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RESEARCH ARTICLE

ORAL HEALTH AWARENESS AMONG DIFFERENT PROFESSIONALS

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Abstract

Oral health is an integral part of general health and a valuable asset for any individual. Oral health has always remained a neglected entity. People have underestimated consequences of bad oral health, which have led to bigger problems which later on become difficult to treat. Unawareness regarding our oro‑dental health highly depends on one's educational level. Preventive oral health education is in a transition stage in India. Despite the current emphasis on prevention in dental education, and although there have been some studies of the attitude, habits, and awareness among dental students and dentist, very few studies have focused on the orientation of the attitude, knowledge and awareness among professions other than dental like Medical, Nursing, Physiotherapy, Pharmacy, Engineering and MBA.

To our knowledge, no study exists on the attitude, habits, and awareness towards oral and dental health care among different professionals like Dental, Medical, Nursing, Physiotherapy, Pharmacy, Engineering and MBA in Meerut city.

The article assessing the **attitude, habits, and awareness** about oral and dental health care amongst professional students is sparse. Hence, this study was conducted to assess the level oral and dental health attitude**, habits and awareness** amongst different professional students in Meerut, Uttar Pradesh during the academic year 2014-15.

Introduction:-

"Oral Health for Healthy life", was the theme for World Health Day by WHO for 1998[1]. No one can be truly healthy unless he or she is free from the burden of oral and craniofacial diseases and conditions [2].Oral health can be defined as a standard of health of the oral and related tissues, which enables an individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contributes to general well-being.[3] Oral health diseases are detrimental to the quality of life during childhood through old age and can have an impact on self-esteem, eating ability, nutrition, and health. They are associated with considerable pain, anxiety and impaired social functioning [4, 5]. Among the dental diseases, dental caries and the periodontal problem is more prevalence and it is an important component of global disease burden. Oral health has been documented as equally important as general

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health. Moreover, knowledge about oral health has been cited as an important factor determines overall health. [6] Oral health is a highly personalized concept, the awareness of which highly relies on an individual's culture and socioeconomic status [7].The prevention of dental disease depends upon the involvement of the community, the **professional** and an individual. Oral health of an individual depends upon oral and dental health **attitude, habits and awareness**. **Attitudes** naturally reflect their own experiences, cultural perceptions, familial beliefs and other life situations and have a strong influence on oral health behavior [8].**Habits** reflect their practice of adapting the various methods of oral hygiene in routine day to day life (e.g. Brushing habits, Flossing etc). **Awareness** will reflect how much they are aware of the oral health today. Studies have shown that there is an association between increased knowledge and better oral health [9, 10].

The article assessing the **attitude, habits, and awareness** about oral and dental health care amongst professional students is sparse. Hence, this study was conducted to assess the level oral and dental health attitude**, habits and awareness** amongst different professional students in Meerut, Uttar Pradesh during the academic year 2014-15.

Objective:-
Professionals in our society in its **attitude, habits, and awareness** toward oral and dental health have been giving it less importance as compared to general health. Also, Dental public health programmers have not been able to achieve the depth and penetration into society required to bring about the change in societal attitude.
Objective
1. To evaluate the oral health knowledge and awareness among students of different professional colleges of Meerut city.
2. To assess the overall attitude and habits towards dental health care among different professionals.
3. To prepare a standardized oral health questionnaire covering all aspects of dental health attitude, habits and awareness.

Materials and Method:-

Study subjects and data collection:-
This was a cross-sectional study done over a period of 3 months from November 2014 to February 2015. To obtain representative samples of students of different professionals' colleges of Meerut, a simple random sampling approach was used. Seven different professional colleges of Meerut, Uttar Pradesh were selected randomly for the purpose of study during the academic year of 2014-15. The professional students included in the study were from Medical, Dental, Physiotherapy, Nursing, Pharmacy, Engineering and MBA in the age group of 19-24 years.

Sample size calculation:-
The sample size for the study consisted of 2100 professionals in seven different professional colleges (300 students as a sample taken from each professional college totaling 2100 subjects) of Meerut city during the academic year 2014-15. The majority of the filled questionnaires were collected immediately on the day of data collection.

Development of the questionnaire:-
Questionnaire (Appendix) used in this study was developed from the previous literature [46-51] designed in English, which was validated, and modifications were then made accordingly before the final questionnaires were administered.

