International Journal of Dentistry and Oral Science (IJDOS)
ISSN: 2377-8075

Awareness On Early Childhood Caries

Research Article

Aarthi Kannan[1], Keerthi Sashanka[2*], Jothi Priya A[3]

[1] Saveetha Dental College And Hospitals, Saveetha Institute Of Medical and Technical Sciences, Saveetha University, Chennai, 600050, India.
[2] Assistant Professor, Department of Prosthodontics, Saveetha Dental College and Hospitals, Saveetha Institute Of Medical And Technical Sciences, Saveetha University, Chennai, India.
[3] Assistant Professor, Department of Physiology, Saveetha Dental College and Hospitals, Saveetha Institute of Medical and Technical Sciences (SIMATS), Saveetha University, Chennai -77, India.

Abstract

The aim of the cross-sectional survey is to create awareness about the Early Childhood Caries, and update the current knowledge about ECC and its etiology, prevalence, risk factors, management and preventive strategies. The ECC affects all parts of the tooth including the smooth surface. Upper anterior teeth and primary molars are usually affected. The lower anterior teeth are less likely affected. The risk factors for ECC are diet, bacteria, and host susceptibility. The additional factors, such as presence of enamel defect and the feeding practices also contribute to the initiation and progress of ECC. Dentists must focus on utilizing existing techniques to distinguish indications of right on time and propelled caries and give guidance on the best way to counteract and control caries in children. Approaches should be directed to preventive caries control strategies among children.Preventing and controlling the development of ECC among children is. Early childhood caries is a disease affecting significantly both well-developed and industrial nations. ECC significantly affects the child's quality of life, may lead to infection, swelling, pain and other symptoms. The ECC affects children after the eruption of primary teeth until the age of around 5 years. Approaches should be directed to preventive caries control strategies among children. Preventing the development of ECC among children is important to maintain effective eating, speech development and formation of a positive self-image.

Keywords: Dentists; Upper Anterior Teeth; Primary Molars; Strategies; Oral Hygiene.

Introduction

Early Childhood Caries (ECC) is a common childhood disease with highest prevalence found in poor, socially disadvantaged and minority groups [3]. The main risk factors for ECC are frequent sugar consumption, lack of tooth brushing and enamel hypoplasia [15]. ECC refers to caries found in primary teeth (milk teeth) of children younger than 6 years of age [10]. Despite significant advances in preventive dentistry, ECC continues to affect large numbers of children globally [20]. Early childhood caries is a disease affecting significantly both well-developed and industrial nations [9]. The ECC can significantly affect the child's quality of life, as it may lead to infection, swelling, pain and other symptoms [2]. ECC is a multifactorial chronic disease, which is influenced by biomedical factors such as diet, the oral microbiome, and by underlying social determinants of health [19].

There are various factors which lead to the lesions on the tooth. Diet plays a key role in the process of dental caries, the type of food consumed along with its frequency if consumption can determine the risk [23]. Recent research suggests that breastfeeding does not increase caries risk upto 12 months of age. Recent studies also suggest that the relationship between oral diseases and health related quality of life outcomes can be mediated by personal and environmental variables. ECC can affect childhood growth and development and the associated treatment costs, the prevalence and etiology of ECC must be examined more closely to undergo the appropriate treatments [17]. Evidence of the cost- effectiveness of fluoride varnish is the prevention of caries is not yet fully conclusive [25]. Background tooth decay experience among toddlers and preschoolers is of epidemic proportions worldwide and dental caries still remains an important childhood disease affecting a considerable part of this population [12]. Early childhood caries can be prevented by adhering to a healthy nutritional diet,

***Corresponding Author**:
Dr. Keerthi Shashanka,
Assistant Professor, Department of Prosthodontics, Saveetha Dental College and Hospitals, Saveetha Institute Of Medical And Technical Sciences, Saveetha University, Chennai, India.
Tel: 8374691106
E-mail: keerthis.sdc@saveetha.com

Received: July 24, 2020
Accepted: August 19, 2020
Published: August 29, 2020

Citation: Aarthi Kannan, Keerthi Sashanka, Jothi Priya A. Awareness On Early Childhood Caries. *Int J Dentistry Oral Sci.* 2020;S5:02:0021:118-123.
doi: http://dx.doi.org/10.19070/2377-8075-SI02-050021

optimal plaque removal and use of fluoridation on tooth surfaces once erupted, and frequent dental visits [11, 13, 15].

