ORAL HEALTH STATUS AND TREATMENT NEEDS AMONG 6-12 YEARS OLD CHILDREN VISITING A PRIVATE DENTAL HOSPITAL IN CHENNAI

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Oral health is an essential component of health throughout life. However millions of individuals suffer from dental caries and periodontal disease, resulting in unnecessary pain, difficulty in chewing, swallowing and speaking and increased medical costs. To access the prevalence of dental caries among 6- 12 year old children, using available data from hospital case records. The study was conducted to evaluate the oral health status and treatment needs which could be used to plan community based oral health promotion, fluorides and preventive oriented public dental health care services. The study was conducted among 1276 childrens who visited Private Dental hospitals of age groups between 6 to 18 years. Data was collected and tabulated in Excel. Data was analysed using SPSS. Even though dental caries increase with age, no significant difference was found between the age group with respect to oral health status and treatment needs. In the present study, it has been concluded that Dental health education and caries preventive programs are needed to minimize caries among children.

KEYWORDS: Children, Dental Caries, Gingivitis, Malocclusion,Oral health Status, Treatment needs

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INTRODUCTION:

Oral Health is an essential component of health throughout life. According to Horowitz and Coworkers oral cavity is associated with the development of health personality, perception and the overall experience of pleasure. Oral health of children is associated with oral health knowledge of their parents as oral health-related habits are established during infancy and maintained throughout early childhood. The ability to chew and swallow is a critical function required to obtain essential nutrients for the body (The building blocks of general health). However millions of individuals suffer from dental caries and periodontal disease, resulting in unnecessary pain, difficulty in chewing, swallowing and speaking, and increased medical costs.

Untreated Oral disease in children frequently leads to serious general health problems, significant pain, interference with eating and lost time (Biesbrock, Walters and Bartizek, 2003). One of the factors to be considered when planning for the required growth in dental care facilities is the prevalence of dental caries disease and their treatment needs in the population.Dental caries is the most common chronic disease of childhood that interferes with normal nutrition intake, speech, and daily routine activities. Dental caries is a lifetime disease, and the highest priority risk group is school children(Prabakar, John and Srisakthi, 2016).

Dental carious lesions and cavities commonly occur in pits and fissures of the occlusal surfaces in primary and permanent posterior teeth (Prabakar, John, Arumugham, Kumar and Sakthi, 2018). Pits and fissures of teeth have been recognized as the most susceptible areas for initiation of caries (Khatri *et al.*, 2019). Pit and fissures are approximately eight times more vulnerable than the smooth surface caries lesion (Prabakar, John, Arumugham, Kumar and Srisakthi, 2018).Most of freshwater bodies are getting polluted, thus decreasing the portability of water (Kumar and Preethi, 2017). Dental fluorosis produces widespread brown stains on teeth and may cause pitting (Pradeep Kumar and Vijayalakshmi, 2017). Although dentists constitute an important aspect of the health team, their capacity has not been stressed (Kannan *et al.*, 2017). Children suffering from ECC are found to have alteration in growth and development, speech disorder, and negative effect on successor permanent teeth(Samuel, Acharya and Rao, 2020). Over the past 70 years, SSCs have been placed on primary and permanent molars to restore teeth with multi surface caries, in patients with high caries risk, after pulp therapy and restore teeth with developmental defects and teeth that are brittle and

prone to fracture (Mebin George Mathew *et al*., 2020). Hence, this time, an attempt has been made to evaluate the oral health and their treatment needs of the children 6-12 years old visiting Private dental college.Now the aim of this study is to assess the prevalence of dental caries among 6- 12 year old children, using available data from hospital case records. Our team has extensive knowledge and research experience that has translate into high quality publications(Kamisetty *et al*., 2015; Patturaja and Pradeep, 2016; Felicita, 2017; Jain, 2017; Kumar, 2017) (Neelakantan *et al*., 2011; Jain, Kumar and Manjula, 2014; Kamisetty *et al*., 2015; Varghese *et al.*, 2015; Azeem and Sureshbabu, 2018).The study was conducted to evaluate the oral health status and treatment needs which could be used to plan community based oral health promotion, fluorides and preventive oriented public dental health care services

METHODS AND MATERIALS:

A retrospective study was carried out in a hospital setting among patients visiting a dental hospital among a predominantly South Indian population. A total of 1276 patients with a history of dental disease were selected from the dental Case records. The data on Gingivitis, Malocclusion, Missing Teeth, Crown, Trauma and Dental Caries was obtained. The case sheets of the patients were collected from the time period of June 2019 to March 2020 within the age range 6 to 12 years of age. Cross verification was done by reviewing the patients' intraoral photographs. Patients with a history of systemic diseases were excluded from the study whereas patients with a history of Dental disease and within the age group of 6 to 12 years were included in the study. Incomplete data was excluded from the study due to the possibility of bias. The advantage of this methodology was the ease of access.The present study was ethically approved by the Institutional Ethical Committee [SDC/SIHEC/2020/DIASDATA/0619-0320]. The data was collected, tabulated and Pearson Chi-square tests were performed using SPSS by IBM.