The questionnaire had three parts: Part one consisted of attitude based questions containing five subparts which included the visit to a dentist, cleaning the teeth and general opinion on dental treatment. Part two consisted of one habit based question containing eleven sub-parts which assessed the habits on cleaning the teeth using a toothbrush, floss, regular change of toothbrush, the technique of brushing, cleaning the tongue and using mouthwashes. Part three consisted of eight awareness based questions assessing the knowledge on dental plaque, bleeding gums, dental caries, oral cancer, and tobacco.

Statistical analysis :-
All the filled questionnaires were coded and data were entered into Microsoft Excel sheet of Microsoft Windows 2007. Results were expressed using p-value and percentages of respondents for each question were analyzed using statistical package for social science (SPSS) version 17 software.

Results:-

The data was processed and analyzed by means of computerized SPSS software 17 version. Frequency tables, percentage, and cross-tables were generated. Chi-square test was used to identify significant relations and differences between oral health knowledge, attitude, and habits among different professionals' students. Statistical significance was based on probability values of less than 0.001 (P<0.001).

Part 1:- Attitude Based Questions

Table 1:-

Question 1.	**A) HOW OFTEN YOU VISIT DENTIST?**							
	Dental	**Medical**	**Nursing**	**Pharmacy**	**Physiotherapy**	**MBA**	**Engineering**	**Total**
i) Only in Problem	0.57	2.42	5.09	8.00	4.68	10.62	10.14	41.52
ii) Once in 3 month	1.44	1.49	3.26	2.04	2.97	1.04	0.62	12.86
iii) Once in 6	11.81	8.76	3.00	2.52	3.62	1.41	2.09	33.21
month	0.86	1.63	2.56	1.70	3.05	1.19	1.42	12.41
iv) Once in Year								
	χ^2(Chi-Square Test) = 842.896, Degree of Freedom=18, Pvalue= <0.001 Highly Significance for *Once in Problem*.							
	B) WHEN DID YOU VISIT LAST?							
i. Never	1.10	2.05	5.88	6.08	6.14	6.84	8.24	36.33
ii. In last 3 months	1.90	2.67	1.38	0.76	2.19	2.00	1.38	12.28
iii. In last 6 months	7.52	5.76	1.86	2.01	2.33	3.38	2.33	25.19
iv. More than year	3.64	3.82	5.29	4.72	3.62	2.67	2.43	26.19
	χ^2(Chi-Square Test)= 394.103, Degree of Freedom=18, Pvalue=<0.001 Highly Significance for *Never visit the dentist*.							
	C) REASON FOR VISITING DENTIST?							
i) Pain	2.05	3.76	3.9	3.38	3.29	4.48	3.52	24.38
ii) Checkup	0.71	1.38	1.00	1.10	0.86	0.62	0.37	6.04
iii) RCT	2.05	2.29	2.24	2.81	2.90	2.23	1.90	16.42
iv) Scaling	1.57	2.33	0.33	0.62	0.90	1.01	1.38	8.14
v) Crown and	0.52	0.09	0.1	0.14	0.10	0.52	0.14	1.61
Bridge	4.14	2.33	3.67	3.29	3.57	3.19	2.33	22.52
vi) Filling	1.48	1.19	0.38	0.19	0.29	0.09	0.43	4.04
vii) Ortho T/t	1.76	0.19	2.43	2.83	2.44	1.91	3.62	15.19
viii) Extraction	0	0	0.24	0.33	0.14	0.28	0.66	1.65
ix) Any Other								
	χ^2(Chi-Square Test)= 259.256, Degree of Freedom=48, Pvalue= <0.001 Highly Significance for *Only in dental pain.*							
	D) REASON BEHIND NOT VISITING DENTIST?							
i) Fear of Drill	0	5.38	4.33	3.71	4.06	4.72	5.80	28
ii) Fear of Needle	2.57	2.57	1.48	4.86	4.24	5.37	5.76	26.85
iii) Lack of Time	1.33	4	3.76	1.76	1.43	1.24	0.57	14.09
iv) High Cost	0	0.62	3.19	2.33	1.95	2.34	1.33	11.76
v) Any Other	10.38	1.71	1.52	1.61	0.71	0.77	2.58	19.28
	χ^2(Chi-Square Test)= 939.332, Degree of Freedom=24, Pvalue= <0.001 Highly Significance for *Fear of drill.*							
	E) DO YOU WANT TO GET YOUR TEETH CLEAN?							
i) Yes	14.29	14.1	11.95	13.24	12.67	12.67	13.29	92.21
ii)No	0	0.10	2.33	1.05	1.62	1.62	1.06	7.78
	χ^2(Chi-Square Test)= 88.627, Degree of Freedom=6, Pvalue= <0.001 Highly Significance for *wants to get clean teeth*							

