



Knowledge Awareness and Perception towards Prosthodontics Treatment and Services among Medical Students in Jeddah City, Saudi Arabia- A Cross Sectional Pilot Study

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Abstract: Prosthodontics is concerned with the design, manufacture and fitting of artificial replacements for teeth and other parts of the mouth. Prosthodontic treatment involves the replacement of missing teeth by means of removable or fixed partial denture, implants, complete dentures, or over dentures. The aim of this study was to evaluate the level of knowledge, perception, awareness and attitude of the medical students towards Prosthodontic treatment. A cross-sectional, Questionnaire based study was conducted among Medical students, covering various Medical colleges in Jeddah city. The study population was selected using cluster random sampling. Altogether 151 undergraduate medical students throughout Jeddah city participated in this study. The data was collected, compiled, and statistically analyzed using SPSS software version 21 and Chi-square test, t-test, and ANOVA. was performed A total of 151 participants, out of which there were 88 female participants (58.3%) and 63 male participants (41.7%), completed and returned the questionnaire. 134 participants (88.7%) were aware that missing teeth could be replaced and 17 participants (11.3%) were unaware. 93 participants (61.6%) felt implant Supported Prosthesis is a better Option for replacement of missing teeth and 58 participants (38.4%) did not feel so. 75 participants (49.7%) chose fixed partial denture as an option for replacement of missing teeth whereas 76 participants (50.3%) opted for removable partial denture. 64 participants (42.4%) had fear of prosthodontic replacement and 87 participants (57.6%) had no fear. Within the limitations of this study, following conclusions were drawn: Majority of the medical students was aware that missing teeth could be replaced. Most of them thought Implant supported prosthesis would be a better option for replacing missing teeth. Equal number of participants opted for fixed prosthesis. The most important finding of this study was that majority of the participants showed a lack of knowledge regarding oral hygiene measures with dental prosthesis.

Keywords: knowledge, awareness, prosthodontics, dental implants, Oral health.

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I. INTRODUCTION

Health is no longer seen solely as the absence of illness and disease. Rather it is the complete physiological, psychological and social well-being of a person¹ Health related quality of life is an emerging subject of importance during recent years. This is based on the realization that the effects of a disease or condition cannot be fully determined by using solely clinical measures; since these do not take into consideration, the subjective experiences that individuals have concerning their health² Oral health is an essential element of health throughout life. Poor oral care and oral health problems can have a significant impact on quality of life. However, oral problems are affecting the human race since ancient times, and they are considered as one of the problems for health issues. Tooth loss can have a negative impact on facial appearance, speech, and mastication. The replacement of missing teeth by appropriately designed prostheses is in demand, and is required to maintain a good health status and normal life³ Medical practitioners should play an active role in oral health promotion⁴ Proper knowledge of oral diseases is crucial in medical practice due to the following reasons: (a) Periodontal diseases are associated with multiple systemic conditions of medical interest, (b) A large number of systemic diseases have oral manifestations, (c) Many drugs are associated with oral adverse drug reactions^{5,6} and (d) the majority of the population approach medical practitioners for their oral health problems. Hence, early screening and proper referral by these professionals may benefit to improve the access to oral health problems and to reduce the associated morbidity and mortality. The need of the hour is for general practitioners to have adequate knowledge about oral health as they are the one to whom the majority of the population approach. The prevention of oral disease is the most acknowledged and efficient method of ensuring oral health⁶. Oral health is now known to be equally important in relation to general health⁷. Written and visual media and dentists are the most common sources of receiving oral health information⁸ To redirect the focus of oral-health professionals toward effective preventive interventions and to enable them to motivate their patients to adopt healthy behaviors, special educational programs need to be integrated into undergraduate training and made available to established clinicians as required^{9,10}. Though oral health has an important role in systemic health, it is often neglected^{11,12}. The awareness and knowledge of dentistry is still grossly inadequate among many patients and health care workers. The implication of this is that the vast majority of patients who should benefit from dental services or be referred for their various dental ailments would be unable to assess the services due to the poor awareness and knowledge of dentistry by the attending health care providers¹³. Medical doctors are the primary caregivers for the vast majority of health related complaints and they are also expected to play active roles in oral health promotion³. As such, family physicians and pediatricians have much more important roles to play and when their knowledge of dentistry and oral health care practices are low or poor, inappropriate dental management and advice or referrals of patients will be the likely outcome. Similar trends were found among medical students in the study by Adegne et al in which their knowledge of oral health was described as suboptimal since only 2.8% of the 279 medical students had good knowledge of dental specialties¹³ Nurses also play vital roles in the health care of patients along with medical doctors¹⁴. They represent one of the first groups of health care providers