RESULTS AND DISCUSSION:

A total of 1276 children were reviewed, only 560 (257 females and 303 males) children had Dental problems (43.8%). Out of 560 children, 54 children were 6 years old (9.6%), 89 children were 7 years old (15.9%), 79 children were 8 years old (14.1%), 83 children were 9 years old (14.8%), 110 children were 10 years old (19.6%), 73 children were 11 years old (13.0%) and 72 children were 12 years old (12.9%).

Figure:1 shows association between Age and Gender of the patients with Oral health disease. Male patients (20.8%) had higher prevalence of Oral Health disease at age of 10 years compared to Female patients (18.3%). Chi square test was performed and association between Gender and Generalised Chronic periodontitis was found to be statistically not significant. Pearson Chi square Value = 0.081 (P>0.005), hence statistically not significant.

Figure:2 shows the distribution of oral health disease of the study population. Dental Caries was the most common problem (59.1%) among the children.

Figure:3 shows the distribution of treatment needs of the study population. The restoration was the most common treatment needed for patients (59.1%) compared to others.

Figure:4 shows the comparison of gender wise distribution of treatment needs of children. Root canal treatment (64.0%) was the most common treatment required among the female patient and Orthodontic treatment (63.3%) was the most common treatment required among the male patient. Chi square test was performed and association between Gender and Treatment needs required for the patients with Oral Hygiene Status was found to be statistically not significant. Pearson Chi square Value = 0.164 (P>0.05), hence statistically not significant.

Oral health has always been an inseparable part of general health and affects the total wellbeing of individuals. The unique characteristic of oral and dental diseases is that they are universally prevalent and do not undergo remission or termination if untreated and require technically demanding expertise and time consuming professional treatment (Jose and Joseph, 2003) However millions of individuals suffer from dental caries and periodontal disease resulting in unnecessary pain, difficulty in chewing, swallowing and speaking and increased medical costs (Das, Beena and Azher, 2009). Among oral diseases, dental caries is an important dental public problem in India and is predominantly a disease of childhood (Saravanan, Anuradha and Bhaskar, 2003). Dental caries remains a major public health problem in most industrialized countries especially for those countries where preventive programs have not been established (Luzzi *et al.*, 2011).

In the present study , the 6- 12 years age group was chosen as it is the global monitoring age for dental caries for international comparisons, and monitoring of disease trends. In this present study, it was observed that 59.1% of children in the 6-12 years age group were affected by dental caries indicating a relatively high prevalence of the disease in children. In a study done by Ratnakumari et al., (Retnakumari, 1999) reported dental caries at 6 years was

67.5% and at 12 years 67.2%. Similar studies had also reported increased caries prevalence with an increase in age (Rodrigues and Damle, 1998),(Kulkami and Deshpande, 2002).

Prevalence of gingivitis(6.8%) was relatively high among all age groups may be due to poor oral hygiene measures. This reflects improper brushing methods which could be due to inadequate brushing time, ineffective brushing technique, or both factors, or it may also be possible that some of the children would have not visited the dentist regularly. Although 12 years old exhibited lower prevalence of calculus as compared to other age groups this difference was not statistically significant. These results are in line with the study conducted by Rao et al., in his school children (Nagaraja Rao, 1985).

Malocclusion was found among 5.4% of children. However, this difference was not statistically significant which is consistent with the findings of Garber and Lucker (Graber and Lucker, 1980). Dental trauma was found among 45% of the study population, which is in accordance with the study done by Reddy et al (Reddy, 1981). Other oral diseases such as congenital missing (1.1%), filled (2.3%), irreversible pulpitis (6.4%) and Non-vital teeth with incomplete root formation (4.1%) and retained deciduous (10.2%) were recorded. It is important to reduce the caries prevalence among children by increasing awareness among parents.Parents should be encouraged to take their children to the dentist before the age of 1 year (32).Promoting community based oral health promotion, fluoride prevention programmes and preventive oriented public dental health care services should be made available and accessible to all children.(33,34).Our institution is passionate about high quality evidence based research and has excelled in various fields (Pc, Marimuthu and Devadoss, 2018; Ramesh *et al.*, 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai *et al.*, 2019; Sridharan *et al.*, 2019; Vijayashree Priyadharsini, 2019; M. G. Mathew *et al.*, 2020). We hope this study adds to this rich legacy.

