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RESEARCH ARTICLE

A SURVEY TO ASSESS THE AWARENESS AND KNOWLEDGE OF CLINICAL STUDENTS(III &IV BDS), INTERNS, AND POSTGRADUATES ON DENTAL CONSIDERATIONS OF PATIENTS WITH SOME SYSTEMIC DISEASES IN ANDHRA PRADESH - AN ONLINE SURVEY

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Abstract

Aim of the study: To assess the awareness and knowledge of clinical students (III& IVBDS), interns, and postgraduates on dental considerations of patients with some systemic diseases in Andhra Pradesh.

Materials and Methods: A questionnaire was made and uploaded in the form of google sheets. The survey was performed electronically for about three months, from February 1st, 2020, to May 1st, 2020. Finally, the results were obtained in the form of pie charts and were represented systematically by using Docs Editors softwarein google forms.

Results: A total of 500 members participated in the survey, out of which 63 percent of the people responded, and 37 percent of the people did not respond.

Conclusion: There is a need to inculcate information and knowledge about systemic diseases and their preventions and precautions to be taken while performing a dental treatment, particularly in clinical students.

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Introduction:-

In general, the dental patients and, in particular, the medically compromised patients, the knowledge of pathologies related to or possibly induced by prosthetic microbial plaque[1] is essential for maintaining oral health and preventing possible complications. Prosthodontic procedures should not be planned until the systemic condition of the patient is evaluated. Treatment planning considers all the diagnostic findings, systemic and local, which influence the mouth's surgical preparations, impression making, maxilla-mandibular relation records, occlusion, form, and material in the teeth. Many systemic diseases have a local manifestation with no apparent systemic symptoms, and others have both local and systemic reactions. Evaluating the patient for proper diagnosis prognosis and appropriate treatment plan is the first step in a denture treatment. A significant number of complete denture patients are beset with considerable

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impairment in general health. The preponderance of older patients seeking dentures demands a systematization of knowledge of their particular reactions and needs.[2] Competent treatment depends upon the careful evaluation of all available information, a definitive diagnosis, and a realistic treatment plan that offers a precise diagnosis. Treating the patient for a denture health service is an extremely complex and challenging procedure that must be altered to meet the technical, anatomical, biological, psychological, and instructional needs of the individual.[3] Thus, the treatment's success depends not only on the oral tissues of the patient but also on his overall general health and attitude. There is significantly lessliterature available regarding knowledge and awareness of systemic diseases about dental considerations. Hence this study was undertaken to assess the awareness and knowledge of clinical students (III&IVBDS), Interns, and Postgraduates on dental considerations of patients with some systemic diseases in Andhra Pradesh.

Materials and Methods:-

After literature search, a questionnaire (Annexure-1)was made and uploaded in google sheets.The email IDs of the students were obtained from the IDA state branch, District IDA branches as well different social media through Whatsapp groups, and the questionnaire was sent to various email id's. This study was performed among clinical students (III & IV BDS), postgraduate students, and interns by conducting an online survey in the google sheet. A total of 40 questions were made, which were divided into three parts in which. The first section contained questions regarding demographic data, the second section contained information regarding awareness about systemic diseases, and the third section included questions regarding knowledge about systemic diseases and the necessary precautions and preventive measures to be taken while performing the dental treatment. The survey was conducted for 3 months of duration from 1-02-2020 to 1-05-2020. The google sheets were sent to various email id's. This sheet was sent to about 500 email IDs and waited for about three months for the responses. At the end of 3 months, about 67 percent of the people responded, and 37 percent of the people did not respond. Of those 67percent of the people who responded about 70 percent of them gave almost correct answers, and the rest of the people went wrong with few questions.

Finally, the results were obtained in the form of pie charts and were represented systematically by using Docs Editors software in google forms.

Results:-

The results were obtained in the form of quantitative data, which was represented in the form of a pie chart for each and every question determining the frequency of answers according to the percentage obtained.

