



A PRELIMINARY SURVEY AWARENESS OF CORRELATION BETWEEN PERIODONTAL DISEASE AND GENERAL HEALTH AMONG QUALIFIED HEALTH PROVIDERS IN URBAN AND RURAL AREA OF MORADABAD

Dental Science

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ABSTRACT

PURPOSE: Relationship between periodontal health and general health has been established in a number of studies. However, the level of awareness of periodontal concepts and knowledge among general medical practitioners and its relationship with general health among general practitioners remains an unexplored area.

METHODS: A total of 1000 general medical practitioners of Moradabad were included in the assessment. Level of awareness of periodontal disease and treatment concepts was assessed and graded as good, fair and poor. Fifteen questions related to association of periodontal disease with general health were enquired and associated with grade of awareness regarding periodontal disease and treatment concepts.

RESULTS: 93.7% had fair and 5.8% had good knowledge about periodontal disease, 94.2% had fair and 3.6% had good knowledge about concepts of treatment. Out of 15 items assessed, on 8, correct responses was obtained from <50% respondents. Knowledge about periodontal disease and treatment concepts was significantly associated with awareness regarding periodontal disease and general health.

CONCLUSIONS: Good to fair knowledge about periodontal disease and periodontal treatment concepts was present in majority of medical practitioners. Level of knowledge of periodontal disease and its treatment concepts was significantly associated with awareness regarding periodontal disease and general health.

KEYWORDS

General Medical Practitioners, Periodontal Disease, Periodontal Treatment Concepts, Periodontal Disease And General Health.

INTRODUCTION

Human beings have been afflicted by mainly two oral diseases such as periodontal diseases and dental caries since time immemorial.

The periodontal disease refers to the inflammatory processes that occur in the tissues surrounding the teeth in response to bacterial accumulations, or dental plaque on the teeth. The bacterial accumulations cause an inflammatory response from the body. The chronic and progressive bacterial infection of the gums leads to alveolar bone destruction and loss of tissue attachment to the teeth. The periodontal disease has many stages, ranging from easily treatable gingivitis to irreversible severe periodontitis [1]

General Health is the level of functional or metabolic efficiency of a living organism. In humans, it is the ability of individuals or communities to adapt and self-manage when facing physical, mental or social challenges. Human body is a myriad of afflictions and maladies, with oral cavity being a part of the body. [5] Inflammation in any part of the body causes the release of cytokines which are similar to those released during inflammation of the periodontium commonly referred to as periodontitis. These cytokines are circulated to different body systems or organs spreading the zone of inflammation thereby connecting the oral diseases with the rest of the body. That's why a diseased periodontium would lead to a diseased body.

Relationship between periodontal disease and general health has often been reported. There are a number of reports indicating association of periodontal disease with diabetes, pregnancy complications [2], infections and inflammation [3, 4] diseases of respiratory tract [5], osteoporosis [6], rheumatoid arthritis (7), cancer (8) and a host of other

general and specific health disorders [9, 10].

Thus, periodontal disease might have far more reaching general and specific health risks apart from affecting the oral health. Unfortunately, the average general medical practitioners have inadequate knowledge regarding periodontal diseases and their impact on health [13]. Even those who have an idea about existence of such relationship, the precise knowledge is lacking [14]. Owing to this lack of precise knowledge the general health practitioners very rarely recommend a patient with periodontal disease to a periodontist [15].

With this background, the present study was carried out with an aim to assess the general medical practitioners in Moradabad city with respect to their knowledge related with periodontal disease, its treatment concept and its specific associations with different general and systemic health conditions.

MATERIALS AND METHODS

The present study was planned at Department of Periodontics, Kothiwal Dental College and Research Centre, Moradabad and conducted amongst the general medical practitioners of Moradabad city after obtaining clearance from IERB (Institutional Ethical and Review Board) committee of Kothiwal Dental College & Research Centre Moradabad. The study population consists of qualified medical practitioners including Allopathic (M.B.B.S, M.D & M.S. in all speciality branches), Ayurvedic, Homeopathic, Unani and others. Non-qualified medical practitioners and dental surgeons were excluded from assessment.