The initial visit is important as it allows dental professionals to flag unfavourablebehaviour or eating habits [11]. This will also allow dental clinician, working in a collaborative team, to perform diagnostic testing to determine the rate and progression of the disease [5]. Dental professionals now have a safe, inexpensive, and less invasive option to manage Early Childhood Caries. The Silver Diamine Fluoride (SDF) is a liquid containing silver and fluoride that can be brushed on teeth to stop decay, relieve sensitivity, and prevent cavities from getting worse [1]. Silver kills the bacteria that cause tooth decay and fluoride helps strengthen the tooth. Another approach of treating dental caries in young children is Atraumatic Restorative Treatment (ART). The ART is a procedure based on removing carious tooth tissues using hand instruments alone and restoring the cavity with an adhesive restorative material [1]. This is useful to prevent trauma and requires less chair time for the young patients.

Hence the aim of the study is to create awareness among the population about the various symptoms and treatment methods against Early Childhood caries.

Materials and Methods

A well-structured questionnaire comprising 15 questions covering the socio-demographic information, knowledge,attitude, perception was framed, administered and circulated to college students through google forms link. The sample size was 101 general population.

In this prospective study, the pros are economical, easy to create, gathers large data, wide reach, heterogeneous population and cons are response bias and survey fatigue [21]. This survey was approved by the Scientific Review Board Saveetha Dental College, Chennai. The sample size was 100 South Indian Population. Simple random sampling method was done to minimise response bias [3, 6, 16]. Measures taken for minimising the errors are internal and external validity. Demographic information: ECC, brushing, frequent oral check up. The descriptive statistics was done using SPSS software.

Result And Discussion

Survey on Awareness on Early Childhood Caries in which the study group included people belonging to the South Indian population, gave the result as 66.67% were female and 33.33% were male (Figure 1). 83.84% of the population responded that they were aware of early childhood caries (Figure 2). Hence, it shows that most people were aware about ECC. 82.83% of them thought that early childhood caries can cause severe complications (Figure 3). 81.82% of them responded that ECC can be treated (Figure 4). 56.57% of the population thought that ECC occurs in the age

Figure 1. Pie Chart showing the distribution of gender.(66.67% - female (Blue), 33.33%- male (red)).

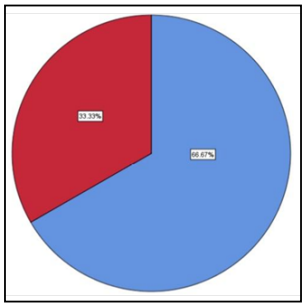


Figure 2. Pie Chart showing the percentage distribution of awareness of early childhood caries. [83.84%- yes(red) , 16.16%- No(blue)].

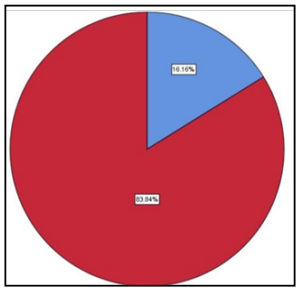
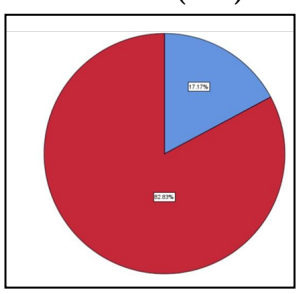


