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# Parental knowledge on early childhood caries and barrier to seek dental treatment in Parbhaniregion.

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## I. INTRODUCTION:

Dental caries is an infectious and multi-factorial disease. It remains the single most common disease of childhood. More than 80% of the pediatric population is affected with dental caries by the age of 17 years [1]. Childhood caries is an acute, rapidly developing dental disease. Early onset and rampant clinical progression makes childhood caries a serious public health problem [2]. In a developing nation like India, dental caries have shown an increasing trend over a relative period of time. Earlier studies revealed the prevalence as 55.5%in 1940 which rose to 68%in 1960 [3]. The epidemiological studies now conducted are more detailed and scientifically sound. These studies have shown a variation of 19.2 – 77% in different parts of India [4]. This is largely attributed to increased frequency of sugar consumption, poor oral hygiene and dietary habits, lack of knowledge, attitude, inadequate exposure to fluoride and sociodemographic factors.

Based on DMFT index, the World Health Organization (WHO) has announced the globaloral health goal of DMFT < 3 in 12 year old by the year 2015 [5]. Although the etiological mechanisms of dental caries are well known, the early life events which may contribute to dental caries continue to be poorly understood [6].

Despite a general decline in caries prevalence, ECC remains a major health problem in infants and toddlers.(Retnakumari and Cyriac 2012[7]; Javed et al. 2017[8]). ECC has acomplex and multifactorial etiology. It results from a complex interaction between the use of sweetened pacifiers, nursing on demand, neglected oral hygiene, increased streptococcus Mutans count, dental knowledge, family structure as well as socio- economic status (Congiu et al. 2014[9]).

Infants and preschool children are particularly vulnerable to dental caries. Parents play an important role in the well-being of young children as they are the primary decision makers in terms of their children's health-related behaviors and health care. Therefore, exploring their knowledge, attitude, beliefs and barriers facing them in seeking oral health care for their children are important considerations in an attempt to make improvements in children`s well-being (Shivaprakash et al. 2009[10]; Chhabra and Chhabra 2012[11]). Kay and Locker suggested that an understanding of mother's knowledge of their children oral health issues is crucial to modify their behaviour and encourage good health promotion (Kay and Locker 1996[12]).

Mothers' dental awareness and barriers to accessing oral healthcare are important contributing factors to ECC but is not adequately addressed in literature reviews. Shivaprakash et al. (2009)[10] investigated mother`s knowledge and awareness of their infants` oral healthcare in two socio-economic classes; rural and urban areas in India. They found maternal knowledge was inadequate irrespective of the locality. Their finding is in agreement with Chhabra and Chhabra (2012)[11] who believed that maternal knowledge and attitudes regarding the importance of their children dental health needed to be improved. In Jordan, there is lack of information about mothers` knowledge, attitude and believes regarding their children's oral health. Rajab et al. (2002)[13] found a discrepancy between maternal dental knowledge and oral health care practices in Jordan. The results indicated that children and mothers` attitudes toward dental care needed to be improved.

Reviewing the literature related to research on risk factors for dental caries revealed thatmother-related variables have been receiving a biased attention, compared with father- related variables. Salwa and Sadhan [14] also found a significant association between maternal education and dental caries. However, a study conducted in Brazil studied the relationship between early childhood dental caries and behavior, attitude and socioeconomic background of parents. They reported that prevalence of early childhood caries was 28.2%; with a significant association between paternal educational level and severe early childhood dental caries. They concluded that fathers should be viewed not merely as providers but have an important influence on the child's development as a whole.

In addition, ECC remains untreated in some children partially due to inadequate access and utilisation of health care services. Studies from different countries indicated that barriers to accessing oral healthcare were many, interactive and vary in different communities (Rajab et al. 2002[13]; Al-Omiri et al. 2006[15]). Barriers

included perceptions of need, financial cost, occupational stress and lack of access. Al-Omiri et al.(2006) reported that the main barriers for regular dental attendance in Jordan were "treatment not needed" as well as "cost". Other barriers were: fear from dental treatment and lack of parental encouragement to visit the dentist regularly. Rajab et al. (2002) [13] considered the shortage in the number of paediatric dentists to be the most important barrier in seeking dental care among children and their families.

This study investigated Parents attitudes, knowledge and beliefs of ECC risk factors andtheir utilization of dental health services available in Parbhani region. It highlighted the role of Parents perception of their children in developing ECC and attempted to determine barriers against utilizing oral health services among children with ECC.

**Aim:**

To Assess Parental Knowledge, Attitudes And Beliefs Of Early Childhood Caries
,Risk Factors And To Determine Barriers In Seeking Dental Treatment Among Children With Ecc In Parbhani Region.

