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Systemic Disorder Among Completely Edentulous Patients -A Retrospective Study

Research Article

Amanthi Ganapathi[1], Dhanraj Ganapathy[2*], M. Jeevitha[3]

[1] Saveetha Dental College and Hospital, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai 600077, Tamil Nadu, India.
[2] Professor and Head, Department of Prosthodontics, Saveetha Dental College and Hospital, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai 600077, Tamil Nadu, India.
[3] Senior lecturer, Department of Periodontics, Saveetha Dental College and Hospital, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai 600077, Tamil Nadu, India.

Abstract

Evaluating the patients or proper diagnosis, prognosis and appropriate treatment plan is the first step in denture treatment. A significant number of patients with complete denture treatment are best with significant impairment on general health. The main objective of the study is to find out the prevalence of systemic disease among complete dentures in patients attending Saveetha Dental College and hospitals. It is a retrospective study where 86,000 case sheets were assessed out of which 390 complete denture patients were assessed regarding their general health. Total of 390 complete denture patients out of which 171 female patients and 219 male patients. Patients without any systemic disease stands for 64.19%, Patient with diabetes Mellitus accounts for 21.48%, 5.37% accounted for patients with Blood pressure, 1.28% accounted for cardiac problems, Patients with both diabetic and blood pressure accounted for about 5.37%, and the prevalence of diabetes mellitus was found to be higher when compared with other systemic disease when taken into account. And also it was found in our study that male population were affected more when compared to female population.

Keywords: Systemic Disease; Complete Denture; Diabetes Mellitus; Blood Pressure.

Introduction

Evaluating the patients or proper diagnosis, prognosis and appropriate treatment plan is the first step in denture treatment. A significant number of patients with complete denture treatment are best with significant impairment on general health [41]. Predominantly older population tends to seek for denture demands a systemization of knowledge of their special needs and reaction are important. Complete denture treatment depends upon the evaluation of available information. So, that a definitive treatment planning and along with patients assessment can be done [26]. Planning a treatment for denture health service is an extremely complex and challenging procedure that must be altered to meet the technical, anatomical, biological, Psychological and Instructional need of the patients. Thus the overall health of the soft tissue area and the attitude of the patient gives along a major contribution [48].Various systemic disease play a crucial role in deciding treatment option in dentistry. Almost all the procedures done in the field of prosthodontics will require a good systemic health or a well-balanced systemic condition (Singh, no date). Now a days improved quality of life , together with reduced mortality rates, has termoundesly increased the elderly population worldwide. Several studies have failed to explain the correlations between either patient satisfaction with their dentures and their quality or denture satisfaction and quality of the denture-supporting areas [14, 6].

In Spite of global decrease in edentulism, with great numbers of people reaching an advanced age, the number of patients without teeth continues to be high [16, 44]. In India, being a developing country and having a huge population, there is a lack of awareness and management of the edentulous state and the rehabilitation of edentulous patients with complete dentures [42]. Among the most important goals of dental care is helping patients in their

***Corresponding Author**:
Dhanraj Ganapathy,
Professor and Head, Department of Prosthodontics, Saveetha Dental College and Hospital, Saveetha Institute of Medical and Technical Sciences, Saveetha University, Chennai 600077, Tamil Nadu, India.
Tel: +91-9841504523
E-mail: dhanraj@saveetha.com

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attempts to reach an acceptable level of satisfaction with their oral cavity and dentition [42, 46]. The literature contains many studies exploring the unique and vague relationship between psychological profiles and satisfaction with the dental status in many fields of dentistry [8]. Different socio-demographic variables, such as age, gender, and systemic disease, which may affect the satisfaction with complete dentures. Several studies have failed to show strong correlations between either patient satisfaction with their dentures and their quality or denture satisfaction and the quality of the denture-supporting tissues [5, 54].

