Original Research Article

Attitude(2) and mental health effects(1)related to COVID 19 in Dental patients.

Abstract:

Objectives: The objective of this study was to determine mental health effects, attitude and related behaviors(3) among Patient's visiting Dental OPD who are more vulnerable to get infected because of high risk in dental setups.

Materials and methods: cross-sectional study(4) was conducted amongst patients visiting professional dental setup of Jinnah Sindh medical university and Jinnah postgraduate center. Consent was taken before participation in the study. Patients visiting dental OPD (SIOHS and JPMC) were requested to fill the hardcopy of the questionnaire(5) (after taking permission from the respective OPD Heads/ authority). Attitude or awareness(6) of COVID-19 assessed through closed-ended questions.

Results: Compared to males, females were more afraid of becoming infected with COVID-19 (*p*-value 0.018), affected more emotionally with COVID-19 pandemic (*p*-value 0.042), were wearing mask more frequently (*p*-value 0.038) and were more afraid dental treatment due to COVID-19 (*p*-value 0.023). With increase in qualification there was increase in COVID-19 fear (*p*-value 0.028), emotional effect (*p*-value 0.000) and effect on daily routine (*p*-value 0.002).

Conclusion: Given that the data collection was undertaken during the 2nd wave of COVID-19 in Karachi, this result is indeed unexpected(7). From the findings of this study it can be showed that all participants were not properly engaged in preventive measures to protect themselves from COVID-19.

Keywords: COVID-19, mental health, patient anxiety(8).

Introduction:

Transmission of COVID 19 has shown to occur mainly by close contact with affected person through respiratory droplets containing the contagion.[1] Dentists are at high risk of exposure(a) to COVID 19 infection because of aerosol generation during dental procedures and the close

proximity to the patients during treatment.[2] They are also exposed to blood, saliva and other body fluid during routine dental and surgical procedures.[3] The main sources of generating aerosols in dental surgeries are rotary instruments such as headpieces, air water syringes and ultrasonic scalers. This aerosol generation is dangerous because it contains large droplets of saliva, water, blood and microorganisms.[3, 4]

Given the likely transmission of COVID-19 via droplets and aerosols during dental clinical procedures, dental practitioners are at a high risk(a) of COVID-19 infections.[2, 5] This aerosols generation not only puts dental care providers at high risk but also increases the risk of cross-infection to patients from other patients or the dental health care provider if inadequate infection protocols are practiced.[4] This could lead to a higher chances of community spread as well.[6] Precautionary measurements have been advised by health care regulatory authorities to protect dental healthcare personnel, their families, and their patients from the spread of virus, moreover to reserve the much-needed supplies of personal protective equipment (PPE).[7, 8]

Several studies have reported that dental care settings have high cross-contamination potential.[4] To reduce spread of COVID-19, dental practices have been recommended to limit clinical activity to only patients requiring urgent care.[3] All the routine dental procedures such as examination, preventive therapies, extraction or restoration of asymptomatic, aesthetic dental procedure and routine orthodontic follow ups should be postponed or deferred to avoid the risk of transmission.[4] Many measures have been suggested to reduce the risk of COVID-19 transmission in dental offices such as tele communication, screening on arrival at clinic/OPD, patient's medical health status, PPEs and many more.[9]

Dentists do not only treat oral problems but also play important role in psychological counseling for patients.[10] Despite of WHO recommendations regarding COVID-19 the precautionary measures are still not well understood among people.[11] Understanding the elements of the public's behavioral reaction to a pandemic or rapidly spreading disease is essential for developing public health campaigns to provide information and ultimately limiting disease spread.[12] With the rapid spread of COVID-19 outburst, people have been highly disturbed by its spread, severity, and negative effects on the general health and society.[13]

The **objective** of this study was to determine mental health effects, attitude and related behavior(1)s among patient's visiting Dental OPD. The results of this study will help to evaluate attitude of public towards COVID-19 pandemic visiting dental OPD (a high risk area). If it is found that the patients are not considering the severity of the disease caused by the corona virus, then

recommendations can be made to ensure that the patients are made aware of the dangers associated with not taking proper precautions in this regard(9).

1 Methodology:

After receiving approval from the Institutional Review Board of Jinnah Sindh Medical University, cross-sectional study was conducted amongst patients visiting professional dental setup of Jinnah Sindh medical university and Jinnah postgraduate center. A researcher was present all the time for any query related to consent form or questionnaire(10) (both provided in English and Urdu languages). Consent was taken from the patients before participation in the study. The questionnaire comprised of three components. The first section of the questionnaire recorded the demographic information of the patients including per Name, Age, Gender, marital status, education and occupation. In the next section, their general attitude and precautions they were currently taking to protect themselves from COVID19 were assessed by eight items were responses recorded using Likert scale and close ended questions. In the third section, ---items determined their attitude to dental practices and treatment during the pandemic. Patients visiting dental OPD (SIOHS and JPMC), who were over 18 years and able to give consent were requested to fill the hardcopy of the questionnaire (after taking permission from the respective OPD Heads/ authority). Data entered in SPSS software version 23 (SPSS Inc., Chicago, USA).

