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ASSESSMENT OF ORAL AND PERIODONTAL HEALTH KNOWLEDGE, ATTITUDE, AND AWARENESS AMONG MEDICAL PROFESSIONALS: A CROSS-SECTIONAL STUDY

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ABSTRACT:

Objectives: Oral health is vital component of the general health of an individual that has influence on one's general quality of life and well-being. Optimal health cannot be attained or maintained independent of oral health. Hence the aim of the clinical study was to assess the knowledge, attitude and practices of oral hygiene among medical students and general practitioners.

Materials and Methods: A self structured questionnaire was distributed among the participants consisting of 30 questions. The questions were divided based on knowledge, attitude and awareness about oral and periodontal verdure. The students of medical college and the general practitioners including all the specialists of medical fraternity were included in the study. Data were analyzed using chi square test.

Results: The participants believed that oral health is an important aspect for general health. Though, they seem to have basic knowledge, the awareness about the advanced treatment in periodontology appears to be subordinate. The result showed a better knowledge and attitude amongst the practitioners when compared with undergraduate students.

Conclusion: A comprehensive wisdom about oral and periodontal health was better in practitioners and requires special attention for undergraduates' students.

Key words : Awareness, surveys, Oral hygiene, Periodontal diseases, Health promotion

INTRODUCTION:

Oral health is essential component of general health. It is vital to overall health and often associated with other systemic conditions; thus, medical-dental collaboration is essential for people's well-being. Interprofessional collaboration is a 'partnership between a team of health providers and a client in a participatory collaborative and coordinated approach to shared decision making around health and social issues. It is a process in which different professional groups work together to improve health care. Interprofessional collaboration achieves greater resource efficiency and improves the standards, comprehensiveness, and continuity of care by reducing duplication and gaps in services. This improved professional cooperation between medical and dental practitioners may benefit all parties and better educate the public.[1]

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All members of the health profession have the potential to promote oral health by supporting accurate oral health messages, showing exemplary oral health related behaviors, encouraging appropriate dental visits and participating in explicit oral health promoting activities within their scope of duties. Dental knowledge of qualified medical practitioners is different when compared to the general public. Even though they are qualified in the medical faculty their knowledge about dental diseases, relationship of oral health with systemic diseases and life threatening dental diseases are scarce. Failure to diagnose oral conditions often results in significant additional health care cost to the patient or funding agency.[2] Also, periodontal disease is thought to have systemic ramifications and has been implicated in a wide range of conditions such as hypertension, stroke, atherosclerosis and poor pregnancy outcome, to name a few.[3]

Hence the present study was done to explore the knowledge about oral and periodontal diseases, their attitude and awareness about the treatment modalities among medical professionals.

Objectives :

- To assess the dental knowledge among the medical practitioners.
- To know their attitudes towards dental health
- To assess their awareness on systemic conditions related to oral health.

MATERIALS AND METHODS:

Study Design

The study is of an observational and cross sectional design. A self-structured questionnaire was used for the study. A total of 30 questions was used which was divided equally in three sections namely attitude, knowledge and awareness with 10 questions in each. All the questions were close ended. The participants included student of medical college as well as private practitioners of Durg-Bhilai twin city.

Sample Size

The undergraduate students studying in Chandulal Chandrakar Memorial Medical College and Hospital were included in the study, constituting a total sample of 400. The private practitioners included those with MBBS degree/MBBS degree with specialization which constituted a sample of 120.

Collection of Data

Ethical consent was obtained from the institutional review board and permission from concerned medical college was taken. The data was collected using self-structured questionnaire. The questionnaire included demographic details, importance and maintenance of oral health, relationship of oral disease and periodontal disease with general health,

systemic etiology and manifestation of periodontal disease, management of periodontal diseases and treatment modalities available.

Statistical Analysis : Data obtained was analyzed using the SPSS (Statistical package for social sciences) version 17.0. Chi-square test was used to find the statistical significance among the responses obtained.

RESUTS:

All the participants completed the questionnaire. However, they did left some of the questions unmarked which were considered as omitted. The age of students ranged from 18-26 years and that of practitioners from 27-65 years.