There are various diseases that are a major concern in prosthodontics.Cardiovascular Disease-Hypertension, Endocrine Disease-Osteoporosis, DiabetesMellitus, Hyper/Hypothyroidism, Hyper/Hypoparathyroidism. Before placement of any prosthesis it is important for measurement of the area for proper delivery of the prosthetics, and there are various factors which affects this condition because of any local factors such as bone deformities or the soft tissue defect [19, 4]. For certain diseases the drugs which is administered causes changes as a side effect of the drugs which is used for the treatment [40, 47]. The main objective of the study is to find out the prevalence of systemic disease among complete dentures in patients attending Saveetha Dental College and hospitals.

Previously our team has a rich experience in working on various research projects across multiple disciplines. (Jain, 2017 [18]); (Varghese, Ramesh and Veeraiyan, 2019 [50]); (Ashok and Ganapathy, 2019 [2]); (Padavala and Sukumaran, 2018 [27]); (Ke et al., 2019 [21]); (Ezhilarasan, 2018 [10]); (Krishnan et al., 2018 [22]); (Ezhilarasan, Sokal and Najimi, 2018 [12]); (Pandian, Krishnan and Kumar, 2018 [29]); (Ramamurthy and Mg, 2018 [34]); (Gupta, Ariga and Deogade, 2018 [15]); (Vikram et al., 2017 [53]); (Paramasivam, Vijayashree Priyadharsini and Raghunandhakumar, 2020 [30]); (Palati et al., 2020 [28]); (Samuel, Acharya and Rao, 2020 [39]). Now the growing trend in this area motivated us to pursue this project.

The aim of the study is to analyse the prevalence rate of systemic disease in completely edentulous patients.

Materials and Methods

Study design and study setting:

The study was a retrospective study. The data was collected from the hospital patient case sheet record by viewing 86,000 patients' records. Patients who review complete denture in Undergraduate clinics and also in Department of Prosthodontics and Department of Oral Medicine of Saveetha Dental College and Hospitals were taken into account for this study. The data collected data belongs to the duration of June 2019-March 2020.The ethical approval for the research (SDC/SIHEC/2020/DIASDATA/0619-0320) was issued by the ethical committee of Saveetha Dental College, Saveetha Institute of medical and Technical science, Saveetha University, Chennai. The Inclusion Criteria were complete denture Wearers of both genders and all age groups. Patients with major physical disabilities, mentally retardant patients, HIV-AIDS patients were excluded. Total of 390 complete denture wearers were identified. Out of which 171 were female patients and 219 were male patients. The data was collected from patient reports in hospitals, The obtained data was entered in Microsoft excel 2012 .Then exported to statistical package for social science for windows (version 20.0.SPSS Inc., Chicago III, USA) and all subjected to statistical analysis.

Results

In our study the obtained information is that about 250 patients didn't have any systemic disease and were physically healthy. Figure 1 shows the gender distribution in our study, where blue colour represents the female population which is about 43.99%, and Green colour represents the Male population which is 56.01%

Figure 1: Pie chart shows the gender distribution in our study, where the Female population (Blue) is about 43.99%, and Male population (Green) which is 56.01% which is found to be 56.01%.

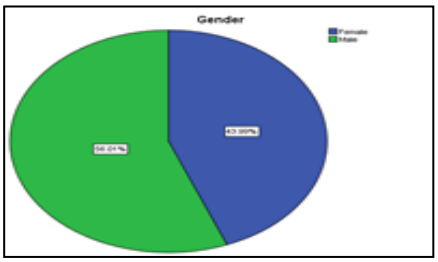


Figure 2: Bar graph shows patients with and without any systemic disease were 64.19%,Patient with diabetes Mellitus accounts for 21.48%,5.37%accounted for patients with Blood pressure,1.28% accounted for cardiac problems, Patients with both diabetic and blood pressure accounted for about 5.37%,Other diseases such as Asthma, liver disorder, thyroid disorder, blood pressure and thyroid, blood pressure and systemic lupus erythema, diabetics and lichen planus, blood pressure and cardiac problems, diabetes mellitus ,thyroid, blood pressure and cardiac problem each one accounts separately for 0.26%.

