ATTITUDE AND AWARENESS REGARDING COVID-19 IN PATIENTS PRESENTING TO THE DEAPARTMENT OF ORAL AND MAXILLOFACIAL SURGERY KHYBER COLLEGE OF DENTISTRY PESHAWAR

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ABSTRACT

Objective: *To assess the attitude and awareness of COVID-19 infection among patients presenting to the department of oral and maxillofacial surgery.*

Materials and Methods: *This cross sectional study was conducted on 150 patients in the department of Oral & Maxillofacial surgery, Khyber College of Dentistry Peshawar from March 2020 to August 2020. Awareness and attitude scores were determined for each individual by allocating scores to different responses in such a way that a score of 1 was awarded for each positive response and a score of zero for each negative response. Thus, awareness was categorized as aware (score above 10) unaware (score 10 and below) while attitude was grouped as Good (score above 10) and poor (score 10 and below). Collected data was analyzed using SPSS v.20.Awareness and attitude categories were stratified among age groups, gender and educational levels using chi square / Fisher Exact Test. logistic regression was performed to know the strength of association taking awarness (yes/no) as an outcome variable.*

Results: *Out of 150 patients, 70.7% (106) were Male while 29.3% (44) were female with a male to female ratio of 2.4:1. The mean age was 33.12 ± 13.76 SD. Most of the participants were either illiterate (39.4%) or having only primary education (35.3%). One hundred and eleven (74%) were aware and 39 (26%) were unaware. Thirty two patients (21.3%) were having a good attitude towards precautionary measures and 118 (78.7%) were having a poor attitude. Statistically significant results (p-value <0.05) were only found in awareness category against educational level when logistic regression test was performed. Statistically significant odd ratio (OR) 4.125 (95% Cl 1.71-9.96) was shown for patients with a Master educational level.*

Conclusion: *Majority of patients presenting to the Department of Oral and Maxillofacial Surgery at the Khyber College of Dentistry have an acceptable level of knowledge about COVID-19, but a poor attitude toward preventive measures. The study also found that educational attainment has a significant impact on patient awareness.*

Keywords: *COVID-19; Coronavirus; Awareness, Attitude, Maxillofacial Surgery*

INTRODUCTION

Coronavirus disease is caused by a new COVID-19 virus and is highly contagious and has spread rapidly all over the world. It has become one of the most important pathogens in emerging respiratory illness outbreaks. Diseases associated with this viral infection range from colds to more serious conditions such as severe acute respiratory syndrome and even death. The possibility that these viruses

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could develop into a global pandemic appears to pose a serious public health risk[1]. At the moment, the therapeutic strategies to deal with the infection are only supportive, and prevention aimed at reducing transmission in the community is our best weapon. Aggressive isolation and disinfection measures throughout the world have led to a progressive reduction of cases and politicians and health authorities are making incredible efforts to contain a shock wave that is seriously testing the health system[2].

It could be transmitted from man to man, and symptomatic people are the most common source of spread. Due to the possibility of transmission before symptoms, individuals that remain asymptomatic could transmit the virus, isolation is the best way to contain this outbreak. Similar to other respiratory pathogens, including influenza and rhinovirus, transmission is believed to occur through respiratory droplets (particles greater than 5-10 μm in diameter) due to coughing and sneezing[3]. The transmission of aerosols is also possible in the event of prolonged exposure to high concentrations of aerosols in enclosed spaces. The spread, in fact, is mostly limited to family members, medical professionals, and other close contacts (6 feet, 1.8 metres). With regard to the duration of contamination of objects and surfaces, one study showed that SARS-CoV-2 can be found in plastic for up to 2-3 days, stainless steel for up to 2-3 days, cardboard for up to 1 day, copper for up to 4 hours. Additionally, contamination appears to be higher in Intensive Care Units (ICU) than in Corporate Services and SARS-Cov-2 is found on floors, computer mice, garbage cans and handrails as well as in the air at 4 meters from patients[3].

Preventative practices are the lone answer to countering COVID-19. As of today, no specific treatment or prevention is available for the new coronavirus[4]. Public awareness of infectious diseases helps to control infections, although a lack of adequate information leads to low detection rates, delayed care, discrimination and stigmati[5]. Furthermore, assessing public awareness during an outbreak is essential because proper civic action during an outbreak is motivated by a public understanding of disease transmission, the availability of vaccinations and the success of the medical treatment [6, 7]. In the event of non-compliance with preventative measures, as well as a lack of adequate health infrastructure, the risk increases in developing countries[8]. For an infectious outbreak, it is preferable to pay more attention to prevention than to identification and response[9].

