to various problems being encountered with this pandemic. Long periods of quarantine, commuting restrictions, fear of getting infected with the disease, anxiety about losing relatives and friends, fear of losing jobs and state of economy crises are some of the issues causing depression and psychological agony. There is also a high level of fear related to dental treatment and regular dental visits among the people and thereby neglecting their oral health care needs.

Although WHO is conducting online courses for healthcare workers, but still a state of anxiety prevails in our dental and medical professionals

^a Assistant Professor, Prosthodontics department, College of dentistry, Majmaah University, Al Zulfi, Majmaah 11952, Saudi Arabia

^b Lecturer, Prosthodontics department, College of dentistry, Majmaah University, Al Zulfi, 11952, Saudi Arabia

^c Assistant Professor, Department of Pediatric dentistry, Preventive dental sciences department, College of Dentistry, Majmaah University, Al Zulfi, 11952, Saudi Arabia

E mail address of corresponding author- a.bhardwaj@mu.edu.sa
Address- College of dentistry, Majmaah university, Al Zulfi, Saudi Arabia
Phone number- +966 550165825

regarding themselves or their loved ones getting infected from this disease. People have lot of confusion regarding the source of this infection, factors related to its spread, consequences of infection, its prevention and treatment. And people have a lot of anxiety and confusion regarding getting dental treatment done during this pandemic.

As this infection is contagious, various consequences have been encountered at various levels of society. The global economy has halted many services and products, many workers have become jobless, most of them are working from home, leading to financial crises. The students are also suffering from stress as colleges have been shut down. Besides, the increasing mortality due to COVID-19 outbreak is a large stumbling block.

Thus, this present study was conducted to analyse the psychological health status, knowledge, attitude and anxiety related to dental treatment among people of Saudi Arabia regarding COVID-19.

2. Literature review

According to a Harvard Business Review, world needs to practice social distancing, extensive testing of all suspected cases and collection and sharing of all the data on this disease amongst all the nations.⁶

Studies have found that fear, anxiety were common among patients related with COVID-19 pandemic.^(7,8) Studies have proved that there is an increased requirement of overall healthcare for the general population.⁽⁹⁾ This article will analyse whether the level of psychological distress has increased since the outbreak of this pandemic and if there is need of psychological healthcare as well as online dental consultations during COVID 19 among the adult Saudi Arabia population.

3. Materials and Method

This was an observational and cross-sectional study done in Saudi Arabia using a questionnaire with a consent form attached. This research has been conducted in accordance with the World Medical Association Declaration of Helsinki. The questionnaire was sent through whats app, email in the form of word doc format after obtaining ethical approval from the ethical committee of College of dentistry at Majmaah University. Participants were requested to circulate the same survey questionnaire to people in their contact list. Thus, questionnaire was directed to multiple participants. Informed consent was obtained from all the participants.

Two formulae are considered for sample size

calculation for the present diagnostic efficacy study. 1. Utilizing sensitivity and other 2. Utilizing specificity

Sample size (n) based on sensitivity = $Z^2_{1-\alpha/2} \times S_N \times (1-S_N) / L^2 \times \text{Prevalence}$

Sample size (n) based on specificity = $Z^2_{1-\alpha/2} \times S_P \times (1-S_P) / L^2 \times (1-\text{Prevalence})$

Were,

n= required sample size,

S_N = anticipated sensitivity,

S_P = anticipated specificity,

α = size of the critical region (1- α is the confidence level),

$Z_{1-\alpha/2}$ = standard normal deviate corresponding to the specified size of the critical region (α),

L = absolute precision desired on either side (half-width of the confidence interval) of sensitivity or specificity.

Taking sensitivity and specificity both as 90% and expected maximum prevalence as 50%, L= absolute precision as 10% and Z=2 (for 95% confidence interval), from the above formula, sample size was found to be = 383.

For present study expecting 20% drop outs/loss to follow up, 460 subjects needed to be evaluated.

The sample size for this study was kept as double the sample size required to reduce the bias in the study.

Participants filled the consent form and demographic details. They had to fill the response to a set of 30 questions of the questionnaire. Participants aged 18 to 70 years, who understood English and gave consent, were included in the study and were selected by random sampling method. The data collection was initiated on 1st June 2020 to 4th November 2020. Data was collected from varied population of Saudi Arabia.