that give primary care to patients before referral to specialist doctors¹⁵. It has been observed that medical doctors do not know much about various common dental problems, consequences of not treating dental patients at appropriate times, various specialists dental branches etc., although they have a dental posting of 2 weeks during their MBBS curriculum¹⁶. Today's students are tomorrow's doctors and the knowledge they are going to acquire at present will be reflected in the future during their practice. Exploration of literature reveals that only few studies have assessed oral health awareness among undergraduate medical students. So, the present study was conducted with an aim to assess oral health awareness among undergraduate medical students in Jeddah city.

2 MATERIALS AND METHODS

A cross-sectional, questionnaire based study was conducted among medical students, covering various medical colleges in Jeddah city. This study was conducted to assess the knowledge, awareness, and perception towards prosthodontic treatment and services among medical students in Jeddah city. Ethical clearance was obtained from the Institutional Ethical committee with approval number H-18-11072019. A specially designed questionnaire consisting of close ended questions was used. The questionnaire was pilot tested for validation on a small group of ten medical students, who were requested to complete it and to indicate any question that they found unclear. The necessary modifications were made in the final questionnaire, which was divided into 2 parts based on knowledge and attitude. The knowledge questions help to know about the awareness and relevant information whereas the attitude questions give us information about their attitude towards prosthodontic treatment and no prior knowledge is assumed. The study population was selected using cluster random sampling. Altogether 151 medical students throughout Jeddah city participated in this study, their name was not recorded to ensure anonymity. Medical students not willing to participate in this study were not included. The students were approached through the medical colleges in which they were studying and each medical college formed a cluster. The required permission for data collection was obtained from the heads of the institutions through proper channel and following the necessary protocol. The participants were randomly selected and the purpose of the study was explained to them. The questionnaire was distributed to them by the investigator, and all the questions were explained to avoid any ambiguity. They were assured of the confidentiality of their responses and were requested to give appropriate answers. The filled questionnaire was collected on the same day and the study was completed by 2 months.

3 STATISTICAL ANALYSIS

The data were tabulated and analyzed using the Statistical Package for the Social Sciences (SPSS) version 21 (SPSS Inc, Chicago, IL). Chi-square test was used to compare the knowledge, awareness and perception of the medical students towards prosthodontic treatment. P-value of less than 0.05 was considered statistically significant, and a p-value of less than 0.001 was considered strongly significant.

4 RESULTS

A total of 151 students, consisting of 88 female participants

(58.3%) and 63 male participants (41.7%) completed and returned the questionnaire. (Table 1). Based on the knowledge questions (TABLE 2), 134 participants (88.7%) were aware that missing teeth could be replaced and 17 participants (11.3%) were unaware. 93 participants (61.6%) felt implant supported prosthesis is a better Option for replacement of missing teeth and 58 participants (38.4%) did not feel so. 87 participants (57.6%) were aware that replacement of missing teeth could be done in a dental college in the vicinity and 64 participants (42.4%) were unaware. 64 participants (42.4%) felt that the quality of their life improves after prosthetic treatment and 87 participants (57.6%) did not feel so. 77 participants (51%) of them felt masticatory ability improves after prosthetic treatment and 74 participants (49%) felt it does not have any effect. 31 participants (20.5%) felt that prosthesis needs oral hygiene maintenance as natural teeth and 120 participants (79.5%) did not feel so. Based on the attitude questions (table 3), 75 participants (49.7%) chose fixed partial denture as an option for replacement of missing teeth whereas 76 participants (50.3%) opted for removable partial denture. 64 participants (42.4%) had fear for the prosthodontic replacement and 87 participants (57.6%) had no fear. 100 participants (66.2%) were content with dental prosthesis and 51 participants (33.8%) were not. 68 participants (45%) would allow dentists