Figure-1 represents the overall awareness of the survey population which indicates that more significant number of people were not aware of prosthodontics and systemic interrelationship. Figure -2 denotes the overall performance of interns, postgraduates, and clinical students (III &IV BDS) regarding the correct and wrong answers. Among them, 30%-40% of the clinical students gave incorrect answers, around 30-35% of interns have given wrong answers, and only about 15 to 20% of the interns have given wrong answers, which indicated that the awareness is mainly present in postgraduate students when compared to that of clinical students and interns. Figure-3 depicts the awareness and knowledge regarding various systemic diseases.

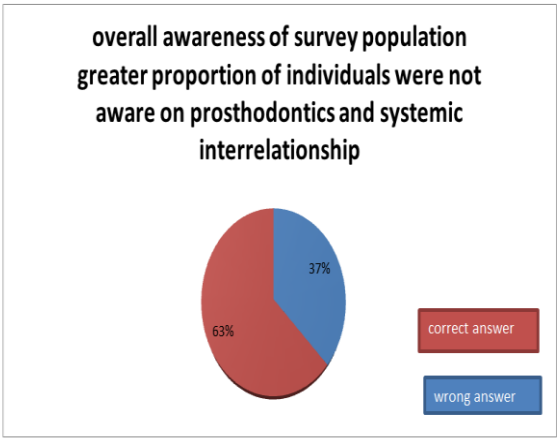

Figure 1:- overall awareness of survey population.

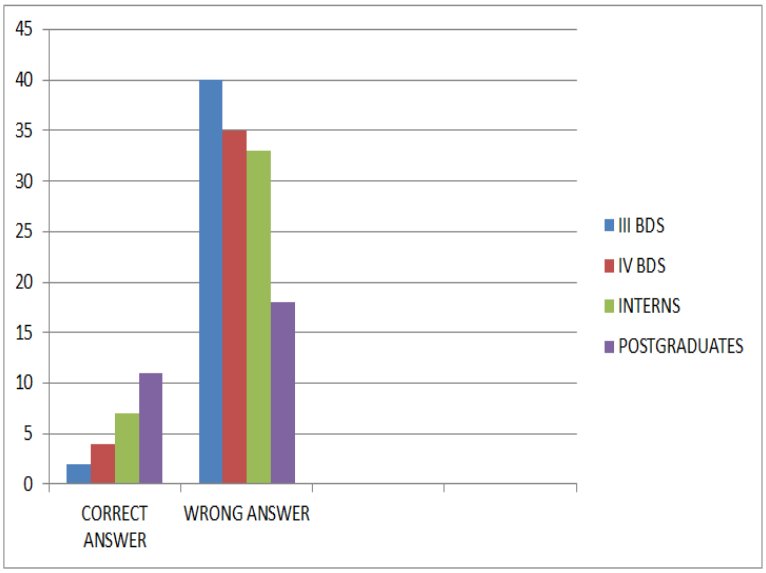

Figure 2:- Overall awareness of survey population.

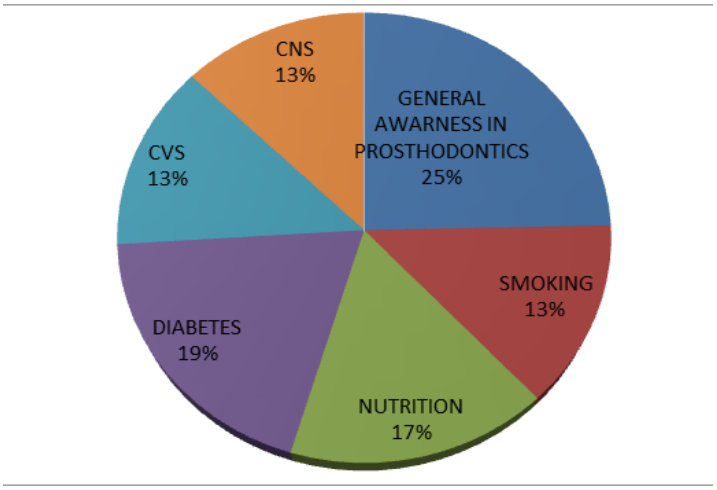

Figure 3:- Awareness based on categories of questions and distribution of knowledge among the question categories.

