ORIGINAL ARTICLE

Frequency of Early Child Hood Caries and Associated Risk Factors in patients attending a private hospital in Southern Punjab

RABIA ZAFAR[1], MUSTAFA SAJID[2], ASAD MAHMOOD[3], SAADULLAH[4], MUHAMMAD WAHEED TAHIR[5], SALMAN AZIZ[6]
[1]*Assistant Professor Multan Medical and Dental College Multan*
[2]*Associate Professor Multan Medical -and Dental College Multan*
[3]*Associate Professor Lahore Medical and Dental College Lahore*
[4]*Assistant Professor CMH Lahore*
[5]*Assistant Professor Services institute of medical sciences Lahore, FCPS*
[6]*Associate Professor CMH Lahore,*
Correspondence to Dr Asad Mahmood, Email: asad661@hotmail.com, Cell: 0321-4437371

ABSTRACT

Background: Early Child hood Caries (ECC) is a common oral health problem in pre-school children, found in both developed and under developed countries.
Aim: To determine the frequency of ECC and associated risk factors in children age 6-60 months .
Methodology: This cross-sectional survey was carried out over 6 months from September 2020 to February 2021, in the Pediatric Department of Multan Medical and Dental College. 500 children of age 6-60 months were included in the study. By using a questionnaire, guardians were asked about child age, gender, feeding pattern, nocturnal feeding, maternal literacy level, parental residence. Oral hygiene of the child was examined by 2 dental surgeons. Chi square test for used for categorical data and data was entered on SPSS version 21.
Results: Frequency of ECC was 22% in our study. Child feeding pattern, nocturnal feeding, and mother's literacy level had significant association with ECC.
Conclusion: Frequency of ECC in patients presenting to the pediatric department of MMDC was found to be 22%. Emphasis should be given to the early child visit at dental department as the first tooth erupts in the oral cavity for prevention and early detection of early child hood caries.
Keywords: Early childhood carries, risk factors

INTRODUCTION

Early childhood caries (ECC) is an aggressive form of dental caries that is defined as 'presence of carious lesion in any of the primary tooth of a pre-school child ages 0–71 months[1]. These lesions involve tooth sites that are less prone to the development of dental caries. Other suggested names for ECC are nursing bottle caries, milk bottle syndrome and prolonged nursing habit caries[2]. Clinically, there is rapid development and progression of dental caries which involves a number of teeth soon after they appear in oral cavity. Early child hood caries may lead to local pain, infection, abscess, chewing difficulties, hypoplasia of developing teeth. Early loss of deciduous teeth due to early child hood caries may lead to loss of space for permanent successors or ectopic eruption of permanent teeth. As a result, these children may suffer from bad esthetics, poor speech skills, low self esteem and less social interaction.

Early child hood caries is an infectious disease that affects 1–17% children in developed and 70% children in under developed countries[4]. Highest prevalence is reported from Africa and South East Asia[5]. In Pakistan, different studies stated the prevalence of Early Child hood caries from 27.9% to 51%[6,1]. Various risk factors of ECC include feeding practices, snacking habits, oral hygiene, socio-economic status and mother's education level[7].

The purpose of this study was to know the frequency of Early child hood caries in pre-school children attending dental hospital in Southern Punjab so that various preventive health program (including diet diary, maternal education regarding oral health care, significance of regular follow up, fluoride application in high caries risk patients etc. may be implemented regarding Early child hood caries.

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METHODOLOGY

This cross sectional study was carried out over 6 months from September 2020 to January 2021, in the department of Pediatric dentistry of Multan Medical and Dental College. Five hundred children of age 6 – 60 months were included in the study. Children less than 6 years were included in the study while children with any syndrome or handicapped children were excluded from the study. By using a questionnaire, guardians were asked about child age and gender, residence, maternal literacy level, child s feeding method, sugar consumption in bottle and nocturnal feeding. Verbal consent was taken prior to including the children in the study. After this, oral cavity of the children was examined using good light and dental mirror. Data collection was completed. Chi square test was used to know significance and value of <0.05 was taken significant. SPSS version 21.0 was used for statistical analysis on.

