Comparison of Oral Health Knowledge, Attitude & Practice among Dental versus Medical Students

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Abstract

Objective: The objective of study was to compare oral health knowledge, attitude and practice scores between medical and dental students of Karachi, Pakistan.

Methods: It was cross-sectional study conducted at private medical and dental college of Karachi, Pakistan from Jul 2018-Jul 2019. Hundred medical and 100 dental students of age 22-26 years of either gender, enrolled in 2nd year of their medical and dental school were recruited for the study by using non-probability convenience sampling technique. The adapted questionnaire was used which consist of 16 items to assess knowledge, attitude and practice regarding oral health. SPSS version 23 was used to analyse data.

Results: The mean age of participants was reported as 22.77 years. Among all medical students, the high mean knowledge score was observed for brushing timings (0.90), for attitude, the high mean score for use of floss/interdental brush was reported (4.41). Among all the dental students, the high mean score was observed for knowledge of brushing timings, frequency of replacing toothbrush and amount of toothpaste on your brush (0.93). According to attitude, high mean score for use of mouthwash was reported (4.45) followed by method of tooth brushing (4.35). According to practice the high mean score was reported for treatment of gum problems as 4.51.The knowledge, attitude and practice score of dental students were significantly high as compared to medical students ($p<0.05$). Among males, knowledge and attitude of dental students were significantly high as compared to medical students ($p<0.05$), whereas no significant difference was found between practice score. Among females, knowledge, attitude and practice score of dental students were significantly high as compared to medical students ($p<0.05$).

Conclusion: The study ascertained that knowledge, attitude and practice regarding oral health was better in dental students as compared to medical students.

Keywords: Oral health, knowledge, attitude, medical students, dental students

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Introduction

Oral wellbeing plays vigorous role in overall health of an individual. Oral health is an essential part of systemic health[1]. Oral health is referred as an individual free of oral diseases and contented with his aesthetics[2]. Oral diseases are root cause of every disease[3]. Healthy body comprises of healthy dental and general systems. It requires simultaneous efforts of medical and dental professionals to keep body healthy[3].

In Pakistan, caries is still most widespread disease in school teenagers. According to World Health Organization, almost sixty percent of school children are affected by dental caries in Pakistan[4]. World Health Organization has strictly recommended to assimilate dental health promotion with

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other aspects of health care. Literature has revealed that oral health knowledge had shown difference between clinical and academic years among medical and dental students[5]. The different dental diseases like gingivitis, caries, Sjogren syndrome, lichen planus, leucoplakia, pemphigus vulgaris are interlinked with systemic diseases and affect over all general health[6].

Medical students are more likely to expose with wide variety of urban and rural population and it is imperative that they must have adequate knowledge regarding oral health in order to counsel their patients[7]. The diversity of factors like anxiety, affordability, lack of resources, lack of knowledge, cultural constraints, patients hesitate to ask for the dental treatment and disease reaches to an irreversible stage where treatment becomes hopeless[8]. Thus, adequate oral health knowledge in medical and dental students is imperative. These students will convey their knowledge to their patients and might help spreading awareness regarding oral health. Medical and dental students are primary body to promote oral health. Having adequate oral knowledge among these students will assist reducing overall prevalence and incidence of oral diseases[9].

A study from India has emphasized over the importance of medical professionals in promoting oral health and incorporating preventable measure[10]. The combine efforts of doctors and dentists will be incorporate major changes with respect to dental diseases in general population. Therefore, it is vital for these students to have sufficient knowledge in order to provide good oral care. Moreover, the perception and conduct of medical and dental students provide great impact on their treatment skills. The adequate knowledge to provide basic oral care instructions will serves as a conduit to promote oral health[11]. Another study in India showed higher mean knowledge scores in dental students as compare to medical students[12]. In a Pakistani study, author showed that medical students were more aware about oral hygiene than dental students (p=0.001) and further significant difference was observed in the knowledge about oral hygiene between pre-clinical and clinical students (p=0.001)[13]. The medical field comprises of wide variety of specialties, hence there is large amount of exposure involved with susceptible patients in medicine comparatively to dental specialty, and thereby students of medicine are anticipated to have at least elementary knowledge of dental care so as to deliver patients with indispensable oral health instruction when required.

Consequently, it is critical for students of dentistry and medicine to have knowledge regarding oral health care for oral care provision leading to public oral health promotion. The advance knowledge of dental diseases among dental students is advantageous to the preservation of patients' oral health and is influential in preventing oral diseases. Hence, it would be beneficial to compare the knowledge of oral health between dental and medical students in Karachi, Pakistan, in order to assess basic lack so as to set their study curriculum focusing on delivering quality oral health knowledge in undergraduate period of education. Therefore the objective of the study was to compare oral health knowledge, attitude and practice scores between medical and dental students of Karachi, Pakistan.