A total of 1000 practitioners willing to participate in the study were

enrolled in the study. A structured, self administered and closed ended questionnaire as designed was distributed among them. The questionnaire used in the study consisted of two parts. The first part was related to demographic data (age, gender, qualification, experience, contact number and address). While the second part has includes, some definitions, concept about treatment and awareness. The definition included some facts about dental plaque, pyorrhea and its differentiation from periodontitis and was enquired through two questions. The knowledge regarding periodontal disease was rated using the following criteria:

- Poor (who had wrong knowledge about both the questions);
- Fair (who had knowledge about at least one question);
- Good (who had knowledge about both the questions).

On the other hand the concept of treatment included 3 major leading questions like:-

- 1) Do you think that brushing should be stop if gums bleed?
- 2) Do you think scaling can be the potential cause of tooth mobility?
- 3) Do you think pyorrhea cannot be treated?

Based on the above responses Respondents' knowledge about concepts of treatment was graded as Poor (all the three wrong responses); Fair (1 to 2 right responses); Good (all the three right responses).

At the end 15 questions related with association of periodontal health and general & systemic health were included.

After all the questions were successfully answered by the medical practitioners, they were collected, compiled into two files, the first one kept separately and the other file was used to prepared the master chart, thus making it a blind study. The data thereafter was sent for statistical analysis.

The statistical analysis was done using SPSS (Statistical Package for Social Sciences) Version 15.0 statistical analysis software. The values were represented in number and percentages (%). Chi-square test was used for the purpose of comparison. A 'p' value less than 0.05 indicated a statistically significant association.

RESULTS

Grade of knowledge related to periodontal disease was found to be good in 58 (5.8%), fair in 937 (93.7%) and poor in 5 (0.5%) of respondents whereas knowledge about concepts of periodontal treatment was rated as good in 36 (3.6%), fair in 942 (94.2%) and poor in 22 (2.2%) of respondents (Table 1).

Awareness about relationship between periodontal, general and systemic health ranged from 5% (pyorrhea, an hereditary disease) to 98.2% (nutritional deficiency and oral cavity changes). There were 8 items on which awareness relationship about between periodontal, general and systemic health ranged from 5% (pyorrhea, an hereditary disease) to 26.30% (use of brush for removing plaque). For rest of the seven items awareness ranged from 75.20% (effect of radiation therapy on oral health) to 98.2% (nutritional deficiency and oral cavity changes) (Table 2).

With increasing grades of knowledge regarding periodontal disease, an increase in awareness level for relationship of periodontal, general and systemic health and treatment was observed for all the items and this relationship was significant statistically too ($p < 0.05$) for all the items except relationship between radiation therapy and oral health ($p = 0.181$) (Table 3).

The association between grades of knowledge regarding periodontal treatment concepts and relationship of periodontal, general and systemic health and treatment too, with increasing grade of conceptual knowledge an increase in proportion of respondents with correct awareness was observed for all the items and this relationship was also significant statistically for all the items ($p < 0.05$) except item use of brush for removing dental plaque ($p = 0.069$) (Table 4).

DISCUSSION

Periodontology is one of the fast growing dental specialties. Its services not only cover preventive and curative aspects of oral health, but also offer cosmetic flare and regenerative health programs. Of late, periodontal disease is thought to have systemic ramifications and has been implicated in a wide range of conditions such as hypertension, stroke, atherosclerosis, poor pregnancy outcome, to name a few. Yet,

periodontics is still seen to be nascent and perception of it is quite variable among the dental professionals themselves. Some studies related with awareness level and referral patterns of general medical practitioners have also been carried out [13, 15]. However, there is no study available which assesses and correlates the level of awareness of medical practitioners with respect to periodontal disease and its treatment concepts, relationship of periodontal, general and systemic health and treatment. The present study was a first in that direction.

In present study, with respect to knowledge related to periodontal disease and concepts of periodontal treatment, medical practitioners in general had fair knowledge only. There were only 5.8% practitioners who had good knowledge of periodontal disease and only 3.6% practitioners who had good knowledge about concepts of periodontal treatment. This is a dismal scenario and in effect indicates a relatively lower concern of general practitioners with respect to periodontal disease and its treatment concepts. Considering the fact that periodontal disease has a potential relationship with various oral, general and systemic diseases [1, 12], it seems that periodontal disease which should be viewed as an indicator of general and systemic health is an ignored health aspect among medical practitioners. A similar view point was also expressed by Nagarakanti *et al.* [15] who were of the view that the referral patterns of medical practitioners indicated that periodontal disease was of low concern in their preference set. This study showed that medical practitioners in general fail to differentiate amongst different branches of dentistry and lay less emphasis on referring their patients to appropriate dental practitioner. Other studies have also shown the need to improve the knowledge of medical practitioners with respect to relationship between oral and general health [16, 17].