Figure 3. Graph showing the percentage distribution if Early childhood caries cause severe complications. 82.83%-Yes(red), 17.17%- No(blue).



group from birth-71 months, 30.30% of them felt that ECC occurs in the age group less than 6 years, and 13.13% of them felt that its common among the ahe group more than 6 years (Figure 5). 73.74% of the population thought that proper oral hygiene can reduce the risk of ECC (Figure 6). 74.75% of them thought that frequent oral check up is necessary for children (Figure 7). 67.68% of the population thought that dietary habits influence the occurrence of ECC in children (Figure 8). 15.15% of the population thought dietary habits cause ECC, 19.19% thought frequency of feeding influences ECC, 11.11% thought oral hygiene causes ECC and 54.55% of them thought all of the above causes ECC (Figure 9).

In previous articles, it was stated that integration of motivational interviewing improves the effectiveness of prevailing health education in preventing early childhood caries and improving children's oral health behaviours(14). Similarly in another study written by Priyadarshini, it was stated that the study findings illustrated a prominent protective role played by specific components as healthy dietary intake against dental caries in South Indian Children [18]. Children who received continuous dental care starting at the time of birth showed better and oral health with loss of deciduous teeth and lower need for orthodontic treatment at the age of 8 years [24]. In a study by Dumanc, it was stated that youtube videos can be used as a usefulsource for parental education [22]. As there is a need to improve the quality of education provided by public health and oral health professionals [8]. Studies showed that the atraumatic restorative treatment had a very good success rate in treating dental caries in young children [16]. Silver diamine fluoride is considered safe and effective in arresting dentine caries in the primary teeth [7].

Figure 4. Graph showing the percentage distribution if Early childhood caries can be treated. 81.82% -Yes (red), 18.18%- No(blue).

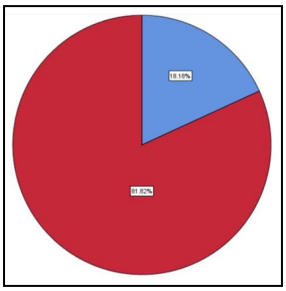


Figure 5. Graph showing the percentage distribution between the age groups. 56.57%- birth- 71 months(Green), 30.30%-less than 6(red), 13.13%- more than 6 years (blue).

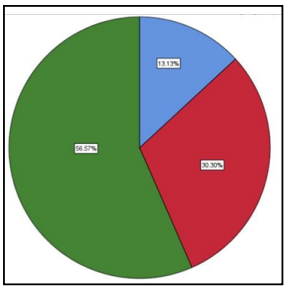


Figure 6. Graph showing the percentage distribution of oral hygiene reducing the risk of occurrence. 73.74%-yes (red), 26.26%- no(blue).

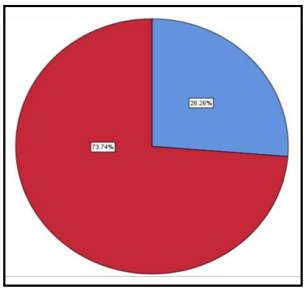


Figure 7. Graph showing the percentage distribution about the necessity of oral check up. 74.75%- Yes (red), 25.25%- No (blue).

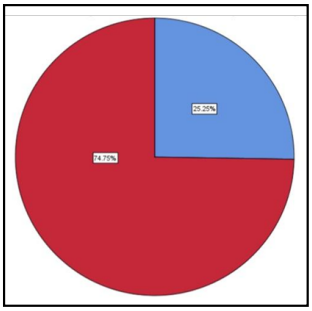


Figure 8. Graph showing the percentage distribution about the influence of dietary habits. 67.68%- Yes(red), 32.32%-No (blue).