## II. MATERIALS AND METHODS:

In total, 230 parents of medically healthy children diagnosed with ECC attending Saraswati Dhanwantari Dental College, Parbhani for regular check-up and children livesin urban and rural areas of Parbhani region were participate in the study.

Participants were included in the study if they met the following criteria: child with no significant health problem (ASA Physical Status 1 and 2) and had ECC on dental examination at the time of the study; parents able to give consent .

- Inclusion Criteria: Patient with ECC,Co-operative behaviour,No history of systemic diseases
- Exclusion Criteria: Uncooperative children,Special healthcare needs

Diagnostic Criteria of ECC and clinical examination

ECC was diagnosed clinically based on the diagnostic criteria suggested by the American Academy of Pediatric Dentistry (AAPD) (2008). Children were considered to have ECC if they had one or more decayed (non-cavitated or cavitated lesion), missing (due to caries) or filled tooth surfaces in any primary tooth in a child 71 months of age or younger.

Dental caries examination was conducted in a systematic manner using individually wrapped, sterilised dental mirrors by a well-trained and calibrated single examiner (AB). The information was recorded on a prepared examination section in each questionnaire by a research assistant.

The Questionnaire

Data on Parents's knowledge, attitudes and beliefs as well as barriers against seeking dental treatment were collected by the use of a structured questionnaire. The questionnaire was piloted among a non-target sample of 20 parents of children with ECC,none of the questions had to be modified. The participants completed the questionnaire through face-to-face interview.

The questionnaire comprised of 3 sections with total of 26 closed questions. It aimed to assess the following: (i) demographic details of the child and his parents (9 questions) including child gender, residence, parent's age, parent's education level (uneducated, high school degree and bachelor degree), parent`s field of work (professional when attended university or college, housewife when main occupation is caring for the family), monthly income of the family and type of house the family lives in, (ii) parent`s attitudes and knowledge regarding oral health education and dietary habits (11 questions), and (iii) the availability and accessibility of health services and insurance and knowledge regarding pediatric dentist (6 questions).

In the present study, parent`s knowledge regarding oral health education and dietary habits was assessed in Sect.(ii) of the questionnaire and comprised of 11 questions. Theywere classified as 'Good knowledge', 'Poor knowledge' and 'No knowledge' according to the number of correct answers provided. 'Good knowledge' score was given if parentshad 9 or more questions correct, 4–8 correct questions were given a 'Poor knowledge' score and those who answered less than 4 questions correctly were given the 'No' knowledge score.
In addition, delay in seeking dental treatment in the present study was predetermined as those children with ECC who had not visited the dentist in the past 6 months. The parental knowledge regarding Pediatric dentist was also assessed.

**Statistical analysis**

Data were entered into SPSS (Statistical Package for the Social Sciences) version 22. Data were analysed using descriptive statistics, comparisons of means and test of association. Statistical analyses of association of parent`s perception with various categorical variables were performed using Chi-square. Probability values $\leq 0.05$ were considered statistically

significant.

## III. RESULTS:

**Table no. 1:- Demographic characteristics of the study participants**

| **Gender** | Frequency (n) | Percent (%) | P value |
|---|---|---|---|
| Male | 114 | 49.6 | .895 |
| Female | 116 | 50.4 | |
| Total | 230 | 100.0 | |
| **Type of residence** | | | |
| Urban | 138 | 60.0 | .002 |
| Rural | 92 | 40.0 | |
| Total | 230 | 100.0 | |
| **Parental age** | | | |
| < 25 years | 60 | 26.1 | .000 |
| 25-30 years | 80 | 34.8 | |
| 30-35 years | 45 | 19.6 | |
| 35-40 years | 25 | 10.9 | |
| >40 years | 20 | 8.7 | |
| Total | 230 | 100.0 | |

In the Socio-demographic characteristics of the study population almost equal male female ratio has been seen, most of the population lived in Urban areas(60%) as compared to rural areas(40%), parental age found in between 25-30 years old is highest i.e. 34.8%

**Table no. 2: Educational and socio-economic characteristics of thestudy population**

| Father's/mother's education level | | | p | P value |
|---|---|---|---|---|
| Uneducated | 65 | 28.3 | .000 | |
| High school degree | 115 | 50.0 | | |
| Bachelor degree | 50 | 21.7 | | |
| Total | 230 | 100.0 | | |