Responses of study subjects based on attitude: (Table I)

All the participants agreed that oral health is integral part of general health (100%). When asked about the oral manifestation of systemic disease, all the doctors agreed to it (100%) but only 59.75% students' agreed while 15.75% disagreed and 20.75% neither agreed nor disagreed. 71.67% doctors believed that saliva can be used for diagnosis but 17.5% disagreed. 78.25% students agreed to this but 21.75% disagreed. 83% of students and 76.67% of doctors agreed that proper brushing and flossing maintains good oral hygiene. When inquired about loss of teeth 62.5% doctors and 46.25% believed that it is an inevitable phenomenon of age and cannot be prevented by either dentist or patient. 100% of doctors agreed that oral health has influence on overall quality of life, while only 74.25% students' agreed to this. The knowledge about the fact that oral diseases have implication on diseases like cardiovascular and pregnancy appears to be satisfactory in both doctors (70.83%) and students (62.5%). 88.33% doctors' and 68.25% students' believed that periodontal diseases are preventable. Only 68.33% doctors refer their patients to dentist for oral diseases but 83.25% students advise their patients to undergo oral evaluation according to their need. Screening of patient for their periodontal needs is not usually done by practitioners as only 41.67% marked their answer to be yes, however 62.5% students responded in affirmative.

Responses of study subjects based on knowledge: (Table II)

72.5% doctors' and 60% students' knew that halitosis is bad breath while 27.5% doctors' and 40% students' think it is foul taste. When questioned about the cause of periodontal disease 34.17% doctors' and 50% students' answered it to be plaque, 28% doctors' and 25% students' think that they are inherited and 42.5% doctors' and 25% students' said that it is caused by vitamin C deficiency. 55.83% doctors' and only 35.5% students' think genes play a role in periodontal disease. Periodontal diseases are more prevalent in diabetic patients; this is supported by 79.17% doctors' and 56.25% students'. 54.17% doctors' and 37.5% students' believed that low birth weight deliveries

could be the outcome of periodontal disease. Smoking affects periodontal health is braced by all the doctors participating in the study (100%) and 77.5% of students. Only 56.67% of doctors are aware of the pregnancy tumor while only 305 students know about this. 45% doctors and 32.5% students have noticed that pregnant women have increase in gingival inflammation. 100% of the doctors and 69.5% students knew about drug induced gingival enlargement. All the doctors believed there is a need to visit dentist for bleeding gums, however only 92.5% of students affirmed the same.

Responses of study subjects based on awareness: (Table III)

47.5% doctors' and 40% students' knew that periodontal disease show suppression of inflammatory markers however 12.5 % doctors' and 17.5% students' omitted the question. When asked about the treatment of gingival overgrowth doctors responded as: scaling (29.17%), excision (19.17%), drugs (35%) and 16.67% omitted the question. The student responded as: scaling (18.75%), excision (18.75%), drugs (56.25%) and 6.25% omitted the question. 41.67% doctors' and 60% students' think that scaling causes removal of enamel. The frequency of visit to the dentist should be 2-3 months was supported by 29.17% doctors, 45% students. However 41.67% doctors, 45% students answered it to be 6 months and 12.5% doctors, 10% students said it is 12 months. 95.83% doctors and 93.75% students know that gummy smile can be treated and 70% doctors, 62.5% students know about depigmentation procedure. 62.5% doctors, 61.5% students are aware of bone grafts while 42.5% doctors and 50% students know about local drug delivery agents. 81.67% doctors and 55% students think there is treatment available for gingival recession and 66.67% doctors and 47.5% students know about use of LASER in periodontal disease.

DISCUSSION:

The mouth is the major portal of entry to the body and is equipped with formidable mechanisms for sensing the environment and defending against toxins or invading pathogens. The relationship between oral and general health has been increasingly recognized during the past two decades.[4] Poor oral conditions may adversely affect general health and certain medical conditions may have a negative impact on oral health.[5] The present study assessed oral and periodontal knowledge, attitude and awareness among the students and practitioners.

The attitude about the dental problems was found to be satisfactory among the population where the majority have answered correctly. This was in accordance to the study conducted by Pralhad and Thomas where the participants have answered that plaque causes periodontal disease and preferred vitamin C as the correct option. They also got a higher response when asked that

whether periodontal diseases are inherited.[6] Majority of study population has agreed that systemic diseases manifest in oral cavity and saliva can be used as diagnostic marker. However people still think that loss of teeth is a natural phenomenon as reflected in the results. But tooth loss and oral problems can be avoided by proper oral hygiene. Participants believe that there is perio-systemic relationship in disease like CVS, low birth weight babies. The practitioners do refer patients to dentist according to their needs but do not screen every patient. The result obtained were similar to those obtained with study conducted by Mehrotra et al which shows that periodontal problems and tooth decay are prevented by regular brushings and pregnant patients require dental checkup.[7]

The knowledge about dental problems was a little skewed. Majority of practitioners know what halitosis is but the 40% students think it is foul taste. Vitamin C was the main cause of periodontal disease as answered by practitioners. The participants knew that diabetic patients and smokers show more periodontal problems but role of genes remain addled. Majority of students participated are oblivious to pregnancy gingivitis and low term birth weight babies but practitioners were aware of this. The practitioners and students both knew about drug induced gingival enlargement and think there is a need to visit the dentists for bleeding gums. The results coincide with that of Pralhad and Thomas.[6] and Varghese et al.[8]

