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RESEARCH ARTICLE

PERIODONTAL AWARENESS AMONG MEDICAL INTERNS AND POSTGRADUATES IN ANDHRA PRADESH.

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Key words:-

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Abstract

Aim: Chronic periodontitis may act as a source for systemic inflammation that impacts overall health. It is associated with an increased risk of systemic illness such as cardiovascular diseases, rheumatoid arthritis, adverse outcomes in pregnancy and diabetes. So it triggered the need of a close association between physician and dentist. Hence the present study was conducted to know the awareness of medical interns and post graduates towards periodontal diseases.

Materials and Methods: A cross sectional study was conducted from June to November 2015. Total 300 participants are selected, in that 260 were responded to participate in the study. A 14-Question survey was distributed to participants chosen randomly from various medical colleges in Andhra Pradesh, India. Questions are designed to assess the knowledge of participants about periodontitis and its association with systemic diseases. The study was approved by institutional ethical committee. Data were analysed by using commercially available statistical software SPSS(P <0.05).

Results: Of the 260 participants, 65% are male and 35% are female. About 52.4% don't know that periodontal infection may cause preterm low birth weight child. Only 2% have rated their knowledge regarding the association of periodontal disease with systemic diseases was excellent but 51.4% know that periodontal disease is a risk factor for systemic diseases. About 25% never screened their patients for periodontal disease i.e. they were not prepared nor trained to screen periodontal diseases.

Conclusion: In this study medical interns and post graduates had limited awareness towards periodontal diseases. Oral health training as part of the medical curriculum is strongly recommended.

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Introduction:-

Periodontal disease is a multifactorial with a complex interaction between microbial infection and host responses. Several risk factors and susceptibilities include age, sex, socioeconomic status, tobacco usage, genetic factors and systemic diseases¹.

There is growing evidence that periodontal disease may act as a source for systemic inflammation that affects the overall health status². Literature stated that systemic inflammatory markers like blood leukocytes and plasma level of C-reactive proteins are highly elevated in persons with periodontal disease^{3,4}. The chronic elevation of inflammatory markers due to periodontitis might be associated with an increased risk of systemic diseases like cardiovascular disease, stroke, peripheral vascular disease⁵, diabetes mellitus⁶ and adverse pregnancy outcomes^{7,8}. This association poses a compelling reason for physician to increase their role in screening oral problems and led to a call for greater collaboration between dentist and physicians⁹.

Periodontal disease may be associated with cardiovascular diseases (CVD) due to mutual risk factors for atherogenesis and periodontal disease. One of such risk factors is pathogens like *T. denticola*, *P.gingivalis*, *F.nucleatum*, *P.intermedia* etc. which are associated with periodontal infection should be localized in serum or atheromatous plaques. Chronic presence of these periodontal microbes can lead to atherogenesis via direct invasion of the arterial wall and the release of systemic inflammatory mediators with atherogenic effects in response to infection. Serum C-reactive protein (CRP) plays a role in endothelial dysfunction and elevated levels of CRP provide insight into the linking of periodontal disease and CVD^{10,11,12,13}.

The bidirectional inter-relationship between diabetes and periodontal disease has been described¹⁴. In other way systemic inflammation play a major role in insulin sensitivity and glucose dynamics. Evidence suggests that periodontal disease can induce an elevated chronic inflammatory state which can exacerbate the insulin resistance by preventing autophosphorylation of insulin receptor and inhibiting second messenger signalling via inhibition of the enzyme tyrosine kinase there by increasing the risk of diabetes^{15,16}. Diabetes results in impairment of neutrophil adherence, chemotaxis and phagocytosis, which may facilitate bacterial resistance in the periodontal pocket and significantly increase the periodontal destruction.

The growing evidence that infection remote from the fetal-placental unit may have a role in the preterm delivery of low-birth-weight infants has led to an increased awareness of the potential role of chronic bacterial infections in the body. Periodontal disease with chronic gram-negative infections results in local and systemic elevations of pro-inflammatory prostaglandins and cytokines¹⁷. Up-regulation of pro-inflammatory cytokines resulting from the normal host response to an infectious agent may represent the key mechanism linking periodontal disease to pre-term low birth weight (PLBW). Microbiological products such as endotoxin will trigger a host immune response, causing both local inflammation and activation of soluble pro-inflammatory mediators such as IL-1, TNF- α and matrix metallo proteinases (MMPs). These inflammatory markers have been shown to cross the placental barrier and to cause fetal toxicity, resulting in preterm delivery and low-birth-weight babies¹⁸.

All these evidence clearly provides an outline, the influence of periodontal disease on systemic health. About 60% of Indian population and half of the American population have been reported with periodontal diseases¹⁹.