The purpose of the present investigation is to assess the knowledge and awareness of COVID-19 infection among patients presenting to the department of oral and maxillofacial surgery. Education would enable not only the at-risk community to defend itself, but also to seek medical attention quickly.

MATERIALS AND METHODS

This cross sectional survey was conducted in the department of Oral & Maxillofacial surgery, Khyber College of Dentistry Peshawar between March 2020 and August 2020. One hundred and fifty patients presented for Oral and Maxillofacial consultation or treatment at age 15 and older were interviewed independently of sex. The data were collected on a specially designed questionnaire, validated by experts in the field and tested by a pilot study of 25 patients giving a Cronbach's alpha value of 0.79. The questionnaire includes demographics such as age, sex, occupation, educational attainment, socio-economic status and address. The remaining part contains a total of 20 questions regarding COVID-19 awareness and attitude with multiple responses. Questions 1-11, 14 and 20 were related to awareness while the remaining questions (No. 12, 13, 15-19) were regarding attitude. Awareness and attitude scores were determined for each individual by allocating scores to different responses in such a way that a score of 1 was awarded for each positive response and a score of zero for each negative response. Thus, awareness was categorized as aware (score above 10) unaware (score 10 and below) while attitude was grouped as Good (score above 10) and poor (score 10 and below).

Data was collected by a senior most fellowship resident supervised by a senior consultant. Thorough cross infection control measures were adopted during interview keeping a distance of at least six feet from the patient and wearing personal protective equipment. Institutional and departmental ethical approval was obtained before data collection and informed consent was taken from each participant. Those who were willing to participate in the study were included in the study.

Collected data was analyzed using SPSS v.20. Frequencies and percentages were determined for

categorical variables such as responses, gender, educational levels and socioeconomic status. Age was expressed as mean and SD. Total awareness and attitude scores were determined and frequencies and percentages determined for each category. Awareness and attitude categories were stratified among age groups, gender and educational levels using chi square / Fisher Exact Test to see the effect modification keeping the p value less than or equal to 0.05 which were considered as significant.

For the comparison of the strength of association between dependent and independent variables, logistic regression analysis was performed. The goal of this analysis was to determine whether patients who were having higher educational levels were more likely to be aware than those who were less educated. Odd ratios were determined for those who were aware and those who were unaware. Odd ratios with 95% confidence interval was estimated and the difference was considered statistically significant at $p< 0.05$.

RESULTS

A total of 150 participants were interviewed where 70.7% (106) respondents were male while 29.3% (44) were female with a male to female ratio of 2.4:1. The mean age was 33.12 ± 13.76 SD. Most of the participants were either illiterate (39.4%) or having only primary education (35.3%). Labor were their occupation in 32%, followed by house wives (20.67%) and students (20.0%). The majority (50%) of the participants were having satisfactory socioeconomic status followed in frequency by poor category (32%).

Out of the total, 111 (74%) were aware and 39 (26%) were unaware. Thirty two patients (21.3%) were having a good attitude towards precautionary measures and 118 (78.7%) were having a poor attitude. The detail of these findings is given in Table-1.

In order to find out the effect of age, gender and educational level on the awareness and attitude, stratification was performed. Results showed that statistically significant results (p-value <0.05) were only found in awareness category against educational level. The remaining values were statistically non-significant. (Table-2).

A logistic regression was performed to ascertain the effects of educational level on the likelihood that participants are aware. Statistically significant odd ratio (OR) 4.125 (95% Cl 1.71-9.96) was shown for patients with a Master educational level. No significant odd ratios were recorded for Bachelor level (2.44, 95% CI 0.20-29.94), intermediate (1.33, 95% CI 0.30-5.76), Secondary (3.25, 95% CI 0.47-22.39) and Primary (0.32, 95% CI 0.38-2.79). It can be interpreted that patients with higher educational levels were associated with greater odds of having increased awareness. Although statistically significant results were found only at Master level of education with reference to awareness regarding COVID-19 (Table 4).

DISCUSSION

Covid-19 has developed into one of the most concerning pandemic of the present time and has progressed to a life threatening emergency in a very short time. It has caused major damage to the health care resources and loss of valuable members of the community including health care workers[4].