Discussion:-

Systemic diseases may be thought of as an erosion of an organreserve or the ability to respond to internal or external stress. This diminished adaptive capability results in increased potential for system failure due to maxillofacial pathologies and their surgical procedures. From this, perspective it is essential to know about patients, a systemic disease, reduce the amount of tissue damage and improve strategic reserve.

Rothwell P S and Wragg S [4], stated on medical status awareness, majority of patients had systemic diseases, but they are not aware of the same. Whereas in the present study, most of the postgraduate students were aware of the systemic conditions and its correlation between dental treatment but the undergraduate clinical students(375) and interns(75) the awareness levels are significantly less.

Cottone H A and Katyraya H[5] carried out a survey to procure information on systemic diseases of dental patients and the frequency of drug used by patients for managing them. Two-third of the total patients studied were having positive medical history for at least one problem, and more than 50 % of the patients reported multiple medical problems.

Goss N [6] studied systemic diseases in terms of adverse reactions between systemic diseases and dental treatment and the need for emergency management. Dental treatment of these patients may interact essentially with the stability of systemic conditions like co-operation in epileptic or mentally disabled patients, bleeding in patients on anticoagulant therapy, altered healing in diabetes mellitus, and long-term steroid therapy.

Jean J H and Nam I W [7] surveyed oral surgery patients and found an incidence of 4.3 % for systemic diseases in oral surgery patients. A similar study was done by Hari S, Jacob O A, and Mangalam M K[8], who collected clinical data regarding medical conditions and medications used by the patients. Out of 900 patients studied, 131 (3.3 %) had systemic diseases.

A trend I B[9] tried to evaluate medically compromised patients in terms of their extent, scope, referrals, and emergencies related to them. In average, 6.6 % patients are seen as medically compromised in Norwegian dental practice with the domination of cardiovascular disorder.

The systematic screening of at-risk subjects requires an examination and history of the disease. Once identified, these patients should receive special attention. Immunocompromised and polymedicated patients can see their quality of life affected by ingestion or aspiration of microorganisms from the prosthetic microbial plaque. Therefore, we should be vigilant and monitor the flora while controlling it long-term by appropriate hygienic means. Indeed biofilms, dental plaque, and DP cannot be eliminated. Only the pathogenic nature of these biofilms can be controlled by reducing the total microbial load with appropriate oral hygiene methods that include daily brushing, flossing, and rinsing with antimicrobial mouth rinses. The prevention and management of the associated sequelae, including denture disorders, justify the possible impact on specific systemic diseases.

Clinical studies have reported that disrupting the biofilm may be more important than the use of antifungal or antimicrobial agents in the prevention and treatment of denture stomatitis.

Preventing the formation of a biofilm on the surface of the dentures is vital to maintain hygiene compatible with the balance of oral health. Surface free energy, contact angle, and surface roughness control the initial adherence of bacteria to the denture.

For preventing polishing techniques on the surface roughness of acrylic denture base resin was the most effective, and resin monomer has antimicrobial effects against oral bacteria.

Basic hygiene is even more critical for high-risk patients as patients with xerostomia, those with a history of denture stomatitis, and those with motor disabilities, oral cancer, diabetes, immunosuppressant, and pulmonary and gastrointestinal diseases. Studies have similarly identified that removable partial dentures are susceptible to plaque accumulation. This has been attributed to a lack of awareness of the need for good denture hygiene by patients and the lack of a regular recall system.