Part 2:- Habits Based Question

Table 2:-

Question 2.	**A) DO YOU CLEAN YOUR TEETH?**							
	Dental	**Medical**	**Nursing**	**Pharmacy**	**Physiotherapy**	**MBA**	**Engineering**	**Total**

i) Yes	14.28	14.28	14.28	14.28	14.28	14.28	14.28	99.96
ii) No	0	0	0	0	0	0	0	0
	B) IF YES, THEN HOW DO YOU CLEAN YOUR TEETH?							
i. Neem stick	0	0	0.09	0.05	0.05	0.05	0.14	0.38
ii. Charchol	0	0	0	0	0	0	0.05	0.05
iii. Finger	0	0	0	0	0.09	0	0.09	0.18
iv. Toothpaste &	14.28	14.09	13.38	13.71	13.48	13.76	11.86	94.56
Brush	0	0.19	1.05	0.38	0.52	0.48	0.62	3.24
v. Tooth power	0	0	0.44	0.24	0.64	0	0.09	1.41
vi.Finger & Salt	0	0	0	0	0	0	0	0
vii. Any Other								
	χ^2(Chi-Square Test)= 65.087, Degree of Freedom=30, Pvalue= <0.001 **Highly Significance for *Neemstick***							
	C) HOW OFTEN DO YOU CLEAN YOUR TEETH?							
i) Once	8.43	9.90	12.05	11.80	11.67	11.86	11.95	77.66
ii) Twice	5.61	4.24	2.19	2.43	2.52	2.33	2.23	21.57
iii) More than twice	0.24	0.14	0.05	0.05	0.09	0.09	0.09	0.76
iv) Occasionally	0	0	0	0	0	0	0	0
	χ^2(Chi-Square Test)= 99.024, Degree of Freedom=12, Pvalue= <0.001 **Highly Significance for *more than twice brushing***							
	D) WHAT TYPE OF BRUSH DO YOU USE?							
i) Soft	9	5.80	4.24	4.33	5.43	4.24	4.10	37.14
ii) Medium	5.05	4.71	4.01	4.38	3	3.71	3.61	28.47
iii) Hard	0.24	3.14	3.19	3.24	2.81	3.38	3.42	19.42
iv) Never Noticed	0	0.62	2.76	2.42	3.05	2.95	3.14	14.95
	χ^2(Chi-Square Test)= 244.101, Degree of Freedom=18, Pvalue= <0.001 **Highly Significance for *Never noticed.***							
	E) WHICH TECHNIQUE DO YOU USE FOR BRUSHING?							
i) Horizontal	6	9.90	9.47	9.33	10.04	10.29	9.54	64.57
ii) Vertical	4.10	2.33	3.57	3.33	2.80	2.33	3.44	21.90
iii) Circular	0.29	0.09	0	0.14	0.05	0.04	0.07	0.68
iv) Combined	3.9	1.95	1.23	1.47	1.38	1.63	1.29	12.85
	χ^2(Chi-Square Test)= 119.871, Degree of Freedom=18, Pvalue= <0.001 **Highly Significance for *Combined***							

Part 2:- Habits Based Question

Table 2:- (Continued)

Question 2.	**F) DO YOU CHANGE YOUR BRUSH?**							
	Dental	**Medical**	**Nursing**	**Pharmacy**	**Physiotherapy**	**MBA**	**Engineering**	**Total**
i) Yes	14.28	14.28	14.28	14.28	14.28	14.28	14.28	99.96
ii) No	0	0	0	0	0	0	0	0
	G) IF YES, THEN HOW OFTEN DO YOU CHANGE THE BRUSH?							
i) When useless	3.80	6.95	8.62	7.71	8.52	8.97	8.19	52.76
ii) Once in 3	7.80	3.43	2.86	3.38	1.85	1.29	2.19	22.80
months	2.61	3.80	2.57	3.04	3.76	3.85	3.75	23.38
iii) Once in 6	0.04	0.10	0.24	0.14	0.14	0.19	0.19	1.04
months								
iv) Once in year								
	χ^2(Chi-Square Test)= 248.429, Degree of Freedom=18, Pvalue= <0.001 **Highly Significance when useless**							
	H) FOR HOW LONG DO YOU BRUSH YOUR TEETH?							
i. Less than 1min	4.33	6.48	6	6.33	6.09	5.62	5.87	40.72
ii. 1-2 min	9.48	7.71	8.19	7.86	8.04	8.57	8.24	58.09

