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RESEARCH ARTICLE

ORAL HEALTH KNOWLEDGE, ATTITUDE AND PRACTICE AMONG MBBS STUDENTS OF GOVT MEDICAL COLLEGE, KOZHIKODE: A CROSS SECTIONAL STUDY

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Abstract

Oral health plays an important role in the overall health of the body. Most of the patients with pain in the oro-facial region make their first contact with a general medical practitioner. Medical professionals receive very little training in addressing oral health issues during their educational programs or elsewhere; thus they display low levels of oral health knowledge and low levels of confidence in its applications. This study was carried out to assess the oral health knowledge, attitude and practice among medical undergraduate students of Govt Medical College, Kozhikode.

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Introduction:-

Oral health plays an important role in the overall health of the body. Most of the patients with pain in the oro-facial region make their first contact with a general medical practitioner. Medical professionals receive very little training in addressing oral health issues during their educational programs or elsewhere; thus they display low levels of oral health knowledge and low levels of confidence in its applications.¹ Various studies reported that the knowledge of medical doctors about dental conditions was not satisfactory. Medical schools' curriculum was found to be inadequately covering diagnosis and management of oral disease.¹ They should also have adequate knowledge about the oral cavity and the dental diseases so as to promote the oral health among public in developing countries.² Medical professionals play an important role in promoting oral public health by encouraging patients to avoid known risk factors for oral diseases and promoting oral hygiene practices.³ They routinely see preschool children prior to the dentists, a unique opportunity to provide dental preventive services and encourage parent awareness of dental checkups.⁴ However it is seen that there is a knowledge gap regarding oral conditions among medical professionals in the medical colleges.⁵

Hence this study was carried out to assess the oral health knowledge, attitude and practice among medical undergraduate students of Govt Medical College, Kozhikode.

Methodology:-

A cross sectional questionnaire-based study was conducted among the undergraduate students of Govt Medical College, Kozhikode. The number of students in each batch is 250; with four batches of students. The sample size

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was calculated with the formula $4pq/d^2$. The prevalence was taken as 25% from the study quoted below.⁶ Percentage of error was set at 3%. Hence the total sample size was calculated as 833. The entire undergraduate population was included in the study. Incomplete questionnaires and students who were not present in the class during the distribution of questionnaire were excluded.

The study was conducted after obtaining permission from Ethical Committee, Government Dental College, Kozhikode. A structured and close-ended questionnaire was used to assess the knowledge, attitude and practice level of the respondents. Written consent was taken from the students before filling the questionnaire. The questionnaire had 30 questions and was divided into 4 parts. 1st part obtained baseline information about the participants; including age, gender and year. 2nd part of the questionnaire had 15 questions to collect information about the knowledge aspect of the participants. Options were given on Likert scale. The respondents had to choose only one of the options from 'Agree', 'Disagree', and 'Don't know'. 3rd part contained 7 and 9 questions respectively from the attitude and practice part.

The questionnaire in this study was similar to the one conducted by Sujatha et al.⁶ and Kumar et al.⁷, among medical undergraduate students in Davengere and Eastern India respectively.

Statistical Analysis

The obtained data were analysed using MS Excel and Statistical Package for the Social Sciences (SPSS) software version 25.0 (IBM SPSS-Chicago, IL:SPSS Inc.). Year wise comparison of the knowledge and attitude scores were carried out using One way ANOVA. Practice questions and other categorical variables were analysed using Chi-square test. The t-test was used to compare the mean scores of knowledge and attitude among male and female students. All tests were carried out with 5% level of significance. p-value of 0.05 was used as a cut-off level for statistical significance.

Results:-

Out of 1000 students who responded positively, 318(31.8%) were males and 682 (68.2%) were females. The number students studying in various years and their frequency tables are shown in Table 1.

Table 1:-

YEAR		Frequency	Percent	Cumulative Percent
	First Year	243	24.3	24.3
	Second Year	254	25.4	49.7
	Third Year	250	25.0	74.7
	Fourth Year	253	25.3	100.0
	Total	1000	100.0	

The observations in Table 2 shows that among the students who have responded, 56.3% had knowledge score in the range of 11-14. 38.7% had knowledge score in the range of 7-10. 5% responded with knowledge score of less than 7. Among the students who have responded, 35.1% had attitude score in the range of 5-6. 56.2% had attitude score in the range 3-4. 8.7% responded with attitude score of less than 2.