1.1 Data analysis:

Data analysis done with the help of SPSS version 23. Descriptive statistics (means with SDs(b) and percentage frequencies) calculated for all patient characteristics and survey responses. Mean and standard deviation was calculated for continuous data and chi-square were applied for statistical significance on the basis of gender, education level and marital status. $P < 0.05$ taken as statistically significant.

2 Results:

According to demographic data out of 450 responses 396 responses included in study, others were not properly filled/half filled©. 230 were females (57.5%) and 166 were males (41.5) with mean age of participants being 30± 12.26 years. Education wise 172 were at the level of matric, 95 Intermediate, 56 Graduate, 12 Postgraduate, 11 Uneducated(d). In marital status 191 were single, 175 were married and 8 were divorced.

Compared to males, females were more afraid of becoming infected with COVID-19 (*p*-value 0.018), affected more emotionally(11) with COVID-19 pandemic (*p*-value 0.042), were wearing

mask more frequently (*p*-value 0.038), were avoiding leaving home (*p*-value 0.004) and were more aware of death related to COVID-19 (*p*-value 0.003). Relating to dental treatment females were more afraid dental treatment due to COVID-19 (*p*-value 0.023), wanting PPEs to be worn by dentists (*p*-value 0.007) and assistants (*p*-value 0.044).

On the basis of qualification, it was shown that with increase in qualification there was increase in COVID-19 fear (*p*-value 0.028), emotional effect (*p*-value 0.000) and effect on daily routine (*p*-value 0.002). More qualified respondents were seeming to agree more on delay in their treatment (*p*-value 0.008) and were preferring single visit treatment rather multiple visits (*p*-value 0.017).

Table I- General attitude and precautions by participants to protect themselves from COVID-19.

S.No	Question	Response			
		A Lot n (%)	**Somewhat n (%)**	**A little n (%)**	**Not at all n (%)**
1	Are you afraid of becoming infected with COVID-19?	147 (37)	134 (33.8)	49 (12.3)	67 (16.9)
2	Have COVID-19 pandemic affected you emotionally/ financially?	137 (34.8)	154 (39.1)	43 (10.9)	60 (15.2)
3	Have COVID-19 pandemic affected your daily routine?	122 (31.5)	182 (47.6)	39 (10.1)	44 (11.5)
4	Do you normally wear Mask?	154 (40.3)	198 (51.8)	-	30 (7.9)
		Yes n (%)		**No n (%)**	
5	Do you avoid leaving home?	226 (60.4)		148 (39.6)	
6	Have you had COVID-19 test?	119 (30.7)		269 (69.3)	
7	Do you know that COVID-19 can lead to death?(12)	225 (58.7)		158 (41.3)	
8	Do you believe that Covid-19 is a serious issue?(12)	281 (73.8)		100 (26.2)	

Table II- Patients' attitude to dental practices and treatment during the pandemic? Sample size(e)

S.No	Question	Response			
		A Lot n (%)	**Somewhat n (%)**	**A little n (%)**	**Not at all n (%)**

1	Are worried about undergoing dental treatment because of COVID-19?	158	153	49	24
		Yes n (%)	**No n (%)**	**Not sure n (%)**	
2	Would you Delay dental treatment on medicine if dentist asks?	206	159	22	
3	Do you feel comfortable in having treatment in room with multiple dental chairs? (f)	158	195	32	
		Yes n (%)		**No n (%)**	
4	What would you prefer single visit treatment or multiple?	227		151	
5	Do you mind dentist working without PPE?	171		204	
6	Do you mind staff working without PPE?(f)	166		211	
7	Are you comfortable with 2 or more dental assistant working with Dentist?	168		211	
8	Would you pay extra for Protocols?	143		237	

Table III- Difference in attitude and practice to COVID-19 and dental treatment according to marital status.