iii. Greater than 2 min	0.47	0.09	0.09	0.09	0.17	0.09	0.19	1.19
	χ^2(Chi-Square Test)= 30.759, Degree of Freedom=12, Pvalue= <0.002 Significant for brushing less than 1 minute							
	I) DO YOU USE ANY INTERDENTAL AIDS?							
i) Floss ii) Toothpick iii) Interdental Brush iv) Nothing	1.90 2.90 0.49 9	0.67 1.86 0.09 11.67	0.09 1.71 0 12.48	0.14 1.95 0 12.19	0.05 1.86 0. 12.38	0.29 1.57 0 12.43	0.05 1.48 0 12.75	3.19 13.33 0.58 82.9
	χ^2(Chi-Square Test)= 207.317, Degree of Freedom=18, Pvalue= <0.001 Highly Significance for Flossing							
	J) DO YOU CLEAN YOUR TONGUE?							
i) Yes ii) No	13.62 0.67	11.71 2.57	9.57 4.71	9.33 4.95	10.04 4.23	9.81 4.48	9.49 4.81	73.57 26.42
	χ^2(Chi-Square Test)= 144.576, Degree of Freedom=6, Pvalue= <0.001 Highly Significance for clean tongue							
	K) DO YOU USE MOUTHWASH?							
i) Yes ii) No	8.67 5.62	4.24 10.4	1.71 12.48	4.09 10.19	1.95 12.13	2.57 11.76	2 12.18	25.23 74.76
	χ^2(Chi-Square Test)= 279.551, Degree of Freedom=6, Pvalue= <0.001 Highly Significance for using Mouthwashes.							

Part 3:- Awareness Based Questions

Table 3:-

Question 3.	**A) HAVE YOU EVER NOTICED BLEEDING IN YOUR GUMS?**							
	Dental	**Medical**	**Nursing**	**Pharmacy**	**Physiotherapy**	**MBA**	**Engineering**	**Total**
i) Yes ii) No	9.63 5.04	9.87 4.71	12.90 1.38	12.57 2	11.37 1.98	11.76 2.52	12.80 1.47	80.90 19.1
	χ^2(Chi-Square Test)= 132.079, Degree of Freedom=6, Pvalue= <0.001 Highly Significance for *not notice bleeding.*							
Question 3.	**B) BLEEDING GUMS MEANS INFLAMED GINGIVA?**							
i. Yes ii. No	13.76 0.52	13.80 0.47	11.42 2.86	12.33 1.95	12.76 1.52	11.61 2.66	11.79 2.55	87.47 12.53
	χ^2(Chi-Square Test)= 78.796, Degree of Freedom=6, Pvalue= <0.001 Highly Significance for *no inflamed gingival.*							
	C) WHAT DOES PLAQUE MEAN?							
i) Soft debris on teeth ii) Staining on teeth iii) Hard debris on teeth iv) Do not know	13.33 0.57 0.41 0.23	3.76 1 1.38 8.14	4 1.23 1.61 7.42	3.42 2 1.80 7.04	3.23 1.76 2.76 6.47	2.04 2.42 1.38 8.42	1.85 1.76 1.66 8.90	31.63 10.74 11 46.62
	χ^2(Chi-Square Test)= 685.827, Degree of Freedom=18, Pvalue= <0.001 Highly Significance for *do not know about plaque.*							
Question 4.	**A) DO YOU KNOW ABOUT CARIES?**							
i) Yes ii) No	14.28 0	14.28 0	11.07 2.80	11.19 3.09	11.80 3.87	10.14 4.14	10.5 4.24	83.23 16.77
	χ^2(Chi-Square Test)= 195.892, Degree of Freedom=6, Pvalue= <0.001 Highly Significance for *not knowing about dental caries.*							
Question 4.	**B) DO YOU KNOW ABOUT FLUORIDATED TOOTHPASTE?**							
i. Yes ii. No	14.28 0	13.28 1	8.90 5.38	13.85 0.42	9.09 5.19	4.66 9.64	3.74 10.57	67.80 32.20
	χ^2(Chi-Square Test)= 736.198, Degree of Freedom=6, Pvalue= <0.001							

