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COVID-19 Related Knowledge among Dental Patients- A Questionnaire Survey

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ABSTRACT

Objectives: The novel coronavirus disease (COVID-19) is a serious pandemic that caused viral respiratory illness. Human behavior and knowledge assessment during the crisis are critical in the overall efforts to contain the outbreak. Therefore, we aimed to assess knowledge, and precautionary measures toward COVID-19 among a sample of dental patients in Iran.

Material & Method: This study was conducted among 270 attending patients to the dental clinics as a cross-sectional survey. They were asked to complete a standardized covid-19 knowledge questionnaire. This questionnaire includes 20 knowledge-based questions about covid-19. Along with this questionnaire, a checklist including five items about sociodemographic characteristics was completed by participants. After collecting the data, they were analyzed by descriptive statistical methods and chi-square test using SPSS software.

Results: The study was performed in February 2021. Results of this study showed 19.5%, 30.6% and 49.9% of respondents had poor, fair and satisfactory level of toward covid-19 respectively. Above 65% of the responders answered correctly to all questions. Men had poorer information statistical tests released that, knowledge had a significant association with educational level, age and monthly income amongst responders.

Conclusions: It was concluded that, their knowledge towards SARS-CoV-2 is generally good. Further steps need to be taken to educate the patient's about its transmission in a dental clinic. Also, training programs about mechanism of potential spread of COVID are suggested for the improvement of knowledge.

Keywords: COVID-19, Knowledge, Awareness, Dentistry

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Introduction

Patient safety plays an important role in improving the quality of patient care[1]. Infectious diseases are a substantial public health problem in many countries. In December 2019, the emerging coronavirus, which is now known as the Covid-19 and acute respiratory failure, appears in Wuhan City, China. The outbreak of Covid-2 has become a global health issue. Pneumonia has involved many countries and has infected many people around the world[2]. This virus caused the death of many people.

The virus is highly contagious and is spreading around the world. In Iran, since the first case of the Covid-19 virus was identified, the number of infected people has reached 245 in one week.[3] The available evidence indicates that asymptomatic patients can transmit the virus to others during the incubation period and infect them.[4] COVID 19 cases, like other diseases, are widely classified as suspected, probable, and confirmed. Assessing the symptoms of COVID-19 (suspected cases) is an early stage in the diagnosis and management of this disease. Person-to-person transmission (community outbreak) is currently ongoing in the country, so controlling the disease is essential to prevent its rapid spread across the country.[5,6]

A very high rate of spread and virus transmission induce health system for improving measures of COVID-19 prevention. One of the important factors for preventive measures is the awareness of people. Adherence to preventive and control measures is essential to ensure disease control. This commitment is highly dependent on public awareness. On the other hand, few studies have assessed the knowledge of the population regarding the COVID-19 outbreak.[7,8] Therefore, the present study aims to evaluate dental patient's viewpoint regarding CIVD-19 knowledge and its transmission.

Materials and Methods

This research is a cross-sectional descriptive-analytical study was conducted at Darolshafa Dental Institute, Birjand, Iran from July 2020 to August 2021, after obtaining ethical approval.

The data collection tool in this study was a standard questionnaire. This questionnaire was used to assess the knowledge of people referring to the dental clinic about

the Covid-19 virus. Likert's 3-point scale was used for the response of this questionnaire. Its reliability was obtained through Cronbach's α (α=0.73). Totally 270 patients fill the questionnaire. After checking these questionnaires, 16 cases were excluded due to incomplete information. In the first section of the questionnaire, sociodemographic information was asked, next section consisted of questions, which were designed to assess patient's knowledge regarding the COVID-19 pandemic. Including knowledge about the common route of COVID-19 transmission, personal protective equipment (PPE), its epidemiology and routes of transmission; practices regarding COVID-19 preventive methods. Validity, and interpretability of answers were modified based on the results of the pilot study. Questionnaire were scored as 0 and 1 for incorrect and correct responses, respectively. The questionnaire is attached.

Inclusion criteria for this study were having consent to participate in the study. Questionnaires completed with incomplete information were excluded from the study. The study population was all patients referred to the dental clinic of Birjand city since the beginning of the study.

Using the results of a similar study[9] and considering the 95% confidence interval and 20% accuracy and according to the following formula, 245 samples were obtained, which with a loss of 10%, 270 samples were considered for this study.

$$n = \frac{Z_{1-\alpha/2}^{2} S^{2}}{d^{2}}$$

Statistical Analysis

After collecting information, data was entered into Spss software version 21. Categorical variables are expressed as frequency and percentage, and continuous ones are reported as mean and standard deviation (SD). All the associations were assessed using the chi-square or Fisher exact test. Two samples Independent t-test was used to assess the difference in patients' knowledge. The significance level was set at 0.05.