to decide prosthetic treatment for them and 83 participants (55%) would decide on their own. 82 participants (37%) were willing to discuss prosthetic treatment options with their family members and 69 participants (45.5%) did not wish to. 37 (24.5%) of them felt prosthodontic treatment would be very expensive and 114 participants (75.5%) did not feel so. Spearman's correlation between knowledge and attitude score was 0.234 (0.004%) which was statistically significant. (Table 4). Regarding gender wise comparison of knowledge and attitude based on Spearman's correlation, female score was -0.198 (0.065%) and male score was -0.134 (0.293) (Table 5). Regarding gender wise comparison of the knowledge scores, a good score for females was 51 (58%) and for males it was 42 (66.7). Poor score for females was 37 (42%) and for males it was 21 (33.3%). The total good score was 93 (61.6%) and poor score was 58 (38.4%) and Chi-square value was 1.17 with p value 0.27, which was statistically not significant (Table 6). Regarding gender wise comparison of the attitude scores, negative score for females was 52 (59.1%) and for males it was 35 (55.5%) with total negative score being 87 (57.6%). The positive score for females was 36 (40.9%) and for males it was 28 (44.4%) with total positives core being 64 (42.4%). Chi-square value was 0.188 and p value was 0.66, which was statistically not significant. (Table 7)

Table 1. Distribution of the subjects based on gender

	Frequency	Percent
Females	88	58.3
Males	63	41.7
Total	151	100.0

Table 2. Knowledge Based Questions

	Frequency	Percent
K1: Are You Aware That Missing Teeth Can Be Replaced?	Yes	134
	No	17
	Total	151
K2- Do You Think Implant Supported Prosthesis Is A Better Option	Yes	93
	No	58
	Total	151
K3: Are you aware that there is a Dental college where replacement of missing teeth is done in your district?	Yes	87
	No	64
	Total	151
K4: Will quality of your life improve after prosthetic treatment	Yes	64
	No	87
	Total	151
K5: Will your masticatory ability improve after prosthetic treatment	Yes	77
	No	74
	Total	151
K6: Do you think that prosthesis needs oral hygiene maintenance as natural teeth?	Yes	31
	No	120
	Total	151

Table 3 Distribution Of The Subjects Based On Knowledge

		Frequency	Percent
A1: What would you choose between fixed & removable	Yes	75	49.7
	No	76	50.3
	Total	151	100.0
A2: Do you have any fear related to prosthetic treatment	Yes	64	42.4
	No	87	57.6
	Total	151	100.0
A3: Are you content with your oral prosthesis?	Yes	100	66.2
	No	51	33.8
	Total	151	100.0
A4: Do you let your dentist decide with regard to your prosthetic treatment?	Yes	68	45.0
	No	83	55.0
	Total	151	100.0
A5: Do you talk to your family about prosthetic treatment options	Yes	82	54.3
	No	69	45.7
	Total	151	100.0
A6: Do you consider dental prosthetic treatment is too expensive?	Yes	37	24.5
	No	114	75.5
	Total	151	100.0

Table 4 Spearman's Correlation Between Knowledge And Attitude

	r value	P value
Attitude v/s knowledge	-0.234	0.004*

*significant; n= 151

Table 5 Spearman's Correlation Between Knowledge And Attitude (Gender-Wise)

	r value	P value
Females	-0.198	0.065
Males	-0.134	0.293

N= 151

Table 6 Gender wise Comparison Of the Knowledge Scores

		Gender		Total
		Female	Males	
Good	Count	51	42	93
	Percent	58.0%	66.7%	61.6%
Poor	Count	37	21	58
	Percent	42.0%	33.3%	38.4%
Total	Count	88	63	151
	Percent	100.0%	100.0%	100.0%
Chi-square value-1.17				
p value-0.27; n=151				

Table 7 Gender wise Comparison Of The Attitude Scores

		Gender		Total
		Female	Males	
Negative	Count	52	35	87
	Percent	59.1%	55.6%	57.6%
Positive	Count	36	28	64
	Percent	40.9%	44.4%	42.4%
Total	Count	88	63	151
	Percent	100.0%	100.0%	100.0%
Chi-square value-0.188				
p value - 0.66; n=151				