Hence the present study was conducted to evaluating periodontal awareness among medical interns and post graduates towards periodontal disease in Andhra Pradesh.

Materials and methods:-

A Cross sectional Study was designed and conducted by department of periodontics, Lenora institute of dental sciences, Rajahmundry, India. Source of the data was collected from the medical interns and post graduates from various medical colleges in Andhra Pradesh, during June to November 2015. Total of 300 participants were selected for the study, in that 260 were responded to participate in the study. A self-administered, structured questionnaire was distributed to all participants. The questionnaire had 14- questions. These questions were developed to assess the knowledge of medical interns and postgraduates regarding the etiopathogenesis of periodontitis and its relationship with systemic diseases. Participants were asked to circle the single best answer. The study was approved

by the Ethical Committee, Lenora Institute of Dental Sciences, Rajahmundry, Andhra Pradesh. Informed consent was taken from all the participants.

Analyses were performed using commercially available statistical software (SPSS). Chi-square analysis was done to compare male and female subgroups. The spearman correlation co-efficient was used to correlate the self-assessed knowledge /orientation of medical interns and post graduates.

Results:-

The survey was conducted with a sample of 300 participants, in that 260 were responded. The 260 responders were medical interns and post graduates from various medical colleges in Andhra Pradesh. Mean age of the participant's ranges from 26-34 years. All participants answered all questions.

Table 1& Graph 1 summarize the true or false knowledge items with correct answers and percentage of subjects who answered correctly. Among the participants 39.8% of the people don't know the signs and symptoms of the periodontal diseases and nearly 50.8% didn't know the effect of diabetes increasing the severity of periodontal diseases. Most of the participants i.e. 75% of medical interns and post graduates knows that poor oral health may increase the risk of cardiovascular diseases but its percentage is less when compared to the results of Farah Asaad et al. study in medical interns of Saudi Arabia i.e. 92.8%.

Graph 2 shows that percentage of medical interns and post graduates exploring clinical practice behaviours/ orientations. 73.8% participants believed that the smoking is an etiological agent for periodontal disease, only 15.8 % of participants knows that the periodontal disease act as a risk factor for systemic diseases. About 52.4% people don't know that the periodontal diseases associated with low birth weight baby and 33.5% of people marked that genetics may have a role in periodontal diseases.

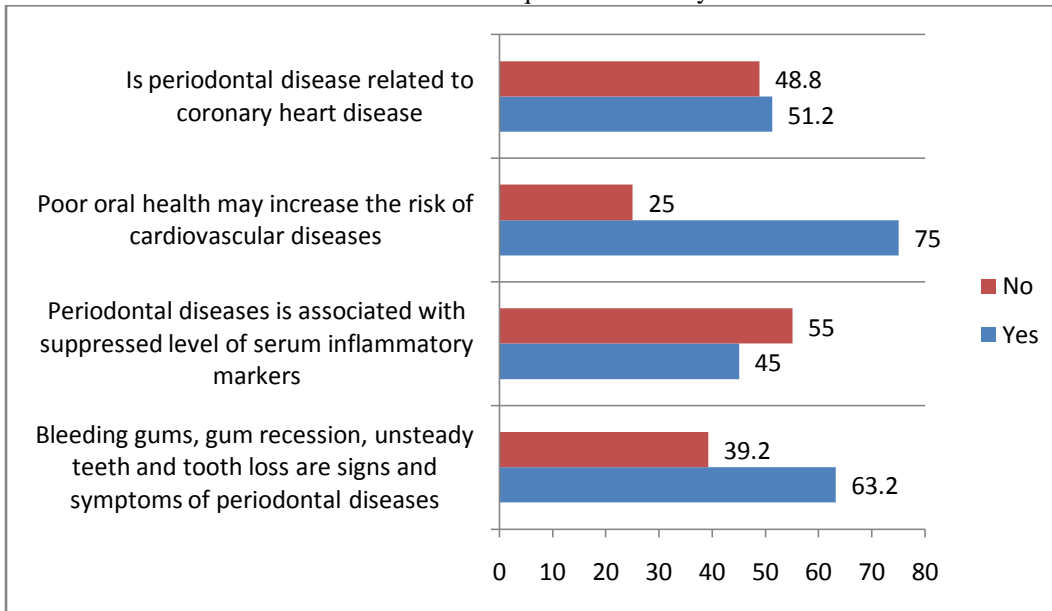
Graph 3 shows that the percentage of attitudes towards periodontal disease and perception that may influence the clinical practices. More than half of the people i.e. 44.6% never asked their patients whether they were diagnosed with periodontal diseases nor screened for it. About one fourth of the people only often referred their patients to a dentist for evaluation and care.