Results

Overall, 286 questionnaires were distributed among visitors to the dental clinic. Incomplete questionnaires were excluded. Finally, a total of 270 questionnaires were assessed with a response rate of 90.2%. Some of these drop out was due to that these patients were usually in hurry and unfortunately didn't accept to complete the questionnaire. The mean age was 31.6 ± 13.3 years. Regarding the source of covid-19 information, 41.9% reported that they gained their information from social media, (28.7%), obtained their information through TV, 19.8% from friends and relatives, and only 8.9% from a newspaper. 157 (58%) of the respondents were males while113 (42%) were females (Table 1). Their age was between 17 to 64 years old and it was distributed in 3 categories as follows: 17 to 34-years old 44(16.25%), 35 to 50 years old 142(52.5%), and 51 to 64 years old 84(31.25%). The monthly income variable is very substantial in awareness level. The current study showed that 2.75%, 24.5% and72.75% had primary education, high school, and college graduates respectively (Table 1). According to the correct answers among all age groups, a significant difference was observed (P<0.05). The maximum number of correct answers were reported in the 35-50 years old, so that, 88% of this group had the correct answers. While the percentage of correct answers in the other two groups (51-65 years and 17-34 years) was reported as 69% and 55.4% respectively (Table2). There was no significant difference incorrect answers by gender (P>0.05), so that, 91% of the males versus 87% of females gave the correct answers (Table3). Also, there was a statistically significant difference among monthly income groups (P<0.05). (Table2).

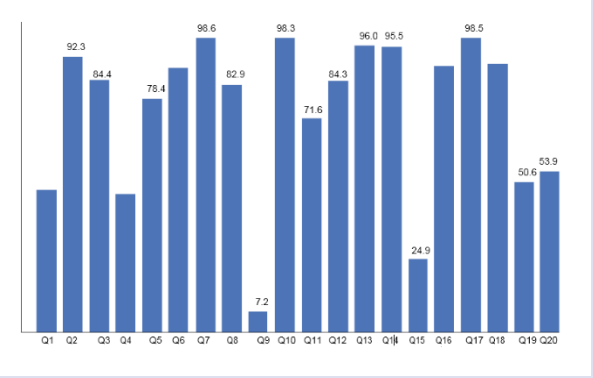

Figure 1. Percentages of correct answers to questions (n = 270)

Table 1. Frequency distribution of studied variables among respondents.

Variables	N	%
Gender		
Male	121	44.8
Female	149	55.2
Age (Years)		
20-34	44	16.25
35-50	142	52.5
51-65	84	31.25
Monthly Income		
Less than <30000000	22	8.1
30-50(m)	133	49.4
Above >50	115	42.5
Education		
Primary	8	2.75
High School	66	24.5
College	196	72.75

Education level had a substantial role in the COVID 19 awareness. The percentage of right answers increased with increasing the level of education. The college education respondents gave the highest number of correct answers (87%). While those with high school education (54%) and patients with primary education

(52%). So that, a significant difference was observed based on education level (P<0.05) (Table 3).

Also, the mean score of knowledge was 14.86±1.63, so that 49.8% of the responders had a high knowledge toward COVID-19 (Table 4).

Discussion

This study was conducted on the awareness of COVID-19 knowledge in Iran. This study shows that a relatively high proportion of dental patients had basic COVID-19 protection and their awareness regarding COVID 19 pandemic is acceptable. Although, some of them had a low level of knowledge.

Various studies have been conducted to assess the knowledge of dental health care providers regardingCOVID-19 recently[10,11]. Therefore, the knowledge of infectious diseases of dental patients is very important.

Results of this study show that education level and monthly income were significant factors in increasing the knowledge about COVID 19. The 35-50 years old respondents had also impacted the knowledge level positively. It can be due to that at this age, many of them are formerly involved in COVID 19 about prevention or treatment of the affected ones. In addition, the lowest level of knowledge was reported in the low monthly income group.

Various researches have evaluated the different levels of awareness about infectious diseases, such as severe acute respiratory syndrome and avian influenza[10,12]. Based on a literature search, any public study on knowledge regarding COVID 19 among the dental patients' population has not been found in Iran until now. So, this survey could provide baseline information for preventive measures to deal with future outbreaks[13,14].

Table2. Distribution of all answers among respondents by demographic variables

Variable	Yes	No	Don't know	Total	P value
Age					
20-34	24(55.4%)	17 (38.5%)	3 (6.1%)	44 (100%)	
35-50	125 (88%)	(12%) 17	0	(100%)142	0.034
51-65	58 (69%)	9(11%)	17 (20%)	84(100%)	
Monthly income(Rials)					
<30000000	18 (41%)	16 (37%)	9 (22%)	43(100%)	
30-50(m)	38 (65%)	18 (31%)	2 (4%)	58(100%)	
>50	142 (84%)	17 (10%)	10 (6%)	169(100%)	0.027
Gender					
Male	110 (91%)	8 (7%)	3 (2%)	121(100%)	
Female	130 (87%)	15 (10%)	4 (3%)	149(100%)	0.071
Education level					
Primary	4 (52%)	2 (26%)	2 (22%)	8(100%)	
High School	36 (54%)	22 (34%)	8 (12%)	66(100%)	0.001
College	170 (87%)	20 (10%)	6 (3%)	196(100%)	