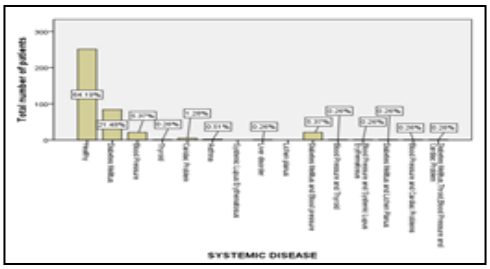


Figure 3: Bar graph shows the association between gender and systemic disease. Bar graph X-Axis represents the various systemic diseases and the Y-Axis shows the number of patients who are involved in the study. Both the males and females had similar distribution of systemic illness with no statistically significant differences. (Pearson Chi square test;P=0.363,P>0.05). It is shown that both the male and female patients are not affected with any systemic disease.

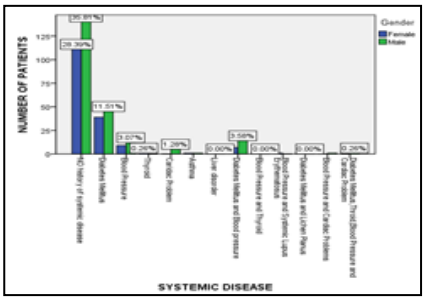
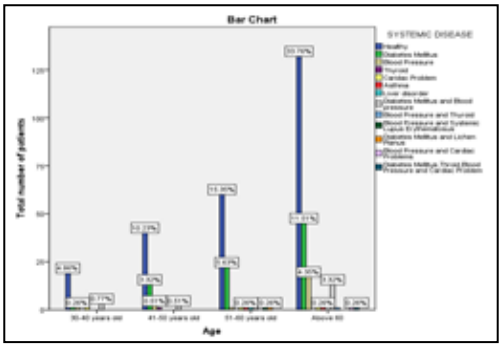


Figure 4: Bar graph shows the association between age and systemic disease-Axis represents the age and systemic disease and health, the Y-Axis shows the number of patients who are involved in the study. In all the age group it is found that patients with no systemic disease are present more in number when compared to others. All the age groups had similar distribution of systemic illness with no statistically significant differences. (Pearson Chi square test;P=0.381,P>0.05).Completely edentulous patients with no systemic disease are present among all the age groups.



which is found to be higher. Figure 2 shows the. Distribution of patients with and without any systemic disease accounts for 64.19%, Patient with diabetes Mellitus accounts for 21.48%, 5.37% accounted for patients with Blood pressure, 1.28% accounted for cardiac problems, Patients with both diabetic and blood pressure accounted for about 5.37%, Other diseases such as Asthma, liver disorder, thyroid disorder, blood pressure and thyroid, blood pressure and systemic lupus erythema, diabetics and lichen planus, blood pressure and cardiac problems, diabetes mellitus, thyroid, blood pressure and cardiac problem each one accounts separately for 0.26%.

Figure 3 shows the association between the gender and Systemic disease. Total of 2 patients were affected with Asthma out of which one female and one male patient was affected with Asthma. Total of 21 patients were affected with Blood pressure out of which 9 female patients and 12 male patients. Only one female patient was affected with Blood pressure and thyroid and also only one male patient was affected with Blood pressure and cardiac problems. Total number of patients affected with Diabetes mellitus was found to be 84 out of which 39 female patients and 45 male patients. Only one male patient was affected with Diabetes mellitus, Blood pressure, Thyroid, Cardiac problems. Total of 21 patients were affected with Diabetes Mellitus and Blood Pressure out of which 7 female patients and 14 male patients. Only one female patient was affected with Diabetes mellitus and lichen planus. One female patient was affected with Liver disorder. Patient affected with Thyroid problem was only one female patient, Both the males and females had similar distribution of systemic illness with no statistically significant differences. (Pearson Chi square test; P=0.363,P>0.05). Figure 4 Bar graph shows the association between age and systemic disease-Axis represents the age and systemic disease and health , the Y-Axis shows the number of patients who are involved in the study. In all the age group it is found that patients with no systemic disease are present more in number when compared to others. All the age group had similar distribution of systemic illness with no statistically significant differences.(Pearson Chi square test; P=0.381, P>0.05). Patients with no systemic disease are present among all the age groups.