In present study, the awareness of medical practitioners with respect to relationship between periodontal, general and systemic health and treatment was evaluated through the help of 15 questions. Interestingly, for 7 out of 15 questions (46.7%), more than 75% medical practitioners showed awareness, however, for majority of questions (53.3%), the percentage of medical practitioners with correct knowledge ranged from 5% to 26.3% only. The findings thus showed that awareness on specific issues was severely lacking among medical practitioners. Given the fact, that relationship of periodontal, general and systemic health is a continuously being explored and updated, the findings of present study indicate the need for updation of knowledge of medical practitioners. In a previous study, Srinidhi *et al.* [11] had stressed on the need of organizing joint continuing medical education programmes for both medical and dental practitioners in order to update their knowledge. Interestingly, in present study we found that the awareness levels of medical practitioners were significantly associated with basic knowledge of periodontal disease and its treatment concepts too, thus indicating that not only the updation of newly reported relationships but also the basic concepts need a reorientation.

One of the limitations of present study was the fact that it included medical practitioners from different streams (allopathic, homoeopathy, Ayurveda, Unani) as well as those having a wide variation in clinical practice, although these factors could also affect the awareness levels, however, given the generalized awareness level for knowledge on basic aspects, *viz.* knowledge of periodontal disease and its treatment concepts (where more than 90% respondents showed fair knowledge only) these factors seem to play a little role and as such indicate a generalized indifference of medical practitioners with respect to acquisition of knowledge related with periodontal disease and its health outcome.

The findings in present study were interesting, kind of an eye-opener and highlighted the need for inter-disciplinary interaction to enhance the knowledge of medical practitioners with respect to periodontal disease and its health outcome.

CONCLUSION

Within the limitations of the present study, it was concluded that the majority of physicians:

1. Had good knowledge and awareness regarding periodontal diseases.
2. Had good knowledge and awareness regarding the knowledge of concept of treatment.

Were aware that the oral disease might affect the medical problems of

the patients and ignorance of facts relating to oral diseases also affected their medical practice.

Table 1: Distribution of respondents according to grade of knowledge related with periodontal disease and concepts of periodontal treatment

Dimension of knowledge	Grade of Knowledge		
	Good	Fair	Poor
Periodontal disease	58 (5.8%)	937 (93.7%)	5 (0.5%)
Concepts of periodontal treatment	36 (3.6%)	942 (94.2%)	22 (2.2%)

Table 2: Relationship between Periodontal Health, General & Systemic Health

Code No.	Factors	Wrong Response		Right Response	
		No.	%	No.	%
P1	Use of brush for removing food particles or for dental plaque?	737	73.70	263	26.30
P2	Is gingivitis a common problem in pregnant women?	894	89.40	106	10.60
P3	Is Pyorrhea a hereditary disease?	950	95.00	50	5.00
P4	Is there any Correlation between Periodontal Disease and Systemic Health?	40	4.00	960	96.00
P5	Can any nutritional deficiency produce change in oral cavity?	18	1.80	982	98.20

P6	Can gingival health be affected by the onset of puberty?	68	6.80	932	93.20
P7	Can change in menstrual cycle affect gingival health?	81	8.10	919	91.90
P8	Can periodontal disease cause the preterm low birth weight delivery in pregnant women?	909	90.90	91	9.10
P9	Can any drug cause swelling in the gums?	856	85.60	144	14.40
P10	Do you perceive periodontal disease to be a risk factor for diabetes?	887	88.70	113	11.30
P11	Can periodontal infection affect the onset/progression of heart disease?	884	88.40	116	11.60
P12	Can Radiation therapy affect Oral Health?	248	24.80	752	75.20
P13	Had you ever educated your patient regarding oral health maintenance, linking it to be a cause of general health problems?	40	4.00	960	96.00
P14	How often you visit your dentist?	793	79.30	207	20.70
P15	Do you think oral disease may influence your practice?	39	3.90	961	96.10