The socio-demographic variables were gender, age and education status. The questionnaire contained three sections. First section had questions of awareness (attitude and knowledge), of need of perceived mental health care and anxiety during COVID- 19. There were 6 questions in this section, rated by scale of 'yes', 'no' and 'don't know'. Anxiety related to novel COVID-19 infection was assessed by 14 questions, and the need of perceived psychological and dental healthcare was analysed by 10 questions. Both psychological and dental health care need was assessed by 2-point scale of 'yes' and 'no'.

4. Results

A total of 1456 survey forms were sent. Out of these, 1238 participants gave consent and filled the forms. After excluding the incomplete forms, a total

of 900 survey forms were obtained and evaluated for the data collection and analysis.

All the participants were resident of Saudi Arabia with knowledge of English language and were above 18 years of age. Hence, individuals with at least a basic educational level of 10th pass were included in the study sample. 81.44% of the population was at graduation level and above. Around 64.55% of participants were below 40yrs of age. Only 3.44% were above 60yrs of age. Out of the total participants, 48.33% were females and 51.67% were males (Table no. 1).

Part I: Awareness (Knowledge and attitude) of COVID-19

Because of awareness created from mass media, many participants were aware of the basic disease. Out of the total participants, 66.78% knew that washing hands and using sanitizers can inhibit the spread of infection. Most of them (56.44%) were not having any knowledge regarding transmission of virus through pets. 78.67% replied that virus don't spread from an isolated infected person. Only 46.33% responders considered COVID-19 as life threatening disease. 21% answered that the virus spreads through physical contact with infected person, through fomites, droplet infection and is air borne and spreads via dental treatment and by food. 25.11% of responders replied that respiratory distress is the cause of mortality in COVID-19 patients. The results obtained from all the six questions of awareness, were subjected to statistical analysis using ANOVA test, to find the level of significance between answers obtained from study subjects. It was found that a significant relation (p -value <0.05) was observed among population of Saudi Arabia regarding awareness about COVID-19, except question about the modes of coronavirus spread (Table no. 2).

Part II: Anxiety towards COVID-19

Results obtained from 14 questions regarding anxiety prevailing in minds of Saudi Arabia population showed that around 75-80% participants were very much preoccupied with the pandemic in the past one month. Sharing the anxiety with each other always reduces the stress level. It was reported that 84.44% participants were sharing anxiety with their family and friends by talking about this pandemic. Only 72.22% participants were having support of their family to deal with this situation. About 88.22% had reduced social contacts and 87.77% avoided ordering food online. Approximately 79% were sceptical and paranoid with the idea of getting the infection. It

was found that people were taking precautions as they were anxious of getting infected with this disease. 52.89% study subjects were using masks without having any signs and symptoms of disease.

Around 73.11% were tensed and worried for themselves and their close ones regarding getting infected with COVID-19. Many participants (79%) worried about children and old aged getting infected with this disease. 88% people were worried about the financial loss to country and a bad phase of unemployment. 78.89% participants reported with stocking daily household items, fearing the shortage of same in future. Increase in awareness, showed a changed attitude regarding washing of hands. Now around 98% of population wash their hands often. But because of increase in anxiety, the sleep and eating disorders had been observed. 52.78% people were having sleeping difficulty; whereas 47% suffered from eating disorders like having more tea and coffee. Result from all participants for recording anxiety level was recorded at 2-point scale with yes or no. The data thus obtained was subjected to statistical analysis using one-sample t-test. It was found that all anxiety driven questions were showing a significant level (p -value <0.05) among Saudi Arabia population (Table no. 3).

Part III: Perceived dental and psychological healthcare needs- need for online consultations

It was found from anxiety questionnaire that 84% people have someone to share their anxiety and share and absolve their worries regarding the pandemic. This is a good sign, as increase in anxiety level causes various psychological issues. To observe psychological distress among study population and to assess the need of dental and psychological healthcare, ten questions were asked to the participants. More than 88% participants required online help from psychological and dental health care experts to help them with their problems during the pandemic. Around 72% responders were scared of going to dental health care providers and 88% felt that they might catch COVID-19 infection if they went for dental consultation or treatment. That's why 84% of population avoided their regular dental check-ups.