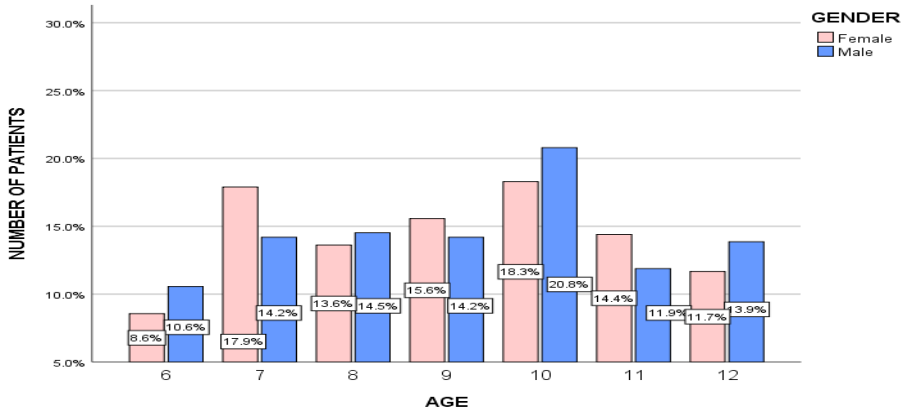

Figure 1: Bar chart showing association between Age and Gender of the patients with various Oral health diseases. X axis represents the distribution of patients according to Age. Y axis represents the number of patients with Oral Health diseases. Male patients (20.8%) had higher prevalence of Oral Health disease at age of 10 years compared to Female patients (18.3%). Chi square test was performed and association between Gender and Generalised Chronic periodontitis was found to be statistically not significant. Pearson Chi square Value = 0.081 (P>0.05), hence statistically not significant.

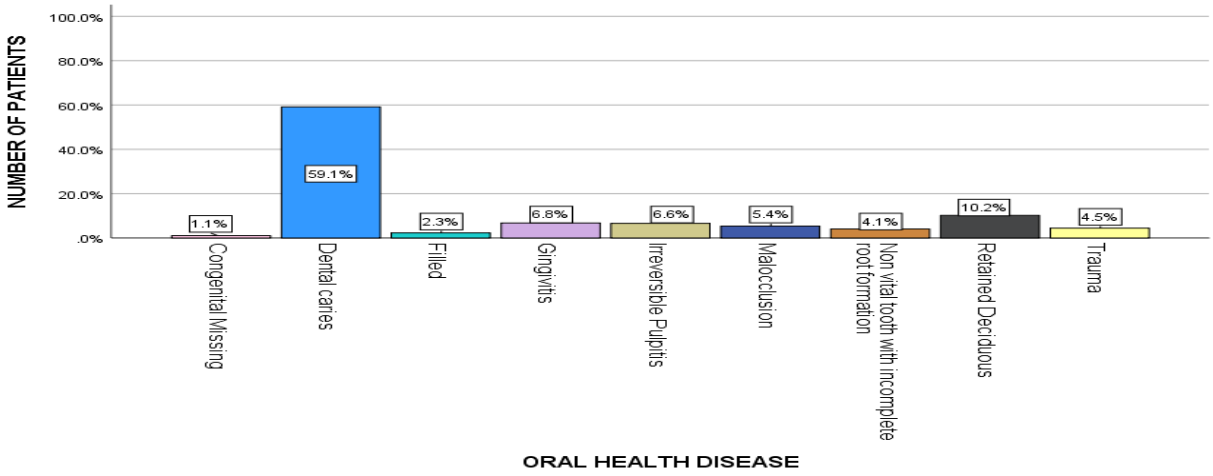

Figure 2: Bar graph shows the distribution of Oral health status of children belonging to 6 -12 years.. X axis denotes the Oral health status of children. Y axis denotes the percentage of children with oral diseases. More than half of the children had dental caries(59.1%).