Many older vulnerable adults that wear dentures have oral microbial ecology determined by their diet; the latter is usually high in sugar. In these conditions, the local environmental change. The interactions between the resident flora and the new arrivals serve to promote or discourage the survival and growth of the individual species. Among the nutrient sources, carbohydrates play an essential role in the pathogenesis of fungal infections. Dietary carbohydrates can modulate the development of **C. Albicans** biofilms on the denture material surface. During the early stages of biofilm development, the presence of glucose increased metabolic activity. For the mature biofilms, starch with glucose or sucrose showed the highest metabolic activity. Finally, diet can influence the proportions of different bacterial species later in biofilm development.

Conclusion:-

The successful management of patients begins right from the medical history to the treatment plan, in which much consideration has to be given to the systemic status of the individual. The practitioner neglecting the systemic status in the history will step into more serious complication at the cost of individual life. According to this survey,in the end, there is a need to inculcate lots of information and knowledge about systemic diseases and their preventions and precautions to be taken while performing dental treatment.

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QuestionnaireAnnexure -1

Personal information:

1. Your Designation?
   a. III rd BDS
   b. IV th BDS
   c. Intern
   d. Postgraduate student
2. Gender?
   a. Male
   b. Female

Awareness related:

3. Do systemic diseases influence dental treatment?
   a. Yes
   b. No
4. Should patient be enquired before dental treatment if he/she is having or suffering from any systemic disease?
   a. Yes
   b. No
5. Will there be any oral manifestations associated with systemic diseases?
   a. Yes
   b. No

Knowledge related:

6. Macrodontia is associated with?
   a. Acromegaly
   b. Pituitary Gigantism
   c. Hypoparathyroidism

d. Hyperparathyroidism

7. Macrolide antibiotics are usually avoided in asthmatics because:
   a. It can precipitate asthmatic attack
   b. It interacts with theophylline
   c. Such patients are allergic to pencillin
   d. Such patients show pencillin resistance

8. A progressive increase in mandibular length and in mandibular interdental spacing in an adult patient is characteristic of:
   a. Periodontosis
   b. Hyperthyroidism
   c. Hyperpituitarism
   d. Hypoadrenalism

9. Shock lung is seen in?
   a. Hypovolemic shock
   b. Septic shock
   c. Anaphylactic shock
   d. Neurogenic shock

10. Which of the following oral manifestations can be seen in asthmatics?
   a. Xerostomia
   b. Geographic tongue
   c. Enamel hypoplasia
   d. Apthous ulcer

11. one of the following is a feature of acromegaly?
   a. Macroglossia
   b. Microglossia
   c. Macrognathia
   d. Micrognathia

12. Endocarditis prophylaxis is recommended in one of the following before dental treatment?
   a. Cardiac pacemakers
   b. Mitral valve prolapse
   c. Tetralogy of fallot
   d. Implanted Defibrillators

13. Diabetes Mellitus is characterized by:
   a. Polyuria
   b. Polydipsia
   c. Hyperglycemia
   d. All of the above

14. In a patient with cardiac pacemaker , which one of the following is not a concern to dentist?
   a. MRI
   b. Ultrasonic scaler
   c. Electrocautery
   d. Radiographic equipment

15. In a patient with splenectomy, which of the following is not a concern to dentist?
   a. Antimicrobial prophylaxis
   b. Thrombocytopenia
   c. Corticosteroid therapy
   d. Bleeding dyscriasis

16. Choose one of the following medications that can be safely administered to a patient with chronic renal failure without any changes in dosages?
   a. Doxycycline
   b. Gentamycin
   c. Amoxicillin
   d. Ciprofloxacin

17. Which of the following procedures will not need any antibiotic prophylaxis to minimize the risk of bacterial endocarditis?
   a. Prosthodontic treatment

b. Orthodontic treatment
c. Suture removal
d. Root planing

18. A patient with liver transplant, who is on immunosuppressive medication , presented with white straited lesions , indicative of?
a. Graft vs host disease
b. Oral lichen planus
c. Lichenoid reaction
d. Leukoplakia

19. What crystals are deposited in TMJ in gouty arthritis?
a. Monosodium urate
b. Calcium hydroxyapatite
c. Calcium pyrophosphate
d. Calcium dihydroxide