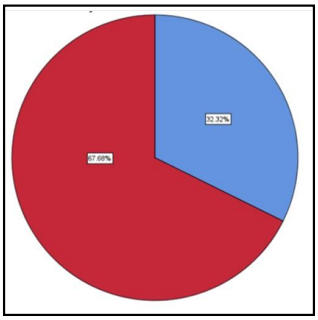


Figure 9. Graph showing the percentage distribution of causes of Early childhood caries. 54.55%-oral hygiene, dietary habits and frequency of feeding are the causes of ECC(orange), 19.19%- frequency of feeding(green), 15.15%- dietary habits(red), 11.11%-oral hygiene(blue).

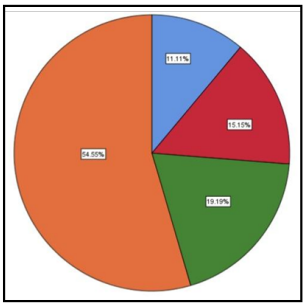


Figure 10. Bar graph showing Correlation between gender and awareness of early childhood caries. Out of 83% of the population who are aware, 58% constitutes males and 25% constitutes females. (*Chi square test was done and P value = 0.122, statistically not significant.*)

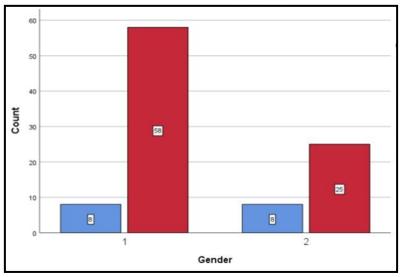


Figure 11. Bar graph showing the correlation between gender and complications due to early childhood caries(ECC). Out of 82% present of the population which knew about the complications due to ECC, 57% were female and 25% were male. (*Chi square test was analysed and p value =0.187, statistically not significant.*)

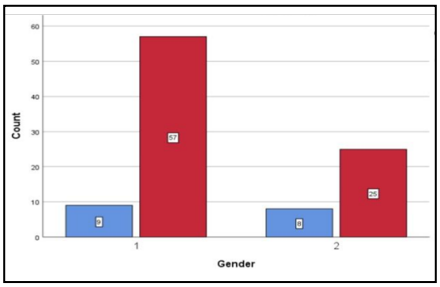


Figure 12. Bar graph showing the correlation between gender and treatment of Early childhood caries.Out of 81% of the population who felt that ECC can be treated, 55% were female and 26% were male. (*Chi square test was analysed and p value was 0.580, and it was found to be statistically insignificant.*)

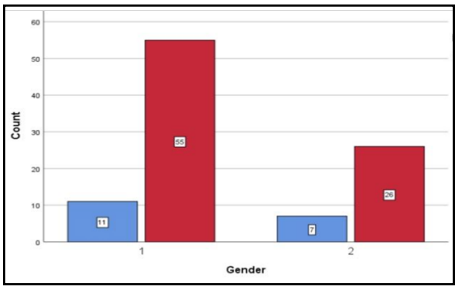


Figure 13. Bar graph showing the correlation between gender and ECC prevalence in age groups.Out of the total population, 36% females find that ECC prevalence is higher among birth- 71months age group, 20% females responded to age group less than 6, and 10%- felt that high prevalence is among the age group more than 6 years and among males 20% -responded birth to 71 months, 10%- less than 6 and 3%- responded more than 6. (*Chi square test was analysed and p value was 0.684 and it was found to be statistically insignificant.*)

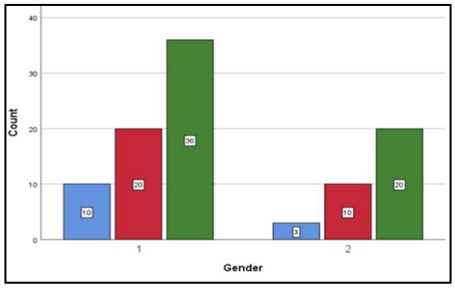


Figure 14. Bar graph showing the correlation between gender oral hygiene.Out of the 73% of the population who felt that maintenance of oral hygiene is important, 51% were female and 22% were male.(*Chi square test was analysed and p value was 0.258 and it was found to be statistically not significant.*)

