

Knowledge, Attitude and Practice among Pre-school Teachers and Anganwadi Workers on Early Childhood Caries

Basil. M. Mathew^{1*} Annie Edwin² Jasvir Kaur³

¹Senior Lecturer, Department of Pedodontics, B.J.S. Dental College Ludhiana, Punjab, India.

²Assistant Professor, Department of Pedodontics, Sree Mookambika Dental College, Kulasekaram, Tamilnadu, India.

³Reader, Department of Pedodontics, BJS Dental College, Ludhiana, Punjab, India.

ABSTRACT

Aim: To gather baseline information on knowledge, attitude and practice regarding Early Childhood Caries among Pre-school teachers and Anganwadi workers. To plan and execute a school-based preventive programme.

Materials and Methods: A descriptive cross-sectional study was designed using a 27 item questionnaire regarding the etiologic and preventive factors of ECC. The study involved 350 Pre-school teachers and Anganwadi workers. Data were subjected to descriptive analysis and frequency distributions were generated. One way analysis of variance and t-test were applied to examine relationships between dependent and independent socio-demographic variables.

Results: Despite the majority of teachers being parents (72%) themselves, the study revealed a severe lack of knowledge and inappropriate practices concerning the prevention of Early Childhood Caries.

Conclusions: Study indicated an urgent need for an organized awareness programme regarding preventive practices regarding ECC.

Keywords: Knowledge; awareness; practice; early childhood caries; pre-school teachers.

INTRODUCTION

Early childhood caries is multifactorial, as the exact cause of ECC is unknown.¹ However, contributing factors are the transfer of infectious organisms from a caregiver,² older siblings,³ feeding practices in which children are put to bed with sweetened pacifiers, a bottle containing infant formula, milk, sweetened drinks, prolonged or on-demand breastfeeding.⁴ School-based Oral Health Care programs have shown promising results in various countries.⁵ However, systematic information on the level of dental knowledge and attitudes possessed by schoolteachers is still deficient.⁶ Therefore, the challenge to dental professionals in school oral health programs is to accurately inform teachers and to assist them in teaching students about current preventive methods.

The objective of this study was to assess the knowledge, attitude and practice regarding Early Childhood Caries among pre-school teachers and Anganwadi Workers. The secondary objective was to ascertain whether these factors are dependent on any socio-demographic variants.

MATERIALS AND METHODS

A descriptive cross-sectional study was designed. Data was compiled during August-September 2016 from pre-school teachers and Anganwadi workers under District Educational Office, Ludhiana district, Punjab. Schools were divided among North, South, East, West zones and government-private schools as per the list obtained from primary District Educational Officer. Ethical committee clearance

Received: Jan. 18, 2020; Accepted: Mar. 4, 2020

*Correspondence Dr. Basil. M. Mathew.

Department of Pedodontics, B.J.S. Dental College Ludhiana, Punjab, India.

Email: eldhos.jacob1988@gmail.com

was obtained and the questionnaires were pretested among 30 elementary school teachers after taking their consent.

350 pre-school Teachers and Anganwadi workers were selected based on stratified random sampling in these schools. The questionnaire was first formulated in English and translated into local language; linguistic reliability was ensured by back-translation. The 27-item four-part questionnaire comprised socio-demographic, knowledge, attitude and practice questions regarding Early Childhood Caries. Incomplete and multiple responded questionnaires were excluded. Knowledge and practice data were subjected to descriptive analysis and frequency distributions were generated. One way analysis of variance and t-test were applied to examine relationships between all dependent and independent socio-demographic variables. All statistical analyses were performed using the SPSS 23 software (SPSS, Chicago).

RESULTS

Among the selected group 326 pre-school teachers and Anganwadi workers responded to the questionnaires. 93.1% was the response rate. 11 questionnaires were excluded based on incomplete and multiple responses. 315 responded questionnaires were selected for statistical analysis. 97.8% were females. 71.8% of the participants were parents. 56.5% of teachers were from government-aided schools and 43.5% from private schools. Correlations of socio-demographic variables were not statistically significant. Results revealed that only 16.2 % of teachers considered commencement of brushing as soon as the first tooth erupts. Majority of teachers considered brushing their baby's teeth only after the complete eruption of deciduous dentition (77.8%) and permanent dentition (Figure 1). Teachers preferred first dental checkup for their child due to a history of pain (34.3%) or on completion of deciduous dentition (39.7%), whereas only 21.6% preferred it before the first birthday (Figure 2). Merely 10.5% of the participants knew the fact that prolonged and on-demand nighttime breastfeeding can cause Dental Caries (Figure 3). Majority of the teachers (88.6%) never had a habit of rinsing their baby's teeth after each bottle/breastfeeding. 93.0% of the teachers agree to the fact that there is a need for more

information/training to create awareness and the lack of dental health education to be included in the primary school curriculum. 81.6% of the teachers were positive to contribute in educating students and their parents about Early Childhood Caries.