But people were taking care of their oral health by brushing daily (88.44%) and their psychological health by resting and relaxing (47.11%). Around 79% participants felt that this pandemic could affect the people already suffering from various chronic diseases and this might get worse with getting dental treatments done. Because of anxiety regarding getting infected with coronavirus, people

were taking immune-boosters (73%) and prophylactic medicines (45%). 85% responders said that dental and medical facilities being given to

infected persons were adequate. The data was analysed using one sample t-test. It was found that response obtained from responders was statistically significant (Table no. 4).

Table 1. Distribution of participants according to age groups, gender and education status

Age Groups	No. of subjects	Percentage
18-30	373	41.44
31-40	208	23.11
41-50	221	24.56
51-60	67	7.44
61-70	31	3.44
Gender		
Male	465	51.67
Female	435	48.33
Educational status		
10 th Pass	13	1.44
12 th Pass	154	17.11
Graduate	335	37.33
Postgraduate	398	44.11
Total	900	100

Table 2. Awareness and knowledge about COVID-19 pandemic

Questions	yes	no	Don't know	F-statistic p-value			
Q1	Can cleaning or sanitizing your hands stop spread of coronavirus?	601 / 66.78	56 / 6.22	243 / 27	2.909	0.044*	
Q2	Are animals able to transmit coronavirus?	104 / 11.56	288 / 32	508/56.44	2.813	0.048*	
Q3	Can symptomatic COVID isolated patients spread the infection?	86/ 9.56	708/78.67	106/11.78	2.659	0.052*	
Q4	Is COVID-19 is life threatening?	417 / 46.33	215 / 23.88	268 /29.78	2.815	0.048*	
Questions	yes	no	Don't know	F-statistic p-value			
Q5	Does coronavirus spread through?	physical contact with infected person	101/11.22	22/2.44	11/1.22	2.542	0.064**
		through fomites	35/3.89	102/11.33	231/25.67		
		via dental treatment	47/5.22	11/1.22	31/3.44		
		air borne/droplet infection	4/0.44	3/0.33	103/11.44		
		food	2/0.22	21/2.33	176/19.56		
	total	189 /21	159 / 17.67	552 / 61.33			
Q6	What is the ultimate cause of death in COVID-19?	Heart failure	13/1.44	221/24.56	112/12.44	2.790	0.049*
		Renal failure	22/2.44	136/15.11	125/13.89		
		Respiratory distress	226/25.11	0	45/5		
		Total	261/29	357/39.67	282/31.33		

*p-value<0.05 is significant; **p-value>0.05 is insignificant

Table 3. Anxiety regarding COVID-19

Questions	yes	no	t-test ^p -value
Q7 Are you sharing your anxiety with family and friends?	760 / 84.44	140/15.56	2.8690.045*
Q8 Do you have adequate support of your family?	650 / 72.22	250 / 27.78	2.7880.049*
Q9 Are you avoiding social contacts?	794 / 88.22	106 / 11.78	3.4110.027*
Q10 Are you avoiding food online?	790 / 87.77	110/12.22	3.1660.034*
Q11 Are you talking about this pandemic often with your family and friends?	760 / 84.44	140/15.56	2.9190.043*
Q12 Do you feel paranoid about contacting coronavirus infection by dental treatment?	711/79	189/21	2.9460.042*
Q13 Are you feeling difficulty in sleeping by being worried about the pandemic?	475/52.78	425/47.22	2.9190.043*
Q14 Are you regularly using mask without any apparent signs and symptoms of the infection?	476/52.89	424/47.11	2.8860.045*
Q15 Do you feel worried about yourself, and your near ones regarding the spread of Novel COVID19 especially while visiting a dentist?	658/73.11	242/26.89	2.9550.042*
Q16 Are you worried about increasing unemployment and deteriorating economic condition of country?	796/88.44	104/11.56	2.9640.041*
Q17 Have you stocked the daily routine items in your house?	710/78.89	190/21.11	2.9910.040*
Q18 Are you afraid that children and old aged persons at your home and nearby can be affected from this disease?	711/79	189/21	2.9910.040*
Q19 Do you have changes in your eating habits like drinking more coffee and tea?	424/47.11	476/52.89	3.0840.037*
Q20 How often do you feel the need to wash your hands?	886/98.44	14/1.56	2.0640.011*