	Highly Significance for *not knowing about fluoridated toothpaste*							
Question 4.	**C) SWEET AFFECTS THE TEETH ADVERSELY?**							
i) Yes	14.28	14.28	14.28	14.28	14.28	12.71	12.50	96.61
ii) No	0	0	0	0	0	1.52	1.86	3.38
	κ^2(Chi-Square Test)= 186.211, Degree of Freedom=6, Pvalue= <0.001 **Highly Significance for *sweet not affecting teeth.***							

Part 3:- Awareness Based Questions

Table 3:- (Continued)

Question 5.	**A) EARLY DETECTION OF MOUTH CANCER CAN IMPROVE CHANCES OF CARE?**							
	Dental	**Medical**	**Nursing**	**Pharmacy**	**Physiotherapy**	**MBA**	**Engineering**	**Total**
i) Yes	**14.28**	**14.28**	**14**	**14.09**	**14.28**	**14.14**	**12.73**	**97.82**
ii) No	**0**	**0**	**0.28**	**0.19**	**0**	**0.14**	**1.59**	
	κ^2(Chi-Square Test)= 131.889, Degree of Freedom=6, Pvalue= <0.001 **Highly Significance for *not improving chances of care***							
Question 5.	**B) CHANGES IN LIFESTYLE CAN REDUCE THE RISK OF DEVELOPMENT OF ORAL CANCER?**							
i) Yes	**14.28**	**14.28**	**14.28**	**14.09**	**14.28**	**11.49**	**11.82**	**94.71**
ii) No	**0**	**0**	**0**	**0**	**0**	**2.81**	**2.48**	**5.29**
Question 6.	**A) TOBACCO IS THE ONLY RISK FACTOR FOR ORAL CANCER?**							
i) Agree	5.28	6.76	9.48	8.14	8.71	9.54	9.09	57
ii) Disagree	9	6.95	2.14	2.95	2.66	0.86	2.77	27.33
iii) Don't Know	0	0.57	2.67	3.19	2.90	3.90	2.43	15.66
	κ^2(Chi-Square Test)= 428.893, Degree of Freedom=12, Pvalue= <0.001 **Highly Significance for *TOBACCO is the only risk factor for oral cancer.***							
Question 6.	**B) SMOKELESS FORM CAN CAUSE MOUTH CANCER?**							
i. Yes	13.57	9.38	9.28	9.47	8.86	8.32	8.78	67.66
ii. No	0.71	4.90	5	4.81	5.43	5.67	5.81	32.33
	κ^2(Chi-Square Test)= 125.509, Degree of Freedom=6, Pvalue= <0.001 **Highly Significance for the *smokeless form can cause mouth cancer.***							
Question 7.	**A) SMOKING FORM CAN CAUSE MOUTH CANCER?**							
i) Yes	14.28	13.38	13.23	13.38	13.14	12.19	12.44	92.04
ii) No	0	0.90	1.04	0.90	1.14	2.09	1.88	7.95
	κ^2(Chi-Square Test)= 57.143, Degree of Freedom=6, Pvalue= <0.001 **Highly Significance for *smoking can cause mouth cancer***							
Question 7.	**B) CAN SMOKING CAUSES LUNG CANCER?**							
i. Yes	14.28	11.90	13.57	13.42	12.90	13.62	11.88	91.57
ii. No	0	2.38	0.71	0.86	1.380	0.66	2.41	8.
	κ^2(Chi-Square Test)= 95.508, Degree of Freedom=6, Pvalue= <0.001 **Highly Significance for *smoking can cause lung cancer.***							
Question 8.	**CERTAIN SYSTEMIC DISEASES CAN MANIFEST IN THE ORAL CAVITY?**							
i. Agree	12.80	8.28	7.57	8.52	7.81	7.14	7.49	59.61
ii. Disagree	0	0.48	0.95	0.57	1.43	0.90	1.09	5.42
iii. Don't Know	1.48	5.52	5.76	5.19	5.05	6.24	5.71	34.95