About 40% of the respondents disagree/ strongly disagree that discussing or evaluating periodontal status of their patients was peripheral to their role as physician. Half of the study population (53.1%) rate their knowledge about periodontal diseases and its association with systemic disease was moderate whereas only 2.3% rated as excellent and about half of the people known that periodontal disease is a risk factor for systemic diseases.

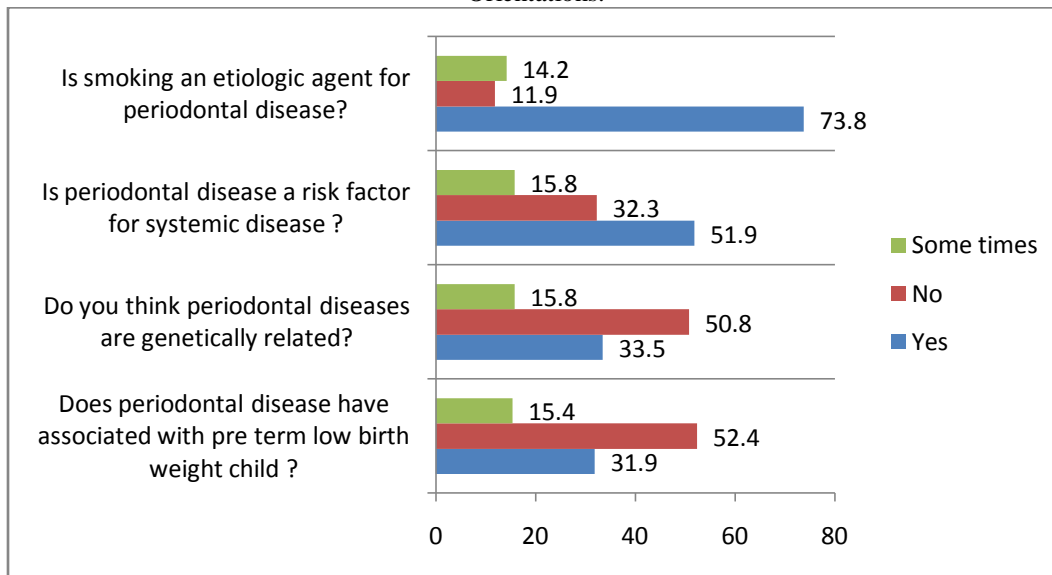
Table 1:- True/ false knowledge items with correct answer percentage of subjects who answered correctly

S.No	Question	Correct answer	Yes	No
1.	Bleeding gums, gum recession, unsteady teeth and tooth loss are signs and symptoms of periodontal diseases	True	63.2	39.8
2.	Periodontal diseases is associated with suppressed level of serum inflammatory markers	False	45	54.5
3.	Poor oral health may increases the risk of cardiovascular diseases	True	75	25
4	Is periodontal disease related to coronary heart disease	Yes	51.2	48.8
5.	Periodontal diseases are less prevalent/ severe in patients with diabetes	False	49.2	50.8