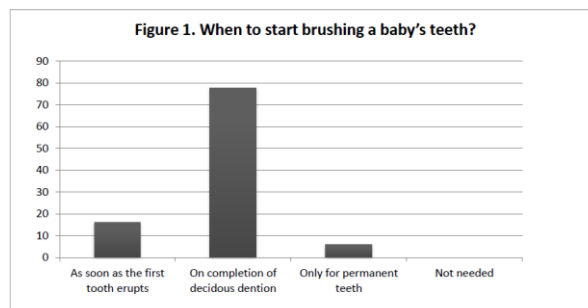


Fig 1: When to start brushing a baby's teeth?

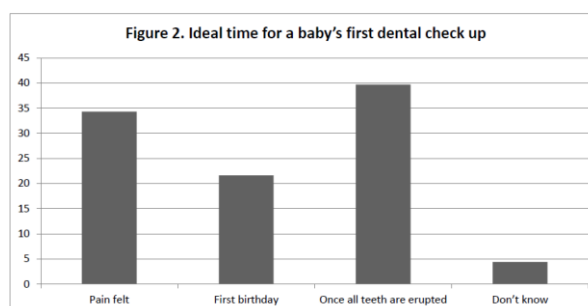


Fig 2: Ideal time for a baby's first dental check up.

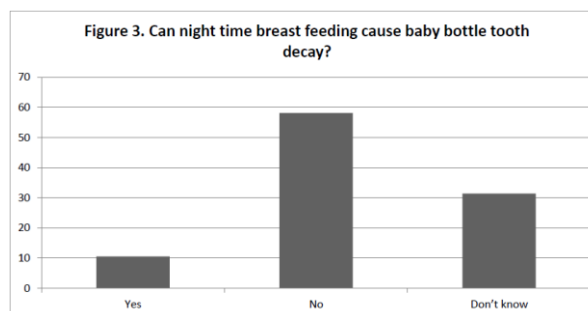


Fig 3: Can night time breastfeeding causes baby bottle tooth decay?

DISCUSSION

Use of self-administered questionnaires to gather health-related information has its limitations in identifying cause-effect relationship. Even so, confidentiality and the measures to ensure understanding of the given instructions favour the degree of frankness and ensure promising outcomes.⁷ Moreover; this method of collecting data has been tested previously and has shown adequate reliability.

Table 1: Questionnaire.

KNOWLEDGE, ATTITUDE AND PRACTICE AMONG PRIMARY SCHOOL TEACHERS ON EARLY CHILDHOOD CARIES IN LUDHIANA CITY

NOTE: FOLLOWING ITEMS ARE MEANT FOR OBTAINING INFORMATION FROM YOU. IT IS PURELY FOR RESEARCH PURPOSE AND YOUR IDENTITY WILL BE KEPT CONFIDENTIAL

INSTRUCTIONS: COMPLETE THE FOLLOWING PLACING A TICK MARK (✓) IN THE APPROPRIATE PLACE

SECTION A: DEMOGRAPHIC VARIABLES

1) GENDER

A) FEMALE ☐ B) MALE ☐

2) MARITAL STATUS

A) SINGLE ☐ B) MARRIED ☐

3) CHILDREN

A) ONE ☐ B) MORE THAN ONE CHILDREN ☐
C) NO CHILDREN ☐

4) TYPE OF SCHOOL

A) GOVERNMENT ☐ B) PRIVATE ☐

5) EDUCATION LEVEL

A) INTERMEDIATE ☐ B) BACHELORS ☐
C) POSTGRADUATE ☐

6) YEARS OF TEACHING EXPERIENCE

A) <5 YEARS ☐ B) 6-15 YEARS ☐
C) 16-25 YEARS ☐ D) >26 YEARS ☐

7) MONTHLY INCOME

A) 5000-10,000 ☐ B) 10,000-15,000 ☐ C) 15,000-20,000 ☐
D) 20,000-35,000 ☐ E) ≥ 35,000 ☐

8) BRUSHING A BABY'S TEETH SHOULD START

A) AS SOON AS THE FIRST TOOTH ERUPTS ☐ B) AFTER ALL MILK TEETH ERUPTS ☐
C) ONLY AFTER THE ERUPTION OF PERMANENT TEETH ☐ D) NOT NEEDED ☐