	χ^2(Chi-Square Test)= 156.37 , Degree of Freedom=12, Pvalue= <0.001 **Highly Significance that systemic disease can manifest in the oral cavity.**

Part 3:- Awareness Based Questions
Table 3;- (Continued)

Question 9.		**A) DENTAL CARE SHOULD BE STARTED EVEN BEFORE BIRTH OF A CHILD PRENATAL CARE?**							
		Dental	**Medical**	**Nursing**	**Pharmacy**	**Physiotherapy**	**MBA**	**Engineering**	**Total**
i.	Agree	13.57	7.8	3.19	4.71	4.68	1.76	0.43	36.14
ii.	Disagree	0.47	3.71	6.32	3.62	2.63	2.29	3.24	22.28
iii.	Don't Know	0.24	2.77	4.77	5.95	6.97	10.24	10.63	41.57
		χ^2(Chi-Square Test)= 286.151, Degree of Freedom=12, Pvalue= <0.001 **Highly Significance for *not knowing that dental care should be started even before the birth of a child prenatal care.***							
Question 10.		**ORAL HEALTH HAS AN INFLUENCE ON THE OVERALL QUALITY OF LIFE?**							
i)	Yes	14.28	6.26	3.27	3.86	2.37	1.38	1.86	33.28
ii)	No	0	8.06	11.01	10.42	11.91	12.9	12.42	66.72
		χ^2(Chi-Square Test)= 166.608, Degree of Freedom=6, Pvalue= <0.001 **Highly Significance for *oral cancer has an influence on the overall quality of life.***							

Discussion:-

Oral health is an integral part of general health and a valuable asset for any individual. Oral health has always remained a neglected entity. People have underestimated consequences of bad oral health, which have led to bigger problems which later on become difficult to treat. Unawareness regarding our oro‑dental health highly depends on one's educational level.

Preventive oral health education is in a transition stage in India [52]. Despite the current emphasis on prevention in dental education, and although there have been some studies of the attitude, habits, and awareness among dental students and dentist, very few studies have focused on the orientation of the attitude, knowledge and awareness among professions other than dental like Medical, Nursing, Physiotherapy, Pharmacy, Engineering and MBA.

To our knowledge, no study exists on the attitude, habits, and awareness towards oral and dental healthcare among different professionals like Dental, Medical, Nursing, Physiotherapy, Pharmacy, Engineering and MBA in Meerut city. Hence this study presented a comprehensive overview of the oral and dental health care among different professionals.

Oral Health knowledge creates a sense for each individual to adopt self-care practices. But it is not necessarily related to better health behavior. [53]

In India, television media reaches rural and urban areas. It plays the major roles in creating Oral Health awareness. Paik DI et al [46] also said that television is the best source of information as it is seen by all the members of the family.

Hence oral health knowledge was expected to be good among college students in this study.
In the present study, Part 1(Appendix-A) is based on Attitude of various professionals towards oral and dental health care. Statistical analysis of the tabulated results of the present study on attitude based questions revealed most of the Non-Medical students visited the dentist only when there was a dental pain or problem. While medical students and allied field students visited more regularly. While most (41.52%) of the study population in the present study visited

the dentist ***only in the problem***, 33.21% professionals visit a dentist ***once in 6 months*** while 12.86% professionals visit ***once in 3 months*** and 12.41% professionals ***once in a year. Simulating these results, a study by Kumar et al[11] (2012) observed that 14.1% of college population visited the dentist once in a year.*** In the present study 36.33% professionals **never visited dentist (high as compared to study conducted by Omiri et al[14] and Ahmad et al[56], low as compared *to the study conducted by Agiapal Singh[7] and S Kumar[11)]*,** 12.28 % in **last 3 months**, 25.19% in **last 6 months** and 26.19% **more than year (awareness should be done to meet the dentist once in six months).** According to a study by S.Kumar (2012) et al[11], 58.4% of the undergraduate students had not even once visited the dentist. Rest of the study population visited the dentist for prevention (24.6%), examination (8.6%), filling/extraction (11%) and special treatments such as endodontics, prosthodontics, orthodontics (3.1%).