Table 2:-

Knowledge Category		Frequency	Percent	Cumulative Percent
	11-14	563	56.3	56.3
	7-10	387	38.7	95.0
	Less than 7	50	5.0	100.0
	Total	1000	100.0	
Attitude Category		Frequency	Percent	Cumulative Percent
Valid	5-6	351	35.1	35.1
	3-4	562	56.2	91.3
	0-2	87	8.7	100.0

	Total	1000	100.0	
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Table 3:-

	GENDER	Mean	Std. Deviation	Minimum	Maximum	t statistic	p-value	Inference
KNOWLEDGE SCORE	Male	10.82	2.142	3	14	0.933	0.351	There is no significant difference
	Female	10.67	2.645	0	14			
ATTITUDE SCORE	Male	4.07	1.08	0	6	0.131	0.903	There is no significant difference
	Female	4.06	1.324	0	6			

The analysis of the data based on gender shows that there exists no significant difference in the knowledge and attitude scores among male and female students as shown in Table 3.

Analysis Based On Year

Table 4:-Knowledge Category.

Crosstab			Knowledge Category			Total
			11-14	7-10	Less than 7	
YEAR	First Year	Count	142	75	26	243
		% within YEAR	58.4%	30.9%	10.7%	100.0%
		% within Knowledge Category	25.2%	19.4%	52.0%	24.3%
	Second Year	Count	87	147	20	254
		% within YEAR	34.3%	57.9%	7.9%	100.0%
		% within Knowledge Category	15.5%	38.0%	40.0%	25.4%
	Third Year	Count	161	87	2	250
		% within YEAR	64.4%	34.8%	0.8%	100.0%
		% within Knowledge Category	28.6%	22.5%	4.0%	25.0%
	Fourth Year	Count	173	78	2	253
		% within YEAR	68.4%	30.8%	0.8%	100.0%
		% within Knowledge Category	30.7%	20.2%	4.0%	25.3%
Total	Count	563	387	50	1000	
	% within YEAR	56.3%	38.7%	5.0%	100.0%	
	% within Knowledge Category	100.0%	100.0%	100.0%	100.0%	

The analysis of the knowledge data shows that among the first years 142 students out of 243 (58.4%) had a knowledge score of 11-14. Among the second years 87 out of 254 (34.3%) had knowledge score of 11-14. 161 out of 250 (64.4%) third year students and 173 out of 253 (68.4%) final year students also fall under this knowledge score as shown in Table 4.

Attitude Category

Table 5:-

Crosstab			Attitude Category			Total
			5-6	3-4	0-2	
YEAR	First Year	Count	143	67	33	243
		% within YEAR	58.8%	27.6%	13.6%	100.0%
		% within Attitude Category	40.7%	11.9%	37.9%	24.3%

	Second Year	Count	64	145	45	254
		% within YEAR	25.2%	57.1%	17.7%	100.0%
		% within Attitude Category	18.2%	25.8%	51.7%	25.4%
	Third Year	Count	97	148	5	250
		% within YEAR	38.8%	59.2%	2.0%	100.0%
		% within Attitude Category	27.6%	26.3%	5.7%	25.0%
	Fourth Year	Count	47	202	4	253
		% within YEAR	18.6%	79.8%	1.6%	100.0%
		% within Attitude Category	13.4%	35.9%	4.6%	25.3%
Total	Count	351	562	87	1000	
	% within YEAR	35.1%	56.2%	8.7%	100.0%	
	% within Attitude Category	100.0%	100.0%	100.0%	100.0%	

The analysis of the attitude data in table 5 shows that among the first years 143 students out of 243 (58.8%) had an attitude score of 5-6. Among the second years 64 out of 254 (25.2%) had attitude score of 5-6. 97 out of 250 (38.8%) third year students and 47 out of 253 (18.6%) final year students also fall under this attitude score.