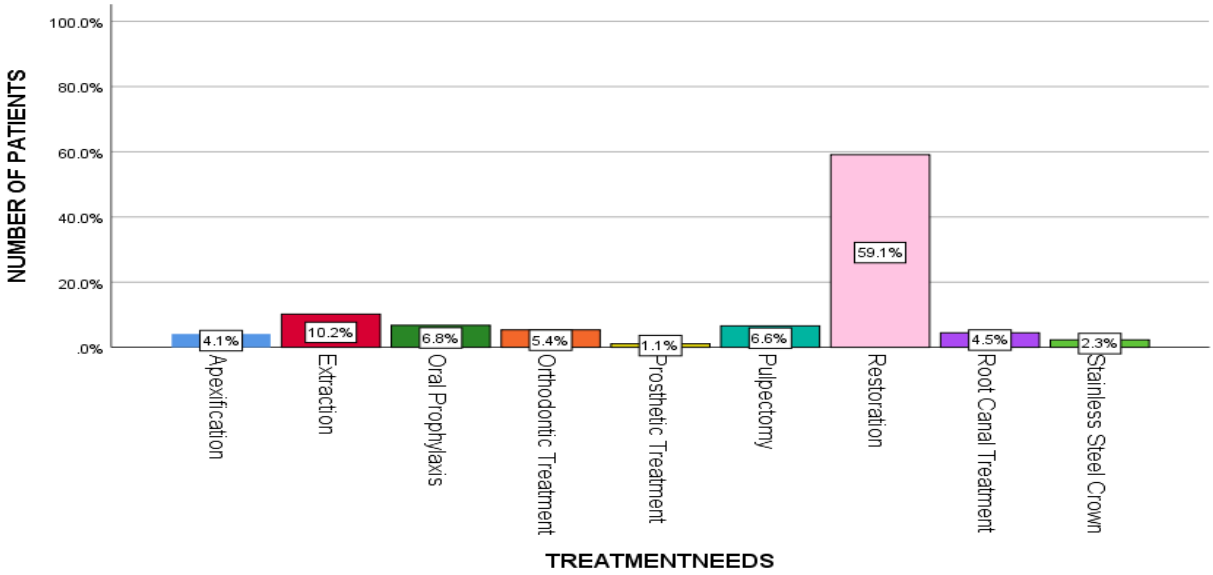

Figure 3. Bar graph depicts the distribution of Treatment needs of children belonging to 6-12 years. X axis denotes the various treatment Needs and Y axis denotes the number of patients. Tooth restoration due to caries was the most common treatment needed (59.1%), followed by extraction(10.2%) and pulpectomy(6.6%).

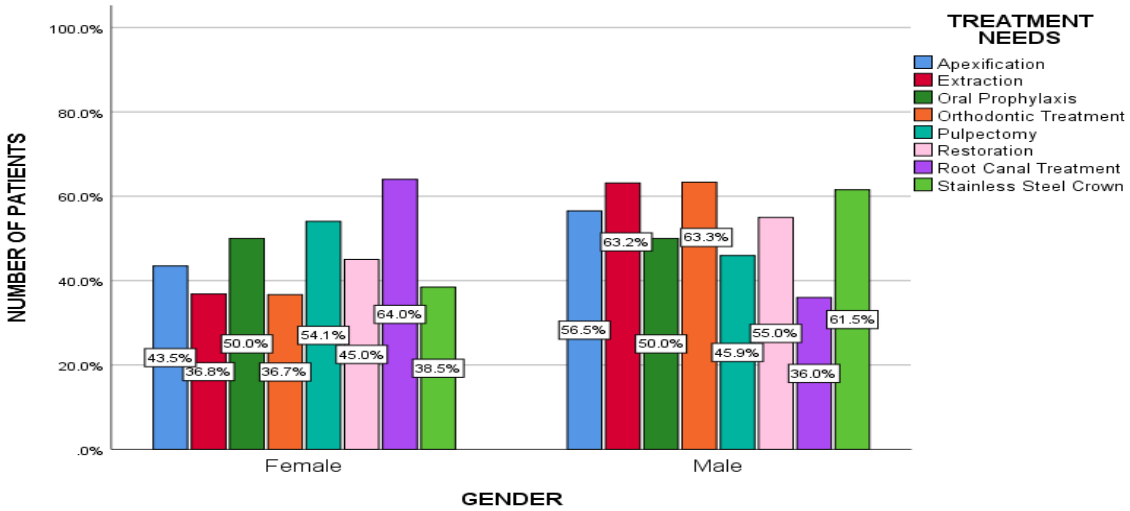

Figure 4: Bar chart explains the association between Gender and Treatment needs required for the patients with Oral Hygiene Status. X axis denotes the Gender of the patient. Y axis denotes the number of patients requires treatment. Root canal Treatment (64.0%) was the most common treatment required among the female patient and Orthodontic treatment (63.3%) was the most common treatment required among the male patient. Chi square test was performed and association between Gender and Treatment needs required for the patients with Oral Hygiene Status was found to be statistically not significant. Pearson Chi square Value = 0.164 (P>0.05), hence statistically not significant.

CONCLUSION:

In the present study, it has been concluded that, with increasing age, the dental problems are increasing. Dental health education and caries preventive programs are needed to minimize caries incidence in this area. The further studies are needed to identify high-risk individuals by screening and targeting them for the preventive measures.

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