Our results revealed that 28.38% professionals visited a **dentist in pain (low as compared *to the study conducted by Agiapal Singh[7]*** and Verra Reddy et al[54]) followed by **dental filling** (22.52%) **high as compared to study conducted by Omiri et al[14]**, **RCT** (16.42%), only 6.04% professionals goes for **general check up (very low as compared to study conducted by Omiri et al[14]). Dental cleaning** among professionals is around 8.14%. 28% of professionals have **fear of drill (high as compared to study conducted by Omiri et al[14])** followed by **fear of needle** which is 26.85%(**high as compared to study conducted by Omiri et al[14]**), 14.09 % professionals had **lack of time**, **High cost** may be one factor among 11.76% professionals (same **as compared to study conducted by Omiri et al[14] and very low as compared to study conducted by Ahmad et al[56])**. Not surprisingly, 92.28% professionals wanted to **clean their teeth**.

In the present study, Subpart 2 of the questionnaire (Appendix-A) consisted of **Habit** based questions. Analysis of the data revealed that 94.56% professionals **cleaned their teeth with toothpaste(ONLY PEA SIZE IS RECOMMENDED this can be attributed to false perception of the populations that larger amount of toothpaste improves the effect of toothpaste)** whereas 77.66% professionals cleaned their **teeth once (high as compared to study conducted by Agiapal Singh and low as compared *to the study conducted by S Kumar[11)]***, 21.57% professionals cleaned **teeth twice(high as compared *to the study conducted by S Kumar[11)]***.

Statistically, a highly significant difference was found for the use of Neemstick as compared to other methods like finger and salt, tooth powder, charcoal etc. Dental and Medical students cleaned their teeth twice as compared to other professionals.

37.14% professionals brushed with a **soft bristle brush(A high percentage as compared *to the study conducted by S Kumar[11)]*** followed by 28.47% with a **medium bristle brush**. While 64.57% professionals used the **horizontal method of brushing**, 21.9% **vertical** and 12.85% **combined** method of brushing. 52.76% professionals changed their brush when it becomes **useless**, 23.38% in **6 months** and 22.8% in **3 months**. Maximum respondents (58.09%) professionals **brushed for 1-2min**, 40.72% professionals brushed for **less than 1 minute(low as compared to study conducted by Agiapal Singh[7])**. 82.9% professionals **did not use any interdental aid**.

Only 3.19% used floss (Flossing does not seem to be a well-known habit [55], it coincides with the present study and it is very low as compared to the study conducted by Ahmad et al[56]) while 13.33% professionals **used toothpick (more common than Floss as 16.8% in study conducted by Kumar et al [57])**. 73.57% professionals **cleaned their tongue**.74.76% **did not use any mouthwashes (low as compared to study conducted by Omiri et al[14]).**

In the present study, the use of other recommended oral hygiene methods such as dental floss and mouthwash was found to be rare; this could be due to the lack of oral health education and /or the cost of such aids.

In the present study, part 3 (Appendix-A) consisted of **Awareness** based questions. The results tabulated showed that 80.9% professionals **noticed bleeding** and 87.47% professionals understood **bleeding gums meant inflamed gingiva (high as compared to the study conducted by Omiri et al[14])** .83.23% professionals knew **about dental caries**, 67.8% professionals knew about **fluoridated tooth paste**. 96.61% agreed that **sweets affect the teeth** adversely(High as compared to study conducted by **Ahmad et al[56])**, 97.8% professionals said **early detection of mouth cancer improves chances of care**. 94.71% professionals believed that **changes in lifestyle can reduce the risk of oral cancer**. 57% professionals agreed to the statement that **tobacco is the only reason for oral cancer**. 67.66% professionals **consider smokeless form to be the cause mouth of cancer**, 92.04% professionals think **smoking form can cause mouth cancer**. According to the study, 91.57% professionals think **smoking can cause**

lung cancer. Only 59.61% professionals **agreed** that certain **systemic diseases can be manifested in the oral cavity**, 34.95% professionals **do not know** the above fact and 5.42% **disagree** the statement. 41.57% professionals **had little knowledge that "Dental care should be started even before the birth of a child prenatal care."** Out of the total study population, 66.72% professionals conceded that **oral health does not have an influence on the overall quality of life.**

Summary and Conclusion:-

In the present study, the level of ***awareness*** towards oral health care was marginally high in Dental professionals followed by Medical professionals and fair among other health care professionals like Nursing, Pharmacy, and Physiotherapy whereas it was found significantly low among the nonhealth care professionals like MBA and Engineering.