Table 3. Association of Knowledge about COVID-19 with Demographic Variables

Variable	Knowledge About COVID-19		Significance	
	Mean	SD	Test Value	P-value
Age				
20-34	13.16	0.25	F=4.58	0.021
35-50	17.46	0.46		
51-65	12.65	0.77		
Monthly income(Rials)				
<30000000	13.58	0.14	F=3.71	0.042
30-50(m)	14.81	0.36		
>50	16.92	0.18		
Gender				
Male	14.25	0.34	T=0.18	0.31
Female	16.72	0.29		
Education level				
Primary	12.54	0.67		
High School	13.94	0.29	F=7.63	0.001
College	17.39	0.12		

Table 4. COVID-19 Knowledge Summary of the Respondents

Item	Number of Questions	Mean	SD	Knowledge level (in %)		
				Low	Moderate	High
Knowledge about COVID-19	20	14.86	1.63	19.5	30.6	49.9

The long latency period is a serious factor in COVID-19. Almost, half of the dental patients did not know the correct answer. Also, another important question that was answered incorrectly by the majority of respondents was the transmission medium. Regarding immunity against the COVID-19, most subjects chose no immunity. Although, it might compel short-term or moderate-term immunity in many individuals[15]. The questions were related to handwashing had fewer correct answers, which affirmed a less knowledge of handwashing may be among patients. Whereas, handwashing is acutely essential in controlling infectious diseases such as COVID-19. Hence, it should be considered seriously. The majority of the patients had received COVID-19 information from social media or websites, such as the Ministry of Health, and the WHO, while, a fifth receiving information from institutions meetings institutions. Former publications relieved that, the most important information source was those of television and newspapers. Currently, we can allege that social media have substituted with mass media easily. The results indicated that the majority of the responders reported antibiotics would not be beneficial in COVID-19 treatment, maybe due to that, they knew it is a viral illness. Although this rate of the correct answer was satisfactory, we recommend it should be higher.

In this study about two-fifths of them had poor knowledge about this infection. In line with this finding, another study showed that dental patients had low knowledge about HIV/AIDS[15-17]. Patients' education level is increasing as their concern for protection during treatment receiving rising[18]. In our survey, the educational level of dental patients was associated with their level of knowledge significantly. In addition, females got a little better knowledge score with no significant difference compared to males). This finding was similar to the results of other studies[19,20]

Many studies are investigating the knowledge levels of dental students about infectious diseases[21,22]. COVID-19 is a new disease that has spread rapidly and information about this disease is limited. To our best knowledge, no study has yet been made related to COVID-19 knowledge among dental patients. This study could investigate the knowledge regarding COVID-19 of dental patients at the dentistry clinic of Birjand, Iran.

The generalizability of our study was limited to the Iranian population, so, Future studies are required to conduct more accurate surveys. On the other hand, day by day, more facts are revealed about coronavirus. Hence, future studies can rely on more comprehensive and more technical surveys

Limitation

One of the limitations of the present study was that most of the questions in the questionnaire were related to knowledge and the apprehension of the dental patients towards covid-19 and fewer questions included related to the clinical aspect of covid-19 and its control measures. Although, a questionnaire-based study is a useful tool to obtain information regarding the opinions and experiences of participants efficiently[9,23]. In our study, we had a large sample for data analysis; but, some categories of the variables had a small sample size, which caused the imprecision of the results.

Conclusions

From the current study, it can be concluded that good Knowledge regarding Covid-19 was dominated among patients attending the dental clinic. The principal source of patients' information about Covid-19 was social media. Patients who attended dental clinics need to be trained with better knowledge via educational programs. It can be mainly through social media or TV programs, public places, etc. to increase public awareness. These programs can help to control infection through increasing awareness about the required protection measures. Also, the low-income group and low education level group have the least Knowledge level. Therefore, to prevent the COVID-19 pandemic from spreading, the health authorities should concentrate more on these groups.

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Appendix: Study questionnaire

No.	Questions	Yes	No	Don't know
1	COVID 19 is caused by a virus	-	-	-
2	The incubation period of COVID 19 is 5–14 days	-	-	-
3	COVID 19 is transmitted by infected persons	-	-	-
4	COVID 19 is transmitted by droplets in the air	-	-	-
5	COVID 19 is transmitted by droplets on surfaces	-	-	-
6	COVID 19 is transmitted by cough and sneeze	-	-	-
7	COVID 19 is transmitted by exhalation	-	-	-
8	COVID 19 has upper respiratory and lower respiratory symptoms	-	-	-
9	COVID 19 has gastrointestinal symptoms	-	-	-
10	COVID 19 has Fever and muscle pain	-	-	-
11	COVID 19 mortality rate is higher in elderly	-	-	-
12	COVID 19 can be prevented by wearing a mask	-	-	-
13	COVID 19 can be prevented by washing hands for 20 seconds	-	-	-
14	COVID 19 can be prevented by having a good immune system	-	-	-
15	COVID 19 can be prevented by balanced nutrition	-	-	-
16	COVID 19 can be prevented by Vaccine			
17	No drug treatment available for COVID 19			
18	COVID 19 patient needs a ventilator to survive			
19	Vitamin C is important in COVID 19 treatment			
20	Vitamin D is important in COVID 19 treatment			