Materials and Methods

It was a cross-sectional study conducted at the private medical and dental college of Karachi, Pakistan from Jul 2018-Jul 2019. Sample size was estimated using WHO sample size calculator taking statistics for knowledge score among medical students as 70.74 ± 16.82[12], margin of error as 3.3% and 95% confidence level. The calculated sample size came out as 100. Total 100 dental and 100 medical students were included in the study. Medical and dental students of any age of either gender who were enrolled in 2nd year of their medical and dental school were recruited in the study by using non-probability convenience sampling technique. Participants who did not give consent were excluded from the study.

Study was conducted after the approval from ethical review committee. Verbal consent was taken

from all the eligible students before data collection. The adapted questionnaire was used[14], which consist of 3 sections to assess knowledge, attitude and practice regarding oral health.

The first section assessed the knowledge of the study participants and included 7 questions on oral hygiene education, frequency of replacing toothbrush, type of toothbrush, brushing timings, choice of toothpaste, amount of toothpaste on your brush and effects of fluoride on teeth. Every right answer was given the score of 1 and score of 0 was assigned for all the wrong answers.

Second section assessed the attitude of medical and dental students and included 6 questions on clean from interdental spaces, use of floss/interdental brush, use of toothpick, use of mouthwash, regular dentist visit and method of tooth brushing. The responses were recorded using 5 point Likert scale (1-5).

Third section included 3 questions regarding practice of medical and dental students on bleeding of gums during tooth brushing, awareness from gum problems and treatment of gum problem. The responses were recorded using 5 point Likert scale (1-5).

The baseline information regarding age and gender of the study participants were also noted. All data was collected in the presence of principal investigator. The confidentiality and privacy of the data was maintained by coding.

SPSS version 23 was used to analyse data. Mean and SD were calculated for quantitative variables like age, knowledge score, attitude score and practice score, whereas frequencies & percentages were calculated for qualitative variables like gender. Independent t test was used to compare knowledge, practice and attitude between dental and medical students. Stratification with respect to gender was also done. A p-value <0.05 was taken as statistically significant.

Results

The mean age of the present study was reported as 22.77 ± 7.89 years. Majority of the students were females (n= 164, 82%) whereas 36 (18%) were males.

Among all the medical students, the high mean score was observed for knowledge of brushing timings (0.90), followed by frequency of replacing toothbrush (0.87). According to attitude, the high mean score for use of floss/interdental brush was reported (4.41) followed by use of toothpick (3.84). According to practice the high mean score was reported for treatment of gum problems as 4.44. Among all the dental students, the high mean score was observed for knowledge of brushing timings, frequency of replacing toothbrush and amount of toothpaste on your brush (0.93). According to attitude, the high mean score for use of mouthwash was reported (4.45) followed by method of tooth brushing (4.35). According to practice the high mean score was reported for treatment of gum problems as 4.51 (Table 1).

The overall knowledge, attitude and practice scores were compared between medical and dental students. Significantly higher knowledge regarding oral health was observed among dental students as compared to medical students (6.34 ± 0.89 vs 5.62 ± 1.04, p= 0.001). Significantly better attitude towards oral health was observed among dental students as compared to medical students (25.90 ± 2.22 vs 23.55 ± 2.63, p= 0.001).Significantly better practice regarding oral health was observed among dental students as compared to medical students (13.33 ± 1.35 vs 12.73 ± 1.80, p= 0.001).

Among males, the knowledge and attitude of dental students (n=12) were significantly high as compared to medical students (n= 24) ($p<0.05$), whereas no significant difference was found between practice score. Among females, the knowledge, attitude and practice score of dental students (n= 88) were significantly high as compared to medical students (n= 76) ($p<0.05$) (Table 3).