In spite of having a good level of awareness among Dental and Medical professionals, the ***habits and attitude*** towards oral health care were fair whereas among other health care professionals (like Nursing, Pharmacy, Physiotherapy) and nonhealth care professionals (like MBA and Engineering) was poor.

Hence, this study concluded that there is a strong need to strengthen the knowledge, awareness, and attitude in all professionals' irrespective of whether health care or nonhealth care.

The various ways to achieve this are:

- Emphasis on oral health care should be developed and maintained during early school education in order to improve the oral health knowledge of adults later on.
- Incorporate basic knowledge about oral health care in university curriculum for non dental students during their university study.
- One day workshop/symposia /Lecture on Basic Oral Hygiene should be organized by the concerning university/college, especially for non dental students.

It is well known that oral health of parents reflects on their children and that their attitude and knowledge affects their children.

Hence, educating adults and university students seems among the means to improve the Oral Health knowledge and behavior of the nation in future.

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Appendices-a (questionnaire):-
Oral Health Awareness;-
NAME_____AGE/SEX_____
OCCUPATION_____COLLEGE NAME_____
ADDRESS_____

ATTITUDE BASED QUESTIONS (PART-1)

1. a) Do you visit a dentist, how often?

Only in problem_____Once in 3months_____Once in 6 months_____Once in year_____

b) When did you visit last?
Never_____In last 3 months_____ In last 6 months_____ More than 1 year_____

c) Reason for visiting Dentist
Pain__Genera cheackup___RCT___Scaling___Filling___Crown & Bridge___Ortho T/t___Extraction___Any Other_____

d) Reason for not visiting
Fear of drill_____Fear of Needle_____High Cost_____Lack of Time_____Any Other_____

e) Do you want to get your teeth clean? Yes/No

Habits Based Questions (Part-2):-

2. **a) Do you clean your teeth?** Yes/no _____
b) If yes, then how do you clean your teeth? Tick the appropriate.
Neem stick___Charcoal___Finger and Tooth powder__ Finger and salt___ Tooth brush and paste__Any other,___
c) How often do you clean your teeth?
Occasionally ___Twice Daily__ Once Daily __ More than twice Daily_____
d) What type of brush do you use?
Hard____Soft_____Medium____Never noticed____
e) Which technique do you use for brushing?
Horizontal___Vertical___Circular_____Combined____
f) Do you change your brush? Yes/No ___
g) If yes, then how often do you change the brush?
When useless___Once in 3months___Once in 6 months____Once in year___
h) For how long do you brush your teeth?
Less than 1 minute___ 1-2 minute____ Greater than 2 minute___
i) Do you use any inter dental aids?
Floss___Toothpick____Inter dental brush_____
j) Do you clean your tongue? Yes /No
k) Do you use mouthwash? Yes/ No

Awareness based questions (part-3):-

3. **Have you ever noticed bleeding in your gums? Yes/ No**
   a) **Bleeding gums means inflamed gingiva?** Yes/No _____**Unawareness**____
   b) **Have you ever noticed a smell from your mouth?** Yes/ No
   c) **What Does Plaque mean?**
   Soft debris on teeth_____ , Staing of teeth_____ , Hard Debris on teeth_____ Don't Know_____

4. **a) Do you know about caries?** Yes/No
   b) Do you know about fluoridated tooth paste? Yes/No
   c) Sweets affect the teeth adversely. Yes/No

5. **a) Early detection of mouth cancer can improve chances of care?** Yes/No
   b) Changes in lifestyle can reduce the risk of development of cancer? Yes/No

6. **a) Tobacco is the only risk factor for oral cancer**
   Agree___ Disagree ____Neither agree nor disagree ____
   b) **The smokeless form can cause mouth cancer?** Yes/No

7. **a) The smoking form can cause mouth cancer? Yes/No**
   b) Can smoking cause lung cancer? Yes/No

8. **Certain systemic diseases can manifest in the oral cavity.**

Agree_____ Disagree ___ Neither agree nor disagree _____

9. Dental care should be started even before birth of a child prenatal care

Agree_____ Disagree ___ Neither agree nor disagree _____

10. Oral health has an influence on the overall quality of life. Yes/No. Signature of Patient /Student