Comparison Of Each Years Based On Their Practice Of Oral Health

Table 6:-

	1 st year	2 nd year	3 rd year	4 th year	P
Frequency of visiting the dentist regularly	35	81.5	38	32.4	<0.001
Frequency of replacing toothbrush (≤3 months)	42.8	16.9	25.2	38.3	0.004
Method of cleaning Tooth brush and paste	74.5	50	91.6	93.7	<0.001
Tooth brush and powder	21.8	48.8	8.4	6.3	<0.001
Miswak/chew stick	0.8	0	0	0	0.619
Reason for visit					
For pain with teeth, gums or mouth	26.3	37	22.4	26.9	0.023
For treatment/follow up treatment	21.8	14.6	20.8	20.6	0.061
Routine check-up/treatment	14.4	44.9	14.4	12.3	0.003
Orthodontic treatment	12.3	3.5	24.4	21.7	0.002
Don't remember	25.1	0	18	18.6	<0.001
Oral hygiene methods besides tooth brushing					
Dental floss	23.9	56.7	11.2	5.5	<0.001
Interdental brush	18.5	36.6	4.4	7.5	<0.001
Mouth wash	16	4.7	16.8	26.5	<0.001
None	41.6	2	67.6	60.5	<0.001
Type of tooth paste					
Non fluoridated	30.5	85	8.4	12.3	<0.001
Fluoridated	36.6	8.3	56.8	70.8	<0.001
Don't know	32.9	6.7	34.8	17	<0.001
Frequency of brushing (twice daily)	37	32.7	44.8	54.5	<0.001
Rinsing of mouth after meals	81.1	68.1	95.6	95.7	<0.001
Cleaning of tongue (Everyday)	63	83.1	53.6	54.9	<0.001
^a Pearson's Chi-					

squaretest,boldnumbersmean $P < 0.05$					
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When oral health practices were analysed, the following observations were noted. Out of 1000 students, 46.9% have visited the dentist in the last 6 months. 15.3% have visited the dentist between 6 to 12 months, 29.5% have visited the dentist between one and five years and 8.3% have never visited the dentist for any reason. The main reason for visiting the dentist was for pain associated with the teeth, gums or mouth (28.2%). 19.4% visited the dentist for follow up treatment. 21.6% visited the dentist for routine dental check-up. 15.5% visited for orthodontic treatment.

Regarding tooth brushing habits, 77.4% uses tooth brush and paste for brushing their teeth, 21.4% uses tooth brush and powder. 1% of students use charcoal for cleaning their teeth and 0.2% use chew sticks/miswak. Among these 34.2% use non fluoridated tooth paste and 43.1% use fluoridated tooth paste. 22.7% does not know the type of toothpaste that they have been using. 30.7% students change their tooth brush after using it for less than 3 months. 45.7% change it within 3-6 months and 23.6% use it for more than 6 months. 46.3% clean their teeth once daily, 42.3% brush their teeth twice daily. 11.4% clean their teeth more than twice daily.

Flossing habits in our study show that 24.4% use dental floss and 16.8% use interdental brush as interdental aid. 16% of students use mouth wash on a regular basis and 42.8% do not use any interdental aids. 63.7% clean their tongue everyday and 36.1% clean their tongue occasionally. 85.1% rinse their mouth after meals and 14.9% do not rinse their mouth after meals.

Discussion:-

Health professionals play an important role in providing knowledge regarding oral health and its significance among general public. Medical students should possess high level of awareness for their own oral health care so that this attitude can be instilled among patients and community at large. In the present study, the oral health knowledge, attitude and practice among MBBS students of Govt Medical College, Kozhikode was assessed. The knowledge, attitude and oral hygiene practices with respect to gender and year of study were analysed.

The methodological strength of the present study was that it was the first-hand assessment of oral health knowledge, attitude, and practice among medical students conducted in Government medical college, Kozhikode with an adequate sample size. There were no controversies raised by the study.

The analysis of data based on gender showed that there exists no significant difference in the knowledge and attitude scores among male and female students. This is in accordance with study conducted by Tseevenjav et al,⁸ where he found that student's gender had no effect on any of the parameters studied. This is in contrast with the studies done by Kumar et al⁷ and Betul Rahman et al⁹ where significant difference between male and female students were observed. Among the questions regarding oral hygiene practice, it was noted that there exists significant association with gender for all the practice questions asked with p value < 0.001 .