RESULTS

The prevalence of early child hood caries in my study was 22% in all children of age 6–60 months. Frequency was highest in children age 24-36 months (38.59%) and ECC was more prevalent in males (76%). A higher percentage was seen in children who were bottle fed (85.6%) and in children with nocturnal feeding (79.8%) and with added sugar in bottle (86%) Mother's literacy level had significant association with ECC (62.2%) while there was no

significant difference in caries frequency with respect to the residence area.

dmft of child	Frequency	Percent
0	390	78 %
1	8	1.6 %
2	12	2.4 %
3	66	13.2%
4	19	3.8 %
5	5	1 %
Total	500	100

Caries distribution with respect to age;

Child age in months	n	Present	Absent
6 – 12	34	9(26.4%)	25(73.5%)
12 – 24	69	11(15.94%)	58(84.05%)
24-36	171	66(38.59%)	105(61.40%)
36-48	150	21(14%)	129(86%)
48-60	76	3(3.94%)	73(96.05%)
TOTAL	500	110(22 %)	390 (78%)

Gender distribution (ECC) (n=500)

Gender	n	%age
Males	380	76 %
Females	120	24 %
Total	500	100

Child s feeding pattern;

Feeding pattern	n	%age
Mother s milk	72	14.4%
Bottle feeding	428	85.6 %
Total	500	100

Patients with mixed feeding pattern were excluded from the study

Nocturnal feeding;

Yes	399	79.8 %
No	101	20.2 %
Total	500	100

Sugar in baby bottle;

YES	430	86 %
NO	70	14 %
Total	500	100

Mother s literacy level;

Illiterate	311	62.2 %
Literate	189	37.8 %
Total	500	100

Caries distribution with respect to residence area

Age(in months)	Urban	Rural
6 – 12	10(4%)	24(9.6%)
12 – 24	15(6%)	54(21.6%)
24 – 36	90(36%)	81(32.4%)
36 – 48	80(32%)	70(28%)
48 – 60	55(22%)	21(8.4%)
Total (500)	250	250

DISCUSSION

Early child hood caries is one of the major oral health problems that affects children all over the world with varying prevalence among different populations .The prevalence of ECC in our study was 22% in all children of age 6 – 60 months .This matches with a study conducted in Saudi Arabia where the prevalence was 26%[8]. Also in a study conducted in Sheikh Zayed hospital, the prevalence was 26.5%[1]. While the prevalence of Early child hood caries was high in a study conducted in India (44%)[9] and in Korea (56.5%)[10]. In a recent study conducted in Shandong Province, Prevalence was 64.6%.The higher prevalence was due to larger sample size (1330 children) used in this study[16]. Similarly in a study conducted in Uganda, the prevalence of early child hood caries was 48.6%, higher prevalence might be due to the reason of study conducted in rural area[17].

It was evident from our study that caries was more prevalent in age groups 24 – 36 months .This is in contrary to a study conducted in Karachi where age had no significant impact on ECC[11]. However, studies conducted in Peshawar[6] and Sri Lanka[12], showed high frequency of caries with age.

Caries was more prevalent in males in the present study. This is in contrast to the study conducted in Sheikh Zayed hospital, where the gender had no role in the development of ECC[1].

A high percentage of early child hood caries was seen in children who were bottle fed and in children with nocturnal feeding. This matches with a study conducted in Nigeria population[13]. In a recent study in India, history of bottle feeding was related to the higher caries experience directly[18].

Mother's education level had significant effect on the frequency of ECC. This is supported by the analysis of another study in India, where children of illiterate mothers had more dental caries[14,7].

Residence had no effect on the frequency of dental caries. This is in contrast with a study conducted in Lahore where caries was more common in people residing in urban areas[15].

Recommended treatment protocol depends upon the extent of carious lesion, child cooperation level, socio economic status, availability of facilities and operator skills as well. For incipient carious lesion, professionally applied fluoride, silver diamine fluoride as well as parental counselling is required. If restorations are indicated, materials recommended are glass ionomer cement, composite resin, amalgam, stain less steel crowns. Atraumatic restorative technique (ART) indicated in certain cases. For teeth with pulpal involvement, extraction is advised depending upon child cooperation and other clinical indications[19,20].

CONCLUSION

Frequency of Early Child hood caries in patients presenting to pediatric department of Multan Medical and Dental College was 22% Feeding habits, nocturnal feeding and mother' s education level had strong association with the frequency of dental caries. Emphasis should be given to child dental visit as the first tooth erupts in the oral cavity.

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