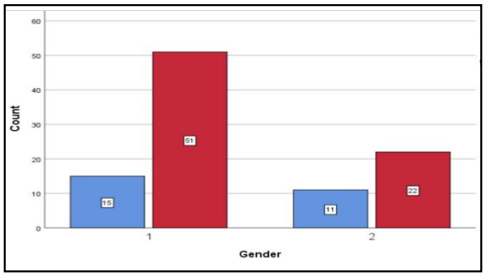


Figure 15. Bar graph showing the correlation between gender and oral check ups.Out of 74% of the population who felt that frequent oral check ups is necessary, 51% were female and 23% were male. (*Chi square test was analysed and p value = 0.413 and it was found to be statistically not significant.*)

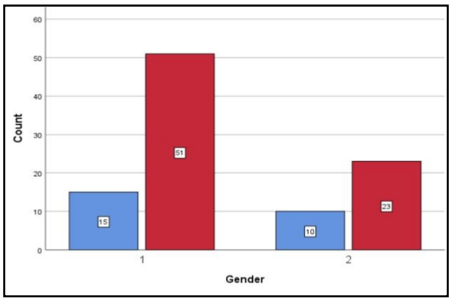
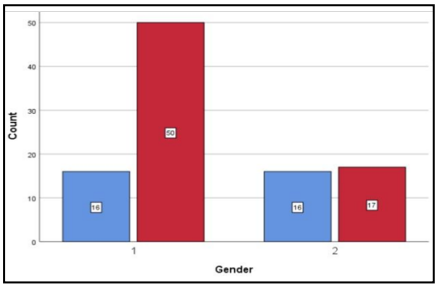


Figure 16. Bar graph showing the correlation between gender and dietary habits.Out of 67% of the population who felt that dietary habits influence the occurrence, 50% were female and 27%were male.Hence the knowledge regarding the correlation between dietary habits and ECC was higher among the females than males. (Chi square test was analysed and p value was 0.015 and it was found to be statistically significant.)



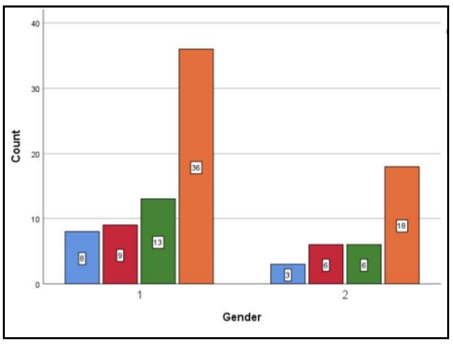
Limitations And Future Scope

Less number of articles is the limitation in this study. This survey will help in assessing the knowledge and creating awareness about the susceptible factors for ECC and acknowledge the people to visit the dentists frequently to prevent the occurrence of caries.

Conclusion

Despite the numerous risk factors reported for ECC, this condition can be prevented if appropriate measures are applied. There is a great need for preventive efforts by the child's healthcare providers to be well informed on the etiology and risk factors of ECC, and thus play a crucial role in guiding the children for their first dental visit within one year of age. This article provides an

Figure 17. Bar graph showing the correlation between gender and causes of early childhood caries.Out of the total population, 66% were females and 33% were males, who knew about the various causes of Early childhood caries(ECC). (*Chi square test was analysed and p value was 0.917 and it was found to be statistically insignificant.*)



overview of ECC based on current understanding of its causes, prevention and management. Within the limitations of this study following conclusion can be drawn, Participants are aware of the causative factors of ECC as eating a lot of sweets, an incorrect brushing method, and improper diet plan and emphasising oral health knowledge to parents and guardians, conducting proper brushing methods, avoiding an inappropriate habit of eating sweets are very important factors in the prevention of ECC.

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