*p-value<0.05 is significant

Table 4. Questions regarding healthcare needs

Questions	yes	no	t-test ^p -value
Q21 Are you scared while visiting a dental healthcare provider?	650 / 72.22	250 / 27.78	2.5570.043*
Q22 Do you think dental consultation or treatment during this crisis will make you prone to COVID-19?	794 / 88.22	106 / 11.78	2.6610.037*
Q23 Are you avoiding your regular dental check-ups these days?	760 / 84.44	140/15.56	2.3400.058**
Q24 Are you brushing daily?	796 / 88.44	104/11.56	2.6390.039*
Q25 Are you spending time to exercise, rest and relax?	424/47.11	476/52.89	2.3130.060**
Q26 Do you think that taking online advice of dental health professionals is helpful in dealing with the current pandemic situation?	796/88.44	104/11.56	2.0030.010**
Q27 Do you think this infection affects people more who are suffering from various other chronic diseases?	710/78.89	190/21.11	2.6350.039*
Q28 Have you started with any prophylactic medication to combat the infection of coronavirus?	405/45	495/55	2.5930.021*
Q29 Have you started any immune-booster medicines to boost up your immunity?	658/73.11	242/26.89	2.7310.034*
Q30 Do you think infected people are getting adequate help regarding medical and dental facilities in our country?	765/85	135/15	2.5970.041*

*p-value<0.05 is significant; **p-value>0.05 is insignificant

Descriptive statistics are used in this study to analyse the findings. Frequencies and percentages have been used to observe the results of the study. The data obtained was subjected to statistical analysis using IBM SPSS version 24.0.

5. Discussion

During the period of epidemics and pandemics, normal life comes to stand still. Although these events are a kind of periodic phenomenon, but people have to face variety of challenges during this phase. People with lack of awareness or knowledge regarding disease can cause a situation of panic and psychological distress. Hence, this study was

conducted keeping three different parameters in mind that is awareness, anxiety levels psychological and dental health care needs of general public. This questionnaire was prepared keeping in mind the assessment of attitude and knowledge of people in society; and level of anxiety they have in their minds and necessity of mental, medical and dental healthcare needs related to COVID-19.

Wang et al.⁷ evaluated the level of stress and psychological impacts at the beginning of this pandemic. The study showed that 53.8% people experienced severe stress. 16.5%, 28.8%, and 8.1% showed varying levels of anxiety, stress and depression. In our study, we found that more than 70% people were worried about getting themselves or their closed ones infected with this disease. So, the level of distress increased since the outbreak of this pandemic in population of Saudi Arabia.

Another study by Xu et al.⁸ found that fear, anxiety was common among patients related with COVID-19. They stressed the need of various rehabilitation programs that used traditional Chinese medicine to deal with psychological crisis. In our study, we also found that psychological healthcare should be a necessity to deal with anxiety related to dental treatment and regularly visiting the dentist even during this pandemic. For this we can also conduct few online workshops and programs to deal with stress.

To assess the level of awareness, anxiety and mental healthcare needs among people of Indian origin, Roy D et al.⁹ conducted an online survey and assessed 662 responses. They also derived similar conclusions as found in our study. The participants had a moderate knowledge about the pandemic, but enough about its prevention. The anxiety levels were quite high related to present situation and its spread. They identified sleep apnoea and paranoia about acquiring coronavirus infection. The main reason for stress was related to news on social media. Around 80% believed that there is requirement of psychological healthcare need.

Lee SA¹⁰ developed and evaluated the Corona Anxiety Scale to identify anxiety associated with the pandemic. Elevated scores were found with actors like diagnosis of COVID-19, impairment, extreme hopelessness, suicidal ideation. They concluded that CAS is a valid tool to analyse anxiety.