The awareness about periodontal treatment procedures not found satisfactory particularly in students. They did not know about the inflammatory markers, gingival overgrowths and local drug delivery procedures. Rather, they have an assumption that scaling causes thinning of enamel. This is common myth circulating in general population which needs to be eradicated. This was in accordance to the study done by Mehrotra et al.[7] However majority of study population did know about the use LASERS, bone grafts and they know that gingival recession, gummy smile and gingival pigmentation can be treated. Pralhad and Thomas.[6] have also shown satisfactory response to these questions in their study. However it was seen that participants have omitted marking the response in this section of questionnaire which was compared to the other two sections. This is assumed to be lack of knowledge about the respective procedures.

The systemic diseases having effects on the periodontium have been recorded and a new area called as “medical periodontology” was introduced by Williams and Offenbacher, who also pointed to the bidirectional inter-relationship between periodontal diseases and other systemic conditions like cardiovascular diseases, diabetes mellitus, cerebrovascular diseases and respiratory diseases. Additionally, previous researches have shown that

periodontal diseases may impact the general health of an individual or change the course of systemic conditions. In the case of diabetes mellitus, changes can occur in the collagen metabolism, gingival crevicular fluid, microflora and host response.[9] With increasing research of this perio-systemic relation and establishment of this links persuade both dental and medical fields to collaborate and this study was an attempt to impose the same.

Limitations of the study include individual response bias, influence of the neighboring participant and discussion while marking the answer.

CONCLUSION:

With the increasing evidence of interrelationship between periodontal and systemic diseases, a comprehensive wisdom was lacking in undergraduates and was optimal for practitioners. However this knowledge should be updated time to time since they are health providers and can access the individual patients and families. Steps should be taken to increase this knowledge as it is rightly said "Mouth is the mirror of the body."

Questionnaire

Attitude

1. Oral health is an integral part of general health.
    a. Agree
    b. Disagree
    c. Neither agree nor disagree
2. Certain systemic diseases can manifest in the oral cavity.
    a. Agree
    b. Disagree
    c. Neither agree nor disagree
3. Saliva can be used in the diagnosis of oral as well as certain systemic diseases
    a. Agree
    b. Disagree
    c. Neither agree nor disagree
4. Proper brushing of teeth and flossing will enable to prevent both dental caries and gingival diseases.
    a. Agree
    b. Disagree
    c. Neither agree nor disagree
5. Loss of teeth during old age is a natural phenomenon. Neither the dentist nor the patient can prevent tooth loss
    a. Agree
    b. Disagree
    c. Neither agree nor disagree
6. Oral health has an influence on the overall quality of life
    a. Agree
    b. Disagree
    c. Neither agree nor disagree
7. Oral diseases have an implication on certain systemic diseases/conditions like cardiovascular diseases, Pregnancy, low birth weight babies etc.
    a. Agree
    b. Disagree
    c. Neither agree nor disagree
8. Do you think periodontal diseases are preventable?
    a. Agree
    b. Disagree
    c. Neither agree nor disagree
9. Do you refer your patients to a dentist according for evaluation?
    Yes/No
10. Do you screen your patients for periodontal disease?
    Yes/No

Knowledge

11. Halitosis is

Bad breath/ Foul taste

12. Periodontal disease is caused by
    Plaque/Hereditary/Vitamin C deficiency
13. Do you think genes play a role in periodontal diseases?
    Yes/No
14. Do you think periodontal diseases are more prevalent in diabetic patients?
    Yes/No
15. Can periodontal disease lead to preterm low birth weight deliveries?
    Yes/No
16. Does smoking affect periodontal tissues?
    Yes/No
17. Are you aware of gingival swellings which sometimes occur during pregnancy?
    Yes/No
18. Have you felt that about half of all pregnant women show increase in severity of gingival inflammation?
    Yes/No
19. Do you think gingival enlargement is caused by drugs?
    Yes/ No
20. Do you think there is a need to visit the dentist when there is bleeding from the gums?
    Yes/No

Awareness

21. Do you think that periodontal disease has been associated with suppressed levels of serum inflammatory markers?
    Yes/No
22. Gingival overgrowth can be treated by
    Scaling/Excision/ Drugs
23. Do you think scaling can cause the removal of enamel?
    Yes/No
24. One should visit a dentist once in
    2-3 months/6 months/12 months
25. Gummy smile, can it be treated?
    Yes/No
26. If your gums are brown, do you think they can be treated?
    Yes/No
27. Are you aware that alveolar bone can be regenerated by using bone substitutes (artificial bone)?
    Yes/No
28. Are you aware of the use of local drug delivery for the treatment of periodontal diseases?
    Yes/No
29. Can gingival recession be treated?
    Yes/No
30. Are you aware that LASERs are used for the treatment of periodontal diseases?
    Yes/No