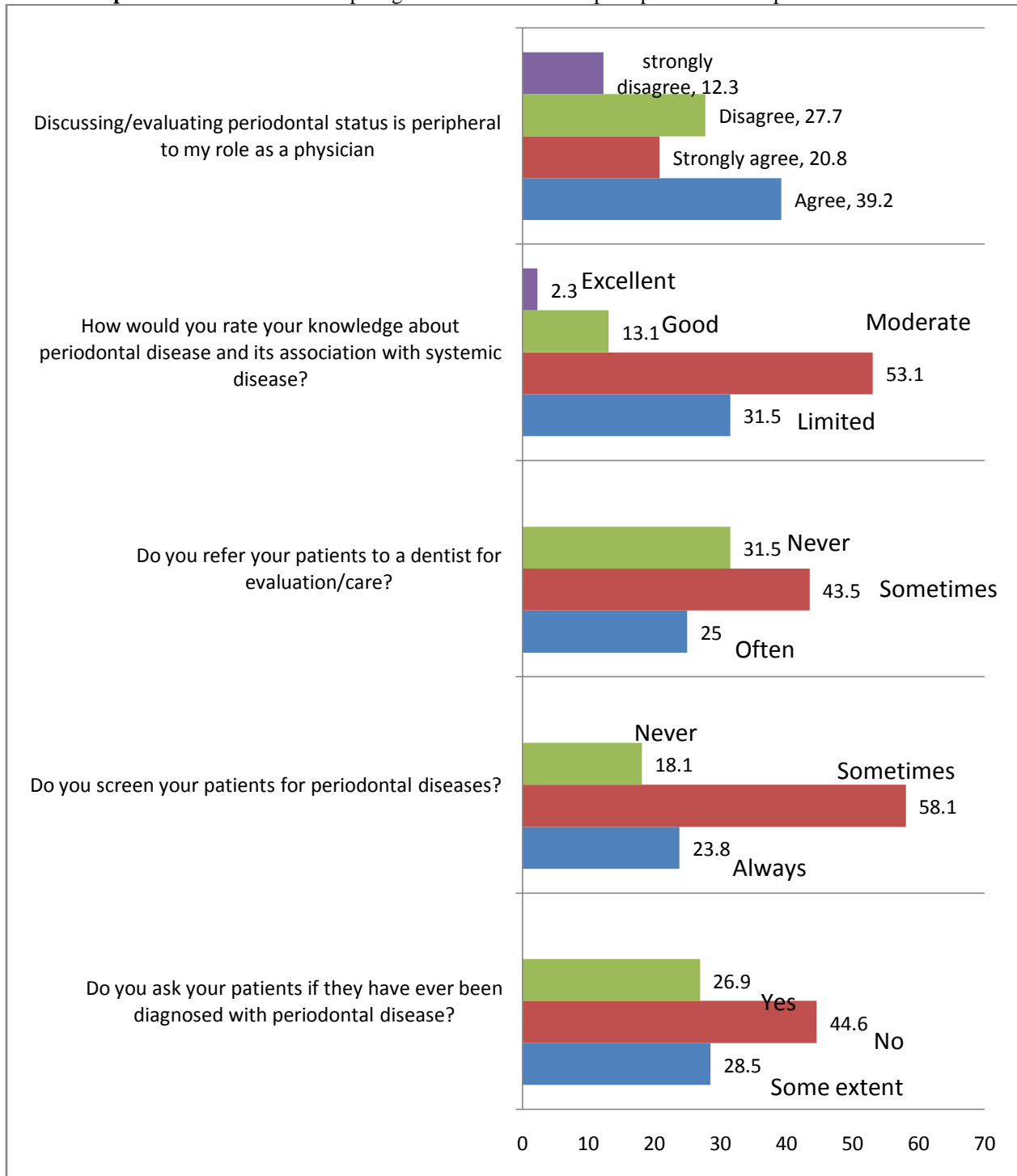
Graph 1:- shows the true/ false knowledge items with the correct answer and the percentage of subjects who answered each question correctly.



Graph 2:- Percentage of medical interns and post graduates questions exploring clinical practice behaviours/ Orientations.



Graph 3:- Medical interns and post graduates attitudes and perceptions towards periodontal disease



Discussion:-

Periodontal diseases are the most common diseases of the oral cavity caused due to the microbial interactions and host immune response. More than 500 different bacterial species are capable of colonizing the oral cavity²⁰. The wide spread of bacterial products like lipopolysaccharides throughout the body may cause interaction between periodontal and systemic diseases^{21,22,23,24}. Hence periodontal diseases may act as an independent risk factor for

systemic diseases. In this study we found that awareness of medical interns about periodontal diseases is limited. Medical interns and post graduates rarely asked about periodontal diseases when taking medical history and they were not comfortable in performing a simple periodontal examination.

Most of the medical interns and postgraduates did not have enough knowledge about the relationship between periodontal diseases and diabetes. Only 49.2% know that the periodontal disease is more prevalent in patients with diabetes.

In our study 31% of medical interns and post graduates agreed that periodontal diseases might increase the risk of premature foetal death but Farah asaadet al²⁵. showed 60% of medical interns know about the risk of periodontal diseases in pregnancy.

Our study explored the attitudes of medical interns and post graduates towards periodontal disease. 23.8% of the participants never screened for periodontal diseases in their patients and 44.6% people never asked their patients if they ever diagnosed with periodontal diseases. Nearly 40% of the participants disagree/ strongly disagree that discussing/ evaluating periodontal status is peripheral to my role as a physician. In a similar study done by Quijanoet al²⁶ in medical trainees and found that 30% strongly disagree that evaluating/ discussing periodontal status is peripheral to their role. Sometimes patients require a physician opinion regarding the dental treatment; therefore there is a crucial need of a knowledge regarding the periodontal diseases and its effects on systemic health.

Our results stated that medical interns and post graduates are not prepared or nor trained to screen their patients for periodontal diseases and they had limited knowledge about association between periodontal health and general health. Since there is a strong correlation between the periodontal and systemic health; it is wise to implement oral health education training in medical curriculum. This will results in relevant and more efficient collaboration between medical and dental professionals which will improve the overall health of a patient.

Limitations of the study include limited population size and area. Larger population size is indicated for precise observations. It is a self-reported attitudes and practices; it might be biased to what participants believe.

Our study concluded that medical interns and post graduates have limited knowledge regarding the periodontal diseases and its influence on systemic diseases. Hence the oral health education and training as a part of medical school curriculum is strongly recommended to medical council of India.

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