5. DISCUSSION

Oral health means much more than just healthy teeth. Good oral health is a major resource for social, economic and personal development of individuals. Teeth are required for mastication, phonetics, aesthetics, and structural balance and for the comfort of an individual. With the loss of teeth, the above functions are impaired resulting in physical, physiological and psychological trauma to the individual. Preventive dental care is almost non-existent in rural areas¹⁷. The importance of teeth for general health and well-being of an individual has already been discussed. So an appreciation of the need for replacement of lost teeth which depend upon knowledge and attitude of the individual about types and modes of artificial teeth replacement is required to be known¹⁸. Therefore an attempt was made to survey the medical students of Jeddah city who were studying at various medical colleges to evaluate their knowledge, awareness and perception towards prosthodontic treatment and services. The response rate of this study was high (80.8%) and in accordance with the above previous study¹⁹. Based on gender distribution, 58.3% of female participants and male proportion was 41.7%. However, some studies have found a slightly significant influence of gender, which was not revealed in our study²⁰. The majority of our participants were of the opinion that missing teeth can be replaced (88.7%) and only a few of them had an opinion that missing teeth could not be replaced (11.3%). This finding is consistent with the previous studies²¹. Most of our participants thought that implant supported prosthesis would be a better option (61.6%) and quite a lot of participants thought that implant supported prosthesis was not. This is in contrast with other studies^{20,22} which found that only 15.6% of the participants considered implants as a better mode of replacement of teeth. This disparity could be attributed to the higher standards of health and education in the country compared to the neighboring countries in the region^{22,23}. Marcus et al. found that lack of education is correlated to lack of awareness about the importance of oral health and the consequences of neglect appear to constitute a barrier in using dental health care services. Most of the participants felt oral hygiene maintenance is not required for prosthesis as natural teeth (79.5%) and only a few of them felt prosthesis needs oral hygiene maintenance as natural teeth (20.5%). The results of the present study are in accordance with the study conducted by Doshiet al.,²⁴ where clinical medical and paramedical students and medical, engineering students showed poor oral health knowledge respectively, and it is also in agreement with the study conducted by Baseer et al.,²⁵ where health professionals showed less knowledge about oral health. The probable reasons could be less clinical exposure of medical students to oral health problems as they are pre-occupied with their own curricular activities, and also the attitude of the students toward oral health considering it as least important. Among the participants, few of them felt quality of life improves after prosthetic treatment (42.4%) and most of them thought quality of life will not change with the prosthetic treatment (57.6%). Half of the participants chose fixed prosthesis as the option of replacing missing teeth (49.7%) and the same number opted for removable prosthesis (50.3%). This result is in accordance

with the previous studies which showed that 40.5% of subjects showed positive attitude towards fixed prosthesis as mode of replacement of teeth and only 20.1% felt removable prosthesis as a better option. A study done by Al-Quran²⁶ also confirms our results. Similar survey done in Saudi Arabia highlighted that around 50% of the study sample preferred removable partial denture while 25% preferred fixed partial denture and this result was contrary to our findings.²⁰ Most of the participants did not show any fear related to prosthetic treatment (57.6%) and few participants did (42.4%). Lack of awareness of various prosthodontic treatment options amongst participants prevented them from utilizing treatment. Dental camps and prosthodontic outreach programs are possible solutions to change the attitude, spread awareness and provide knowledge about ways and means of artificial teeth replacement as concluded in a study by Menezes M.²⁷

5.1 Limitations of the study

1. Limited sample size as the study was performed only by one group (medical students) and limited only to one city (Jeddah). This limits the generalizability of the study findings.
2. Screening of intraoral clinical status of the study participants was not done.
3. The tendency toward socially desirable response cannot be completely excluded, especially when using a self-assessment tool.

6. CONCLUSION

Majority of the medical students of this study were aware that missing teeth could be replaced. Most of them thought Implant supported prosthesis would be better option for replacing missing teeth. The most important finding of this study was that the majority of participants showed a lack of knowledge regarding oral hygiene measures with dental prosthesis. Equal number of participants opted for fixed prosthesis. The present results may serve as a baseline for the future evaluation of attitudes of medical students towards replacement of teeth.

7. AUTHORS CONTRIBUTION STATEMENT

Dr. Karunakar Shetty conceptualized the study, formulated the study design with regard to this work and was also the principal investigator and primary author of the manuscript. He also analyzed the collected data and coordinated with the statistician for the analysis of the data. Dr. Nada, Dr. Fatima, Dr Arwa and Dr Raniyah gathered the data, helped in analysis of these data and necessary inputs were given towards the designing of manuscript. All authors discussed the methodology and results and contributed to the final manuscript.

8. CONFLICT OF INTEREST

Conflict of interest declared none.

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