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| | | | |
|---|---|---|---|
| Father's/mother's occupation | | | |
| Professional | 50 | 21.7 | .000 |
| Housewife | 180 | 78.3 | |
| Total | 230 | 100.0 | |
| Family income | | | |
| Save monthly | 52 | 22.6 | .000 |
| Income = monthly expenses | 138 | 60.0 | |
| In debt | 40 | 17.4 | |
| Total | 230 | 100.0 | |
| House type | | | |
| Owned | 138 | 60.0 | .002 |
| Rented | 92 | 40.0 | |
| Total | 230 | 100.0 | |

In the present educational and socio-economic characteristics of the study population, Among parents ( 50%) had high school degree and majority were housewives (78.3%) and only (21.7%) having professional job. In addition, majority of the families had onlyenough income to cover their monthly expenses (60%), (17.4%) were in debt, and a minority (22.6%) stated that they saved money from their monthly income.

**Table No. 3: Description of the parents' attitudes, beliefs andknowledge of ECC risk factors**

| Statement | Options N (%) | | | P value |
|---|---|---|---|---|
| | True | False | I don't know | |
| Should avoid sharingfood | 90(39.1) | 135(58.7) | 5(2.2) | .000 |
| Baby teeth are important as the adultteeth | 194(84.3) | 30 (13) | 6 (2.6) | .000 |

| | | | | |
|---|---|---|---|---|
| Sweets can cause decay | 211 (91.7) | 15 (6.5) | 4 (1.7) | .000 |
| Soft drinks can causedecay | 162 (70.4) | 40 (17.4) | 28 (12.2) | .000 |
| | | | | |
| Breast feeding cancause decay | 42 (18.3) | 175 (76.1) | 13 (5.7) | .000 |
| Should avoid sweetsnacks | 198 (86.1) | 19 (8.3) | 13 (5.7) | .000 |
| Fluoride prevents decay | 45 (19.6) | 20 (8.7) | 165 (71.7) | .000 |
| Excess fluoride causesfluorosis | 20 (8.7) | 45 (19.6) | 165 (71.7) | .000 |
| Best time for weaning is One year old | 42 (18.3) | 170 (73.9) | 18 (7.8) | .000 |
| Teeth cleaning shouldstart after Eruption offirst baby tooth | 92 (40) | 130 (56.5) | 8 (3.5) | .000 |
| Should start visiting the dentist during 6 months of primary tooth eruption | 80 (34.8) | 110 (47.8) | 40 (17.4) | .000 |

Maternal knowledge, attitudes and beliefs regarding ECC risk factors are summarizedin Table No. 3

The correlation between the participants' demographic and educational characteristics with their knowledge, attitudes and beliefs was assessed in the current study. Only parents' level of education and profession had a statistic significant effect on the level of their oral health knowledge, attitudes and beliefs ($p < 0.05$). Parents with bachelor degrees as well as professional parents demonstrated 'good knowledge'; whereas 'no knowledge' was more often seen among uneducated parents and housewives.

Table no. 4:- Availability and accessibility of utilizing dental health services amongParents of children with ECC

| Knowledge of dental health centre nearby? | Frequency (n) | Percent (%) | P value |
|---|---|---|---|
| Yes | 210 | 91.3 | .000 |
| False | 20 | 8.7 | |
| Total | 230 | 100.0 | |
| Time required reaching the destination? | | | |
| < 1 hour | 219 | 95.2 | .000 |