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TABLES:

Table I : Responses of study subjects based on attitude

Question no.	Doctors			Students		
1	Agree – 100%	Disagree - 0	Neither agree nor disagree - 0	Agree – 100%	Disagree - 0	Neither agree nor disagree - 0
2	Agree – 100%	Disagree - 0	Neither agree nor disagree - 0	Agree – 59.75%	Disagree - 15.75%	Neither agree nor disagree - 20.75%
3	Agree – 71.67%	Disagree - 17.5%	Neither agree nor disagree - 10.83%	Agree – 78.25%	Disagree - 21.75%	Neither agree nor disagree - 0
4	Agree – 76.67%	Disagree - 12.5%	Neither agree nor disagree - 10.83%	Agree – 83%	Disagree - 14.5%	Neither agree nor disagree - 2.5%
5	Agree – 62.5%	Disagree – 20.83%	Neither agree nor disagree – 16.67%	Agree – 46.25%	Disagree - 41.25%	Neither agree nor disagree – 12.5%
6	Agree – 100%	Disagree – 0	Neither agree nor disagree – 0	Agree – 74.25%	Disagree – 17.25%	Neither agree nor disagree – 8.5%
7	Agree – 70.83%	Disagree – 20.83%	Neither agree nor disagree – 8.33%	Agree – 62.5%	Disagree – 12.5%	Neither agree nor disagree – 25%
8	Agree – 88.33%	Disagree – 3.33%	Neither agree nor disagree – 8.33%	Agree – 68.25%	Disagree – 16.75%	Neither agree nor disagree – 15%
9	Yes - 68.33%		No - 31.67%	Yes – 83.25%		No - 13.75%
10	Yes – 41.67%		No – 58.33%	Yes – 62.5%		No – 37.5%

Yes, No: responses to the questions
Agree, Disagree, Neither agree nor disagree: responses to the questions

Table II : Responses of study subjects based on knowledge

Question no.	Doctors			Students		
11	Bad breath - 72. 5%	Foul smell - 27.5%		Bad breath - 60%	Foul smell – 40%	
12	Plaque - 34.17%	Hereditary - 23.33%	Vitmain C- 42.5%	Plaque - 50%	Hereditary - 25%	Vitmain C- 25%
13	Yes – 55.83%	No – 44.17%		Yes - 37.5%	No – 62.5%	
14	Yes – 79.17%	No – 20.83%		Yes - 56.25%	No – 42.5%	
15	Yes – 54.17%	No – 45.83%		Yes - 37.5%	No – 57.5%	
16	Yes – 100%	No – 0		Yes - 77.5%	No – 22.5%	
17	Yes – 56.67%	No – 43.33%		Yes - 30%	No – 70%	
18	Yes – 45%	No - 55%		Yes - 32.5%	No – 67.5%	
19	Yes – 77.5%	No – 22.5%		Yes - 69.5%	No – 30.5%	
20	Yes – 100%	No – 0		Yes - 92.5%	No – 7.5%	

Yes, No: responses to the questions

Table III : Responses of study subjects based on awareness

Question no.	Doctors				Students			
21	Yes - 47.5%	No – 40%	Omitted - 12.5%		Yes - 40%	No – 42.5%	Omitted - 17.5%	
22	Scaling - 29.17%	Excision - 19.17%	Drugs – 35%	Omitted - 16.67%	Scaling - 18.75%	Excision - 18.75%	Drugs – 56.25%	Omitted – 6.25%
23	Yes - 41.67%	No – 58.33%	Omitted - 0		Yes - 60%	No – 37.5%	Omitted - 2.5%	
24	2-3 months - 29.17%	6 months - 41.67%	12months - 12.5%	Omitted - 16.67%	2-3 months - 45%	6 months - 45%	12months - 10%	Omitted - 0
25	Yes - 95.83%	No – 4.17%	Omitted - 0		Yes - 93.6%5	No – 6.25%	Omitted - 0	
26	Yes - 70%	No – 30%	Omitted - 0		Yes - 62.5%	No – 37.5%	Omitted - 0	
27	Yes - 62.5%	No – 37.5%	Omitted - 0		Yes - 61.5%	No – 34.75%	Omitted - 3.75%	
28	Yes - 42.5%	No – 57.5%	Omitted - 0		Yes - 50%	No – 41%	Omitted - 9%	
29	Yes - 81.67%	No – 18.33%	Omitted - 0		Yes - 55%	No – 42.5%	Omitted - 2.5%	
30	Yes - 66.67%	No – 33.33%	Omitted - 0		Yes - 47.5%	No – 48.75%	Omitted - 3.75%	

Yes, No, Omitted: responses to the questions