20. Glycosylated heamoglobin (Hb A1) assay is used for monitoring of?
a. Cardiovascular diseases
b. Bleeding disorders
c. Renal disorders
d. Diabetes mellitus

21. Elevated blood pressure secondary to fear and anxiety from a health care provider is known as?
a. White coat hypertension
b. Prehypertension
c. Hypertensive urgency
d. Hypertensive emergency

22. What is best replacement for factor VIII in heamophilia - A ?
a. FFP
b. Cryoprecipitate
c. Whole blood
d. Factor VIII

23. Why erythromycin and tetracyclines are prescribed carefully in patients with peptic ulcers?
a. Increased acid production
b. Interacts with acid and drug availability is reduced
c. Interacts with antacids if any
d. Both are bacteriostatic

24. A patient on corticosteroid therapy shows all except the following features?
a. Impaired wound healing
b. Minor difficulties to achieve haemostasis
c. Xerostomia
d. Susceptibility to infections

25. Ideal time to perform dental treatments in patients with diabetes?
a. Early morning
b. Afternoon
c. Evenings
d. No specific time

26. Drugs that cause xerostomia in patients?
a. Anticholinergics
b. Anorectics
c. Antihypertensives
d. All of the above.

27. Use of epinephrine for gingival retraction is contraindicated in patients with?
a. Cardiovascular diseases
b. Bleeding disorders
c. Diabetes mellitus
d. Parkinsonism

28. People complain of tightness in dentures suffering from:
a. Paget's disease

b. RRR
c. Diabetes Mellitus
d. Osteoporosis

29. Primary impression technique followed in patients with diabetes?
a. Mucostatic
b. Mucocompressive
c. Both of the above
d. None of the above

30. Patients complain of difficulty in insertion and cleaning of dentures in the following condition?
a. Osteoarthritis
b. Hyperthyroidism
c. Cardiovascular diseases
d. Parkinsonism

31. Dysphagia and altered gag reflex are mainly associated with patients suffering from the following disease?
a. Parkinsonism
b. Asthma
c. Renal diseases
d. None of the above

32. A material without methyl methacrylate is indicated mainly in patients with?
a. Asthma
b. Bleeding disorders
c. Diabetes
d. Liver diseases

33. Prosthetic modifications that can be done for patients suffering from diabetes mellitus, while fabricating complete dentures include?
a. Broad area of tissue coverage
b. Decrease buccolingual width of teeth
c. using semi anatomic or cuspless teeth
d. all of the above

34. Patients with renal diseases show the following oral manifestations?
a. loss of trabeculation
b. total or partial loss of lamina dura
c. both of the above
d. none of the above

35. Patient is said to be hypertensive when the blood pressure shows _____ mm of Hg:
a. 120/80
b. 140/90
c. 160/100
d. 160/100

36. Patients with epilepsy will have the following oral conditions?
a. Poor oral hygiene
b. Dental caries
c. Gingival enlargement
d. All of the above

37. Which of the following conditions does edentulous patient suffering from cerebral palsy have?
a. Input signals from the muscle spindles are decreased
b. Difficulty in mandibular movements
c. Not able to recieve information from periodontal ligament
d. all of the above

38. One should be carefull while performing dental treatment in patients with epilepsy because there might be?
a. injury to the patient
b. increased bleeding
c. gag reflex
d. all of the above

39. Dental treatments like extractions should not be performed in hypertensive patients because there will be:
a. profuse bleeding

b. drug interactions in patients on antihypertensives
c. both of the above
d. none of the above

40. Patients who are epileptic and are on carbamazepine therapy for prolonged period have?
a. Thrombocytopenia
b. Dizziness
c. drowsiness, headache
d. all of the above

41. A chronic condition affecting body movement and muscle coordination is:
a. Cerebral palsy
b. Epilepsy
c. CVS disorders
d. Tonic clonic seizure.