The awareness level of the study participants was such that 111(74%) were aware and 39(26%) were unaware. Thirty two (21.3%) were having good attitude towards precautionary measures and 118(78.7%) were having poor attitude. Azlan et al. in Malaysia studied 4850 subject and stated that 77.2% of study subjects were well aware of the possible devastating effects of COVID-19. In attitude and practice domain of their study, more than 50% of the study individuals were having acceptable scores[10]. Studies across Asia have revealed high levels of COVID-19 knowledge among the general population. Accurate comparison between different countries and factors is not possible as a result of differences in measurement and scoring systems[11]. Akalu et al. stated that poor attitude and practice of preventive measures against COVID-19 were recorded in Ethiopian population but at the same time they also had poor knowledge of the disease[12]. In contrast to the study done in Ethiopia, Iranian[13] and Chinese[11] populations showed promising results in terms of knowledge and practices. This variation in results might be a difference in methodology, study population, data collection procedure and the influence of preventive strategies for COVID 19. Other factors which may affect these results are socioeconomic variables, religious and ethnic values and government policies for effective implementation of protective strategies [12].

Table 1: Descriptive statistics (n=150)

Variable	Categories	Frequency	Percentages
Gender	Male	106	70.7
	Female	44	29.3
Educational level	Primary	53	35.3
	Secondary	16	10.7
	Intermediate	5	3.3
	Bachelor	14	9.3
	Master	3	2.0
	Illiterate	59	39.4
Occupation	Labour	48	32.0
	House wives	31	20.67
	Students	30	20.0
	Jobless	16	10.66
	Teachers	11	7.33
	Farmers	10	6.67
	Professionals	4	2.67
Socioeconomic status	Poor	48	32.0
	Satisfactory	75	50.0
	Good	22	14.7
	Well off	5	3.3
Geographic location	Peshawar	106	86.6
	Mardan	6	4.0
	Malakand	4	2.7
	Bannu	3	2.0
	DI Khan	1	0.7
	Kohat	6	4.0
Age Distribution (years) Mean 33.12± 13.76 SD	Below 20	32	21.3
	21-40	74	49.3
	Above 40	44	29.3
Awareness Score	Aware	111	74.0
	Unaware	39	26.0
Attitude Score	Good	32	21.3
	Poor	118	78.7

Age and gender have profound effects on the biological and behavioral immune system and a unique response is shown in response to several infectious diseases and conditions. Variable response is also shown in terms of perceived infectability, germ aversion, and disgust. Cicin- Sain[14] and Yager [15] in their separate studies have shown that with an increasing age, the biological immune system responses of our bodies are impaired gradually. For example, elderly patients show poor vaccine responses and general increased mortality as a consequence of influenza while 90% of young people respond to vaccination [16]. Decrease biological immune response with advanced age is attributed to the fact that there is decreased production of T cells secondary to thymic involution leading to an increased risk of infectious diseases as we get older [17,18].

Studies conducted in Saudi Arabia[19,20] showed that females were slightly more likely to know about the disease than their male counterparts, but were also more prone to overestimate the risk and death

Table 2: Awareness and attitude score stratification

Variable	Category	Awareness		P-value	Attitude		P-value
		Aware	Unaware		Good	Poor	
Gender	Male	78 (70.3%)	28 (71.8%)	0.857*	22 (68.5%)	84 (71.2%)	0.788*
	Female	33 (29.7%)	11 (28.2%)		10 (31.2%)	34 (28.8%)	
Educational level	Primary	44 (39.64%)	9 (23.08%)	0.000**	14 (43.75%)	39 (33.05%)	0.566**
	Secondary	15 (13.52%)	1 (2.54%)		5 (15.62%)	11 (9.32%)	
	Intermediate	3 (2.70%)	2 (5.13%)		1 (3.12%)	4 (3.39%)	
	Bachelor	13 (11.92%)	1 (2.43%)		3 (9.37%)	11 (9.32%)	
	Master	2 (1.83%)	1 (2.43%)		0 (0%)	3 (2.55%)	
	Illiterate	32 (28.82%)	27 (69.23%)		9 (28.14%)	50 (42.37%)	
Age distribution	Below 20	21 (18.92%)	11 (28.20%)	0.379*	6 (18.76%)	26 (22.03%)	0.284*
	21-40	58 (52.25%)	16 (41.03%)		13 (40.62%)	61 (51.70%)	
	Above 40	32 (28.83%)	12 (30.77%)		13 (40.62%)	31 (26.27%)	