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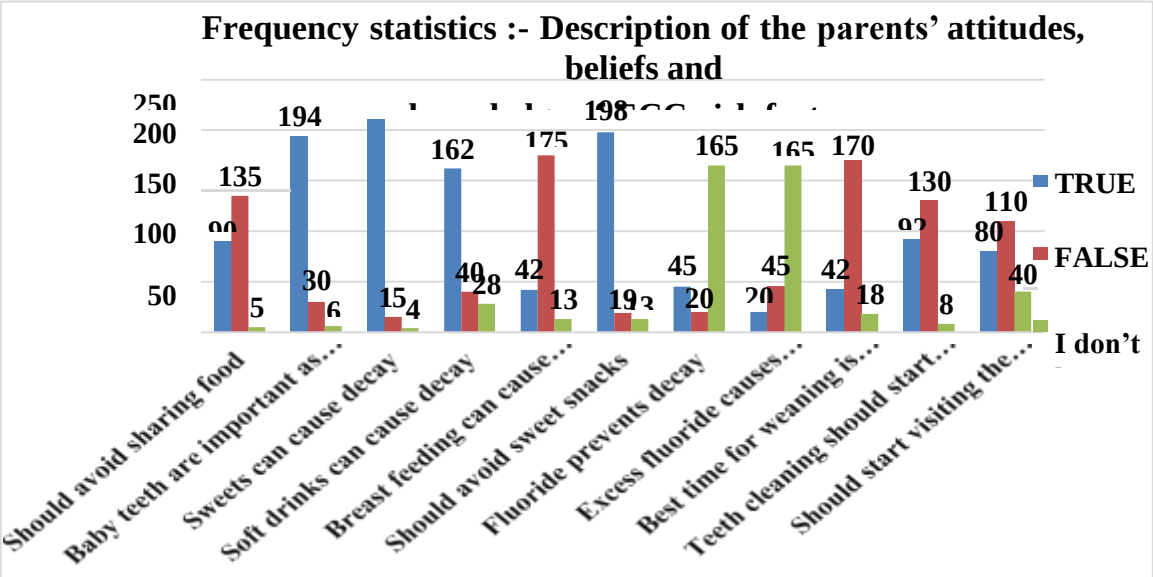
| | | | |
|---|---|---|---|
| > 1 hour | 11 | 4.8 | |
| Total | 230 | 100.0 | |
| Health insurance including dental? | | | |
| Yes | 5 | 2.2 | .000 |
| No | 225 | 97.8 | |
| Total | 230 | 100.0 | |
| Did your child ever visit a dentist? | | | |
| Yes | 135 | 58.7 | .008 |
| No | 95 | 41.3 | |
| Total | 230 | 100.0 | |
| Do you have any idea regarding paediatric Dentist? | | | |
| Yes | 69 | 30.0 | .000 |
| No | 161 | 70.0 | |
| Total | 230 | 100.0 | |

Table no 4 shows Availability and accessibility of utilizing dental health services among Parents of children with ECC. Among 230 parents 91.3% parents had knowledge of nearby dental health centre while 8.7% has no idea regarding it. Time taking for reaching the nearby centre in <1hr is 95.2% and more than >1hr is 4.8%. 97.8% parents had no idea about health insurance covering dental treatment. 58.7% children has visited a dentist recently while 41.3% never visited a dentist. 70% of participants had no idea about paediatric dentist while 30 % know about paediatric dentist.

Parents profession, family income and time needed to reach a nearby health center were found to affect the delay in seeking dental treatment significantly. Families who had financial problems (income = outcome or in debt) exhibited more delay in seeking dental treatment as opposed to of those with extra income. Interestingly, the shorter the time needed to reach a nearby Health Centre, one hour or less, the more the delay in seeking treatment




Graph 1: Description of the parents' attitudes, beliefs and knowledge of ECC riskfactors

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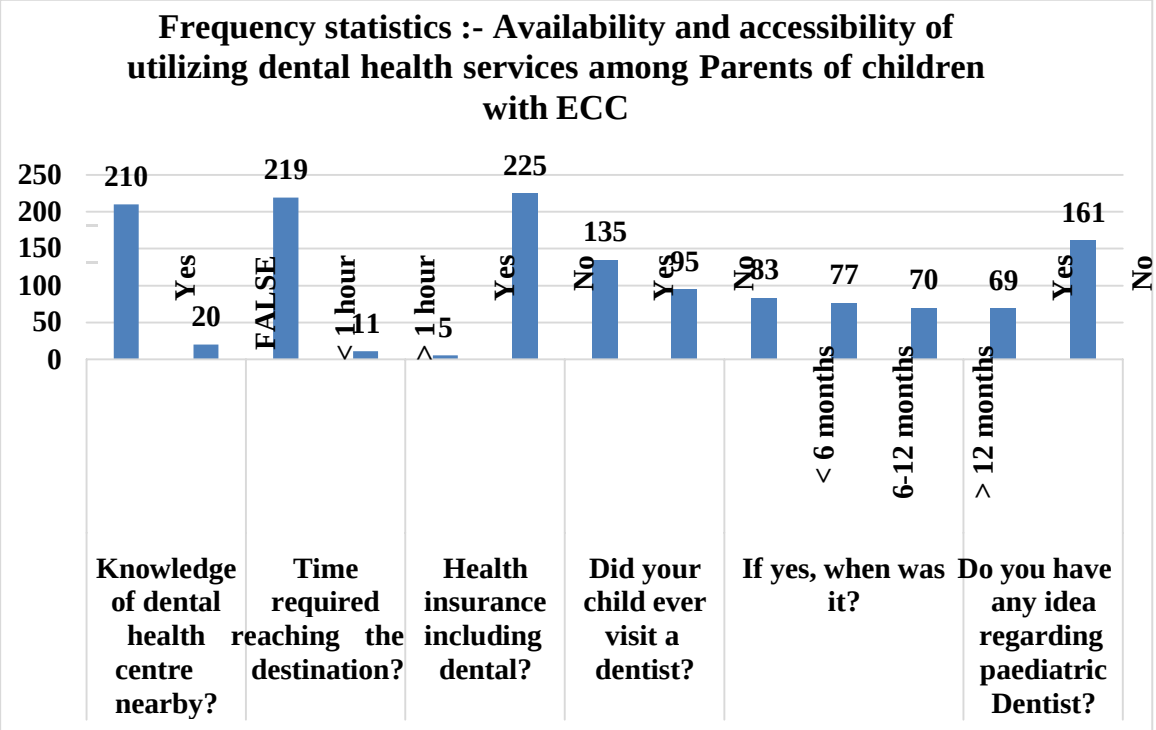