S.No	Question	Response				*p*-value*
		A lot n (%)	Sometimes n (%)	A Little n (%)	Not at all n (%)	
1	Are you afraid of becoming infected with COVID-19? Single Married Divorced	 82 46 5	 58 74 1	 25 16 1	 26 36 1	0.007
2	Have COVID-19 pandemic affected your daily routine? Single Married Divorced	 71 40 1	 79 87 6	 21 14 1	 16 25 0	0.025
3	Do you normally wear Mask? Single Married Divorced	 91 53 1	 81 94 6	 15 23 1	 0 0 0	0.006
		Yes		**No**		
4	Have you had COVID-19 test? Single Married Divorced	 56 45 8		 131 122 0		0.000
5	Do you know that COVID-19 can lead to death?(g) Single Married Divorced	 119 81 6		 68 82 2		0.019
6	What would you prefer single visit treatment or multiple?					

	Single Married Divorced	123 89 6	59 75 2	0.029
7	Do you mind dentist working without PPE? Single Married Divorced	90 68 0	90 95 7	0.016
8	Do you mind staff working without PPE? Single Married Divorced	88 60 7	94 105 1	0.003
9	Are you comfortable with 2 or more dental assistant working with dentist? Single Married Divorced	92 58 2	93 107 6	0.014
10	Would you pay extra for protocols? Single Married Divorced	86 42 6	101 121 2	0.000

*Chi-square test was applied. P< 0.05 was statistically significant.

3 Discussion:

COVID-19 is spreading and mutating in different variants rapidly in the world, due to the unknown nature of this disease and its high prevalence, the possibility of increasing psychological complications on people, (h)especially on those who are visiting the different OPD in hospitals. Due to the nature of COVID-19, attention to psychological effects on the patient is essential. This study examines the psychological health effects and behavioral changes (h)on patients visiting the dental opds because they are in close contact with secretions of saliva and blood during dental work.

According to the results of the systematic review study, the most common psychological disorders among patients during the COVID-19 pandemic are fear of transmitting the disease to their patients, anxiety, financial worries, high expenses, career prospects worries, lack of skills and knowledge during the pandemic, worries about transmitting the disease to their family. Given that the data collection was undertaken during the 2nd wave of COVID-19 in Karachi, this result is indeed unexpected. After 1st wave of COVID-19 pandemic we were expecting to get more positive attitude towards this disease. From the findings of this study it can be showed that all participants were not properly engaged in preventive measures to protect themselves from COVID-19 or were not taking it as serious issue. 42.7% participants in our study visited dental OPD for elective

treatment that could be delayed. On the basis of gender this study shows that females were behaving more responsibly then male. Similar results showed by V Galasso et al in their study "Gender differences in COVID-19 attitudes and behavior: Panel evidence from eight countries" that women were more likely to consider COVID-19 as a serious health issue, to agree with preventive public policy measures.[14]

According to a local study by TM Mirza to evaluate the knowledge and perception of covid-19 and its preventive measures in public of Pakistan, it was concluded that general public is well aware about the disease and its general concepts. The participants were as well strongly in support of all the preventive measures at government level proposed in the questionnaire to lessen the spread of COVID-19. [15] Another local study by M Saqlain et al(i) concluded that Pakistani residents had decent knowledge and practices concerning COVID-19 however there are gaps in specific aspects of knowledge, and practice that must be focused in future educational and awareness campaigns.[16]

Comparing to previous studies this study does not shows satisfactory results that needed to prevent any outbreak specially when 1st wave has passed and possible awareness methods has been implemented. Individuals attitude effects the general population. People should be informed about the potential risk of COVID-19 in dental OPDs by possible means to increase their awareness about the virus and its prevention. Along with recommended precautionary measure suggested by WHO and local govt., additional measures should be taken to deal with people not interested in following preventive measures. In country like Pakistan where there is deficiency of budget to deal with such pandemics, preventive programs and public education should be more focused to avoid any crisis. Densely populated cities like Karachi need more attention and efforts during this pandemic.

Considering dental treatment needs, there are several protocols that prerequisite to be considered. Recommendations have been made to perform a high level of oral hygiene in patients in order to reduce the possibility of any emergencies; including brushing teeth at least twice a day, flossing daily, and using mouth-wash.[17] community awareness programs regarding dental health or oral hygiene should be promoted to avoid unnecessary visit of dental OPDs until situation gets better. It may be useful in reducing the risk of spreading COVID-19 and other diseases during clinical practice by educating the patients/ general population about infection control and psychologically relieving their stress relating to dental treatment.

Only few studies evaluated the response and attitude of patients visiting dental OPD considering it as high risk area to get infected. This study is to fulfil the gap in relevant literature but results require further investigation considering that other variables may influence the results. This study includes several basic limitations (j) that need to be acknowledged and addressed in future studies.

One limitation is that only 2 govt. dental OPDs were included in study so, patient visiting private clinic may have different scenario. These results cannot be generalized for all dental patients.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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