While analysing the knowledge score among various years it was found out that, 30.7% of final years showed maximum knowledge score, followed by 3rd years (28.6%), 1st years (25.2%) and 2nd years (15.5%). When the attitude scores among various years were analysed it was found out that, 40.7% of first years showed maximum attitude score, followed by 3rd years (27.6%), 2nd years (18.2%) and final years (13.4%).

When oral hygiene practices were among the students were analysed in this study, it was observed that 81.5% of second year students visit the dentist regularly when compared to third (38%), first (35%) and final year (32.4%) students. The main reason for visiting the dentist was associated with dental pain. This is in accordance with the studies conducted by Suman Madan et al¹⁰ and Muhammed Ashraf Naziret al.^{11,12}

First year students replace their tooth brush more regularly within a period of 3 months (42.8%). Method of cleaning their teeth was found to be with tooth brush and paste in 93.7% of final years which is the highest followed by 91.6% of third years, 74.5% of first years and 50% of third year students. This was also seen in the study conducted by Suman Madan et al¹⁰ among undergraduate students of Dayalbagh Educational Institute, Agra

The use of interdental aids form an integral part in maintaining oral health. It was seen that 56.7% of second years practice flossing and 30.6% use interdental brush. This was the highest among the different batches. These findings are similar to a study conducted by Jayadevan Sreedaran et al¹³ among adolescents in Kerala where they found out

that 58% of them used interdental aids. In a similar study done by Peker et al¹⁴ it was found that 16% of the students floss their teeth regularly. Mouthwash was used by 26.5% of final years, followed by 16.8% of 3rd years, 16% of first years and 4.7% of 2nd years. 70.8% of final years used fluoridated tooth paste, followed by 56.8% of 3rd years, 36.3% of 1st years and 8.3% of 2nd years. These findings are similar to the study done by Simiyu Benjamin et al.¹⁵

54.5% of final years brush their teeth twice daily. 44.8% of 3rd years brush their teeth twice daily followed by 37% of first years and 37.2% of 2nd years. This is in accordance with the study conducted by Ansari et al.¹⁶ Cleaning of tongue was done by 83.1% of second years followed by 1st years (63%), final years (54.9%) and 3rd years (53.6%).

Conclusion:-

Oral health is an essential component of general health and well-being of an individual. Oral cavity and its surrounding structures that are free of any diseases is indicative of good oral health. This also helps to maintain good quality of life thereby enabling good oral function. Dental students specialize in diseases of oral cavity and surrounding structures, and are hence believed to have good knowledge, attitude and practice regarding oral health. But medical students are far more likely to encounter underserved and vulnerable populations than dental students.¹⁷ They should have optimal knowledge regarding oral health so that they can provide the required oral health education and guide or refer to a dental surgeon as and when required.

Government Medical College, Kozhikode is a premier medical college located in the city of Kozhikode in Kerala. It was established in 1957 as the second medical college in Kerala. Since then the institution has grown into a premier centre of medical education in the state. This college and allied institutions serve 40% of the population of Kerala ranging from almost 5 districts in the state. Hence it becomes imperative to know the level of knowledge and attitude towards oral health exhibited by the undergraduate students. It was also assessed whether there was any improvement in the knowledge score over a period of four-year study. From our study it was found out that the maximum knowledge score was exhibited by final years (30.7%). This could be attributed to dental posting that the students have to undergo as a part of their medical curriculum. But surprisingly, their attitude score was lower than the first years and it needs to be improved.

There was no difference in the knowledge and attitude score with respect to gender. But there was significant association with gender in the practice of oral health. This has been attributed to the positive self-care attitudes for internal psychological reasons to improve their appearance and self esteem in case of female undergraduate students. Only limitation of this study is that, even though the confidentiality is maintained, scores depend on self-reported data, which may be over- or underreported due to social desirability.

Thus, oral health care needs to be addressed by the combined efforts of dental and medical professionals and should be integrated into comprehensive health-promoting strategies and practices.¹⁸ Because today's students will provide health services in the future and will be responsible for public oral health education, it is important to study their oral health knowledge, attitude, and practice. Concrete measures should be taken to improve the knowledge imparted regarding dental health and diseases and also to instill a positive dental attitude and practice in their medical curriculum.

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