*chi square **Fisher exact

Table 3: Logistic Regression

Dependent variable Awareness (Binary Variable) Aware and Unaware				
Independent variable (Reference category)	Odd Ratio	P value	95% Confidence interval	
			Min	Max
Primary	0.326	0.306	0.038	2.791
Secondary	3.259	0.230	0.474	22.399
Intermediate	1.333	0.700	0.308	5.765
Bachelor	2.444	0.484	0.200	29.936
Master	4.125	0.002	1.709	9.957

rates associated with the coronavirus. Another survey from Australia[21] conducted on 866 housewives suggested that health behavior and beliefs about health accountability and future health needs are linked to sex and age. This is important information about health behaviors that will help educate and support the prevention of chronic and lifestyle-related diseases as we grow older. In this study, differences between sex and age groups were reported for various health-related behaviors.

Contrary to the results of these investigations[19-21] our study has shown that there is no statistically significant difference between gender and age groups in terms of awareness and attitude regarding COVID-19 preventive measures. This difference may be attributed to small sample size in the present investigations. Due to a continuous media campaign on preventive measures, especially electronic media, male and female of all ages are equally aware of the preventive measures. At the same time poor attitude of preventive measures has been observed in both genders owing to the fact that the majority of the general population in this part of the country has been affected by negative propaganda against the corona virus. Another reason may be the government's inconsistent policy toward individual communities in this COVID-19 crisis [19-21].

Other factors can also influence the awareness and attitude towards preventive practices and educational level is the most important amongst them. Results showed that statistically significant results (p-value <0.05) were found in awareness category against educational level when logistic regression analysis was done.

Hoda et al. [19] demonstrated that while undergraduates were slightly more likely to be informed about the disease, post-doctoral graduates appeared to be overestimating mortality rates. It may be due to a slightly higher degree of anxiety in the relatively old population in the postgraduate group [19,

[20].The relationship between education and the level of knowledge on disease transmission and control has already been seen in other studies[22]. Knowledge empowerment and outreach are critical factors in the country's population for disease control. The degree and nature of education has improved knowledge and awareness of the disease. A study conducted in India by Karim et al [23] provided important insights into COVID-19 awareness. Participants from medical and related institutions and the general public conducted a survey and showed that those who participated were relatively more aware of transmission and its mechanism than non-medical groups. Although both medical and nonmedical communities were generally a ware about disease transmission and prevention.

In the present investigation, results showed that in spite of good awareness, there is poor exhibition of attitude practices. Moreover there is no significant association between educational levels and attitude score. Alves RF et al [24], as well as other international studies[25,26,27], reported that college and university students have positive attitudes about how people should behave when dealing with COVID-19. The cause for this conflict is that these works were performed at college and university level while the present investigation was directed on general public presenting for their treatment of maxillofacial trauma and pathologies. The other reason contributing to this different result may be ascribed to the fact that there is no doubt that Khyber Pukhtukhwa province of Pakistan faces more challenges and hardships on an everyday basis than most of its provincial counterparts. The struggle against poverty, fragility and ongoing conflict has undermined the effective implementation of any component of education. In addition, considering the province's socioeconomic, urban and rural, linguistic and cultural diversity, the general population in this part of the country is still deficient in quality education and its application in emerging situations like the COVID-19 pandemic[28].

CONCLUSION

This study carried out a comprehensive review of the awareness and attitude of oral and maxillofacial surgery patients towards COVID-19. The findings suggest that the majority of patients presenting to the Department of Oral and Maxillofacial Surgery at the Khyber College of Dentistry have an acceptable level of knowledge about COVID-19, but a poor attitude toward preventive measures. Our study has shown that there is no statistically significant difference between gender and age groups in terms of awareness and attitude regarding COVID-19 preventive measures. The study also found that educational attainment has a significant impact on patient awareness.

RECOMMENDATION

It is indicated that a balanced and structured educational plan should be contracted to amend the degree of awareness and contribute to better pattern. In the present pandemic environment, the general public must show compliance to follow government instructions and to observe social distancing and strict personal hygiene measures. Administrative authorities are required to take a blind approach while reviewing SOPs based on established criteria.

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