Table 1. Descriptive Statistics of Knowledge, Attitude and Practice items

ITEMS	Medical Students	Dental Students
KNOWLEDGE ITEMS	MEAN±SD	MEAN±SD
Oral hygiene education	0.81±0.39	0.89±0.31
Frequency of replacing toothbrush	0.87±0.33	0.93±0.25
Type of toothbrush	0.66±0.47	0.89±0.31
Brushing timings	0.90±0.30	0.93±0.25
Choice of toothpaste	0.81±0.39	0.86±0.34
Amount of toothpaste on your brush	0.75±0.43	0.93±0.25
Effects of fluoride on teeth	0.82±0.38	0.91±0.28
ATTITUDE ITEMS	MEAN±SD	MEAN±SD
Clean from interdental spaces	3.71±1.29	4.27±0.94
Use of floss/interdental brush	3.88±1.38	4.21±1.01
Use of toothpick	3.84±1.30	4.31±1.02
Use of mouthwash	3.82±1.37	4.45±0.74
Regular dentist visit	3.83±1.02	4.31±0.92
Method of tooth brushing	4.47±0.90	4.35±0.84
PRACTICE ITEMS	MEAN±SD	MEAN±SD
Bleeding of gums during tooth brushing	4.16±0.99	4.43±0.85
Awareness from gum problems	4.13±0.91	4.39±0.81
Treatment of gum problems	4.44±0.89	4.51±0.67

Table 2. Comparison of overall knowledge, attitude and practice items between medical and dental students

Outcome	Groups	Mean	SD	P-value
Knowledge	Medical	5.62	1.04	0.001
	Dental	6.34	0.89	
Attitude	Medical	23.55	2.63	0.001
	Dental	25.90	2.22	
Practice	Medical	12.73	1.80	0.001
	Dental	13.33	1.35	

Table 3. Comparison of overall knowledge, attitude and practice between medical and dental students with respect to gender

Gender	Group		n	Mean	SD	P-value
Male	Knowledge	Medical	24	5.50	0.88	0.05
		Dental	12	6.16	1.02	
	Attitude	Medical	24	23.79	2.46	0.001
		Dental	12	26.75	1.65	
	Practice	Medical	24	13.0	1.58	0.433
		Dental	12	13.41	1.24	
Female	Knowledge	Medical	76	5.65	1.08	0.001
		Dental	88	6.36	0.87	
	Attitude	Medical	76	23.47	2.69	0.001
		Dental	88	25.78	2.26	
	Practice	Medical	76	12.64	1.85	0.009
		Dental	88	13.31	1.36	

Discussion

Having dentistry as a separate specialty, medical students lack basic knowledge regarding oral diseases. The medical curriculum is set in a way that incorporate different medical specialties, however medical students are not being taught about oral health and dental diseases. Therefore, the present study has equated the knowledge between medical and dental students regarding oral health. Although, colossal amount of data is available nevertheless paucity of local data is the main reason to conduct the present study.

In various studies, it has been found that dental students sustain higher knowledge as compared to medical students. This is also a justifiable fact about lack of oral health teaching to medical students. In a study, dental students had more knowledge about plaque and different measures to control the disease however medical students did not have sufficient knowledge[8,11,12]. In the current study, higher mean of frequency of tooth brushing and replacement of tooth brush was found in dental students as compare to medical students. The results of present study are also validated by other studies[15-17].

Another study conducted in Lahore[14] and other studies[18] compared oral health knowledge between medical and non-medical students. The result of this study are in disagreement with the current study where in medical students had higher knowledge as compared to non-medical students. The reason for medical students preponderance is because the medical students' had some knowledge reading oral health which might be due to their specialty nonetheless non-medical students were not exposed to any health care knowledge which is justifiable for their lack of knowledge.

In a study regarding comparison of oral health knowledge between medical and dental students, almost seventy percent dental students had knowledge regarding periodontal disease and how does it initiate and affect over all periodontium whereas only fifty percent medical students had knowledge about periodontal disease[11]. Similarly in the present

study, few medical students had known about effects of fluoride on teeth as compared to dental students. Regarding practice between medical and dental students there was no significant difference found in the present study and results are in agreement with Mongolian study[19].

The current study showed that among males, the knowledge and attitude of dental students were significantly high as compared to medical students ($p<0.05$) whereas in other study the findings were in favour of females[13,18,20,21]. There was no significant difference was found between practice score. Among females, the knowledge, attitude and practice score of dental students were significantly high as compared to medical students. On other hand, in the studies[22,23] female showed better health attitudes who were belonging to dental specialty.

The practical strength of the present study was that the target population was not exposed to the clinical years and hence no patient exposure was given to these students. Therefore, the comparison of knowledge is satisfactory between both specialties.

Dental and medical students are vital source in health care paradigm. The knowledge should be adequate between both specialties. The medical curriculum should be set adequate incorporating at least basic oral health knowledge during under graduation. Additional importance should also be given to enhance oral health attitude and practice among medical students. These students are the upcoming health care providers that will act as protagonist in oral health promotion at much larger level.

Conclusion

The study ascertained better knowledge regarding oral health care knowledge in the dental students as compared to the medical students.

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