Table 3: Association between Knowledge of Periodontal Disease and Relationship of Periodontal disease with General and Systemic Health

SN	Items	Grade of knowledge						Significance of association 'p' value*
		Poor (n=5)		Fair (937)		Good (n=58)		
		n	%	n	%	n	%	
P1	Use of brush for removing food particles or for dental plaque?	0	0.00	257	27.43	6	10.34	0.007
P2	Is gingivitis a common problem in pregnant women?	1	20.00	65	6.94	40	68.97	<0.001
P3	Is Pyorrhea a hereditary disease?	0	0.00	30	3.20	20	34.48	<0.001
P4	Is there any Correlation between Periodontal Disease and Systemic Health?	2	40.00	906	96.69	52	89.66	<0.001
P5	Can any nutritional deficiency produce change in oral cavity?	4	80.00	926	98.83	52	89.66	<0.001
P6	Can gingival health be affected by the onset of puberty?	0	0.00	888	94.77	44	75.86	<0.001
P7	Can change in menstrual cycle affect gingival health?	0	0.00	878	93.70	41	70.69	<0.001
P8	Can periodontal disease cause the preterm low birth weight delivery in pregnant women?	0	0.00	58	6.19	33	56.90	<0.001
P9	Can any drug cause swelling in the gums?	4	80.00	90	9.61	50	86.21	<0.001
P10	Do you perceive periodontal disease to be a risk factor for diabetes?	1	20.00	68	7.26	44	75.86	<0.001
P11	Can periodontal infection affect the onset/progression of heart disease?	1	20.00	70	7.47	45	77.59	<0.001
P12	Can Radiation therapy affect Oral Health?	3	60.00	700	74.71	49	84.48	0.181
P13	Had you ever educated your patient regarding oral health maintenance, linking it to be a cause of general health problems?	3	60.00	902	96.26	55	94.83	<0.001
P14	How often you visit your dentist?	5	100.00	182	19.42	20	34.48	<0.001
P15	Do you think oral disease may influence your practice?	2	40.00	908	96.91	51	87.93	<0.001

Table 4: Association between Knowledge of Periodontal Treatment Concepts and Relationship of Periodontal disease with General and Systemic Health

SN	Items	Grade of Concepts						Significance of association 'p' value*
		Poor (n=22)		Fair (942)		Good (n=36)		
		n	%	n	%	n	%	
P1	Use of brush for removing food particles or for dental plaque?	4	18.18	255	27.07	4	11.11	0.069
P2	Is gingivitis a common problem in pregnant women?	12	54.55	69	7.32	25	69.44	<0.001

P3	Is Pyorrhea a hereditary disease?	10	45.45	34	3.61	6	16.67	<0.001
P4	Is there any Correlation between Periodontal Disease and Systemic Health?	13	59.09	913	96.92	34	94.44	<0.001
P5	Can any nutritional deficiency produce change in oral cavity?	18	81.82	932	98.94	32	88.89	<0.001
P6	Can gingival health be affected by the onset of puberty?	10	45.45	896	95.12	26	72.22	<0.001
P7	Can change in menstrual cycle affect gingival health?	8	36.36	885	93.95	26	72.22	<0.001
P8	Can periodontal disease cause the preterm low birth weight delivery in pregnant women?	7	31.82	62	6.58	22	61.11	<0.001
P9	Can any drug cause swelling in the gums?	18	81.82	95	10.08	31	86.11	<0.001
P10	Do you perceive periodontal disease to be a risk factor for diabetes?	11	50.00	75	7.96	27	75.00	<0.001
P11	Can periodontal infection affect the onset/progression of heart disease?	11	50.00	75	7.96	30	83.33	<0.001
P12	Can Radiation therapy affect Oral Health?	14	63.64	704	74.73	34	94.44	0.012
P13	Had you ever educated your patient regarding oral health maintenance, linking it to be a cause of general health problems?	16	72.73	909	96.50	35	97.22	<0.001
P14	How often you visit your dentist?	14	63.64	177	18.79	16	44.44	<0.001
P15	Do you think oral disease may influence your practice?	14	63.64	915	97.13	32	88.89	<0.001

*Chi-square test

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