Discussion

In our study it was found that most of the complete denture wearer that is about 64.1% didn't have any systemic disease. And talking about patients with systemic disease 21.5% has diabetes mellitus compared to other systemic diseases. It was found in our study that male population were affected more with systemic disease when compared to female patients.

Various articles have been published in relation to the systemic disease and prosthesis. Special role of each systemic disease on the oral cavity of the patient with dental prosthesis [4]. These are some of the common conditions affecting the treatment methodology, treatment plan, Oral manifestation, Risk factors for the dentists and auxiliary personnel. Some studies have been done on the level of patients satisfaction with the denture among patients with systemic disease. And it was also found in their study that some of the diseases had a strong connection to emotional stress or impacting mental health [14, 17]. One of the most important factor which needs to be addressed while handling the complete denture or any dental prosthesis is the esthetic aspect of it, as they give life to the prosthesis(Ashok and Suvitha, [3, 36]. In fixed

prosthesis the choice implant placement and abutment choice is crucial proper measurement and engineering of the prosthesis must be done, and the main factor while insertion is the choice of luting cements [9, 1].

One of the most prevalent and common systemic conditions amongst denture wearers is Diabetes Mellitus in our study. It is a complicated metabolic disease which is characterized by hypofunction or lack of function of the beta cells of the islets of Langerhans in the pancreas, leading to high blood glucose levels and excretion of sugar in the urine [25]. Problems which are associated in a patient with diabetic mellitus can be periodontal breakdown, abscess formation, xerostomia and then leads mucosal abrasion and ulceration, and progression of bone resorption over time [49].

Some studies have shown that there is an increased incidence of oral candidiasis [13, 32]. Patient with Poorly controlled diabetic respond much less favourably, and short-term improvements in periodontal health are frequently followed by regression and by recurrence of disease So the best time to plan dental treatment to occur either before or [24] after periods of peak insulin activity [24]. The clinician must be aware of the risk of a hypoglycemic attack. In cases of a xerostomia, patient should be encouraged to sip water throughout the day, an ethanol free rinse containing aloe or lanolin, any water-soluble jelly or a saliva substitute containing carboxymethyl cellulose or mammalian mucin can also be given. The treatments of each person have many similarities but, the treatment for each specific needs of the individual will be different. It must be attended and properly take care. Intelligent effective treatment will meet the specific needs of Individual patients. However for complete satisfaction of the patients with dentist must modify the treatment protocol. And also proper instructions must be given to the patients regarding the maintenance of the complete denture.

Our institution is passionate about high quality evidence based research and has excelled in various fields ((Pc, Marimuthu and Devadoss, 2018 [31]; Ramesh et al., 2018 [35]; Vijayashree Priyadharsini, Smiline Girija and Paramasivam, 2018 [52]; Ezhilarasan, Apoorva and Ashok Vardhan, 2019 [11]; Ramadurai et al., 2019 [33]; Sridharan et al., 2019 [45]; Vijayashree Priyadharsini, 2019 [51]; Chandrasekar et al., 2020 [7]; Mathew et al., 2020 [23]; R et al., 2020 [37]; Samuel, 2021 [38]). We hope this study adds to this rich legacy.

Conclusion

The prevalence of systemic disease among completely edentulous patients was moderate with 35.81% .Diabetes mellitus was the most common systemic disease and male patients were mostly affected when compared to the female populations.

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