Graph 2: Availability and accessibility of utilizing dental health services among Parents ofchildren with ECC

## IV. DISCUSSION

Parental knowledge, attitudes and believes of ECC risk factors as well as barriers to accessing oral healthcare are important contributing factors to ECC but less addressed in the literature. Parents' perception has an important impact on children's oral health and oral health-related behaviors. The present study aimed toexplore parents` knowledge, attitudes and believes of ECC risk factors as well as to determine the factors affecting their utilization of oral health services in Parbhani.

Although most of the parents in Parbhani (84.3%) believed that primary teeth were as important as permanent teeth, the majority (82%) were found to have 'poor knowledge' of oral health issues concerning the aetiology and prevention of ECC and only 6% of the parents demonstrated 'good knowledge'. Over 39% of parents in the current study believed that sharing food with their children was acceptable. This finding was consistent with previous studies where nearly half of the mothers had sometimes shared food with their children (Shivaprakash et al. 2009[10]). As for weaning, only 18.3% of parents agreed with the idea that the best time for weaning was at one year of age with the majority (73.9%) reporting that breast feeding had no effect on the development of ECC. A higher proportion was reported in a previous study carried out in India (Shivaprakash et al. 2009[10]).

Fluoride is one of the most effective protective measures in preventing dental caries. A consistently weak knowledge regarding fluoride's role in caries prevention was observed among the participants in the present study as less than half of parents (19.6%) believed that fluoride can prevent tooth decay, while almost more than half of the parents did not know anything about fluoride's role incaries prevention (71.7%).

These finding reflect the fact that comprehensive preventive programmes and education regarding fluoride`s role in caries prevention among the population are still lacking in Parbhani ; hence, more dental health education regarding fluoride isneeded.

An oral health consultation visit within 6 months from eruption of the first toothand no later than 12 months of age is recommended by AAPD to educate carers and provide anticipating guidance for prevention of dental disease

(AAPD 2008[16]). Only one third (40.3%) of the parents in the present study were aware of this recommendation, and a high proportion of them did not clean their child's mouth after the eruption of the first primary tooth (56.5%). A similar finding had been reported previously by Shivaprakash et al. (2009). However, the findings of Gussy et al. (2008)[17] have disagreed with the present study findings,and indicated a higher dental awareness of mothers living in Australia.

Participants who had financial problems (income = outcome or in debt) exhibited delay in seeking dental treatment compared with those of a better financial condition. The fact that financial status of the family was a barrier to dental care had been reported previously in the literature (Agili et al. 2005[18]; McBroome etal. 2005[19])

People with low socio-economic status face barriers to dental care, most importantly are: high cost of dental treatment, lack of demand to dental care, poor knowledge and distribution of paediatric dentists, lower rate of insurance coverage, difficulty in transportation, and less availability of dental educational programmes (Rajab et al. 2002[13]). Position and location of dental health services play an important role in dental health services utilization. Surprisingly inthe current study, families who live closer to a dental health center exhibited moredelay in seeking dental treatment compared to those who lived further away and required more than one hour to get there. This was in contrast with Kikwilu et al. (2008)[20] who reported that distance was a barrier and caused delay in obtaining treatment. Jacob and Plamping (1989)[21] also believed that patients usually use health services which are within a 6 miles (10 kms) radius of their homes, work orschools and people in rural areas find arranging for transportation a barrier for seeking oral health care.

## V. CONCLUSION:

The majority of the parents of children diagnosed with ECC in Parbhani region had poor knowledge regarding their children's oral health status. Although most parents believed that primary teeth were as important as permanent teeth, most had poor knowledge of the aetiology and prevention of dental caries. In addition, seeking dental treatment was delayed in the majority of parents of children with ECC in Parbhani region; skilled parents, families with financial problems, and decreased distance from a dental center were barriers facing dental treatment seeking among mothers in Parbhani region.

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