As observed in our study, the people are distressed not only because of fear of getting infected, but also due to economic crises and loss of jobs. Similar findings were observed in a study by Fardin MA¹¹, who conducted a review to assess the psychological disturbance among people in the world. He revealed that COVID-19 has impacted

psychologically and increased the level of anxiety. The prevalence rate of COVID-19 is continuously increasing that resulted in various restrictions. Thus, there is a need to raise public awareness to control anxiety in the society.

Every epidemics or pandemics have its own characteristics concerned with progression, preventive measures and treatment. Thus, it is necessary to create public awareness by giving knowledge about the disease and thus changing the attitude of society so that they become confident to continue with their regular oral health care check-ups done during this pandemic.¹²⁻¹⁶

When the attitude of general public was compared with health professionals, Mishra et al.,¹⁷ observed that the health workers have better level of awareness and low levels of anxiety than general public. In our study we compared various education groups too. It was found that as the level of education increased, the anxiety level decreased. But contrary results have been derived in a study by Abebe et al.¹⁸ on healthcare professionals in Ethiopia. They reported that there was a need of training for healthcare workers during the Ebola virus outbreak in 2015.

The people of Saudi Arabia reported with frequent use of mask, sanitizers and hand washes, which indicated their awareness and high level of concern towards personal hygiene measures to avoid the transmission of the pandemic. But still they lack the awareness regarding the factors involved in spread of disease and effect of this virus on various body systems.

Most of them were avoiding food online, don't travel, getting self-quarantine and maintaining social distancing. But they have fear and apprehension regarding themselves or their loved ones getting infected with this disease. This fear was reflected as signs of sleep apnoea and eating disorders in society. Although many of them are talking about this pandemic and sharing their anxiety with loved ones, but still they feel the need of psychological health experts that can manage their fear and distress. Most of them were worried about economic crises in country and loss of jobs too.

Related to their healthcare needs, although they want that their anxieties should be relieved by various psychological health professionals and routine check-ups, they are still afraid to avail the routine dental and medical healthcare services. This was due to the fact that they were aware about the fact that those suffering with chronic and systemic diseases are more prone to infection. Few of them were taking immune-boosters to increase their

immunity to fight against infection. This study has a positive finding that people of Saudi Arabia trust the dental and medical healthcare facilities being provided to infected patients. With this study, we noticed that more awareness regarding the disease and relieving distress is the need of the present situation. Also, regular online dental and consultations will help them relieve the anxiety level before their regular dental visits. Yao et al.¹⁹ felt the need of online health consultations, as face-to-face counselling is a challenging task. Study by Tucci et al.²⁰ and Rubin GJ et al.²¹ explored the impact of various infections and found that they have an association with obsessive-compulsive disorders.

6. Study implication

Since the outbreak of this pandemic, many studies have been conducted on health care workers but limited work has been done on the general population. This study has been done to evaluate anxiety, awareness and need of psychological healthcare among the adult Saudi Arabian population as well as the need for them to continue with their regular dental check-ups and treatments and to overcome anxiety by regular online consultations prior to their dental appointments and create awareness by various online programs and awareness programs.

7. Study Limitation

The present study has few limitations like our online questionnaire was assessed by only those people who can understand English language and have smartphones, social network accounts and e-mail IDs. So, we targeted population that is at least 10th pass. Thus, results of present study can't be applicable for the whole population of the country. More studies are needed to analyse the perceived need of psychological and dental healthcare, awareness, attitude, anxiety in people from different cities of Saudi Arabia regarding their oral health care needs.

8. Conclusion

World Health Organization should make serious efforts to curb such pandemics in future. More awareness is required related to causative agents and effects of disease. During this peak phase of COVID-19 outbreak, there is a need to take efficient measures to deal with psychological impact of this disease on society. Therefore, informative, preventive and psychiatric interventions are essential during outbreaks of such infectious diseases with such a high mortality rate. Also,

online dental consultations for their dental problems can help them relieve their level of anxiety that they are having before visiting dental professionals during this pandemic.

Author contributions

Sami Aldhuwayhi- Conceptualization, methodology, data curation, original draft preparation. Atul Bhardwaj- Visualization, Investigation, Smita Singh Bhardwaj- reviewing and editing

The manuscript has been read and approved by all the authors, that the requirements for authorship as stated earlier in this document have been met, and that each author believes that the manuscript represents honest work.

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