9) CAN TOOTH DECAY AFFECT BABIES BELOW 2 YEARS OF AGE

A) YES ☐ B) NO ☐ C) DON'T KNOW ☐

10) DO YOU KNOW ABOUT A DENTAL DISEASE CALLED BABY BOTTLE TOOTH DECAY

A) YES ☐ B) NO ☐ C) DON'T KNOW ☐

11) DO YOU KNOW ABOUT THE ROLE OF FLUORIDES IN TOOTH DECAY

A) YES ☐ B) NO ☐ C) DON'T KNOW ☐

12) AMOUNT OF TOOTH PASTE TO BE USED FOR A CHILD UNDER 3 YEARS

A) A SMEAR AMOUNT (GRAIN SIZE) ☐ B) A PEA SIZE ☐
C) SAME AS ADULTS ☐ D) NOT USED ☐ E) DON'T KNOW ☐

13) WHAT IS THE IDEAL TIME FOR A BABY'S FIRST DENTAL CHECK UP?

A) WHEN THERE IS PAIN ☐
B) BY HIS/HER FIRST BIRTHDAY ☐
C) ONCE ALL TEETH ARE ERUPTED ☐ D) DON'T KNOW ☐

- 14) **IN CASE OF A DENTAL PROBLEM IT IS NECESSARY TO GET DENTAL TREATMENT DONE IN MILK TEETH**
A) YES ☐ B) NO ☐ C) DON'T KNOW ☐
- 15) **CAN BABY BOTTLE TOOTH DECAY BE CAUSED BY BACTERIA THAT ARE TRANSMITTED FROM PARENTS OR SIBLINGS BY SHARING UTENSILS?**
A) YES ☐ B) NO ☐ C) DON'T KNOW ☐
- 16) **PROLONGED/FREQUENT USE OF SWEETENED PACIFIERS/FEEDING BOTTLE CAN CAUSE BABY BOTTLE TOOTH DECAY**
A) YES ☐ B) NO ☐ C) DON'T KNOW ☐
- 17) **NIGHT TIME BREAST FEEDING CAN CAUSE BABY BOTTLE TOOTH DECAY**
A) YES ☐ B) NO ☐ C) DON'T KNOW ☐
- 18) **INFANT FORMULAS (eg.CERELAC) CAN CAUSE DECAY OF THE TEETH**
A) YES ☐ B) NO ☐ C) DON'T KNOW ☐
- 19) **FREQUENT AND PROLONGED BREAST FEEDING DURING THE DAY TIME CAN CAUSE TOOTH DECAY**
A) YES ☐ B) NO ☐ C) DON'T KNOW ☐
- 20) **TEACHERS CAN CONTRIBUTE TO EDUCATE THEIR STUDENTS AND PARENTS ABOUT BABY BOTTLE TOOTH DECAY**
A) STRONGLY AGREE ☐ B) AGREE ☐ C) UNCERTAIN ☐
D) DISAGREE ☐ E) STRONGLY DISAGREE ☐
- 21) **THERE IS A NEED FOR MORE INFORMATION / TRAINING FOR TEACHERS TO CREATE AWARENESS REGARDING ORAL HEALTH AMONG CHILDREN AND PARENTS**
A) STRONGLY AGREE ☐ B) AGREE ☐ C) UNCERTAIN ☐
D) DISAGREE ☐ E) STRONGLY DISAGREE ☐
- 22) **YOUR SCHOOL AUTHORITIES HAVE PUT ENOUGH EFFORT TO MAKE YOU AWARE ABOUT BABY BOTTLE TOOTH DECAY**
A) STRONGLY AGREE ☐ B) AGREE ☐ C) UNCERTAIN ☐
D) DISAGREE ☐ E) STRONGLY DISAGREE ☐
- 23) **DENTAL HEALTH EDUCATION SHOULD BE INCLUDED IN THE PRIMARY SCHOOL CURRICULUM**
A) STRONGLY AGREE ☐ B) AGREE ☐ C) UNCERTAIN ☐
D) DISAGREE ☐ E) STRONGLY DISAGREE ☐
- 24) **DO YOUR FAMILY MEMBERS GET REGULAR DENTAL CHECKUP AT LEAST ONCE A YEAR?**
A) YES ☐ B) NO ☐ C) NEVER ☐
- 25) **HOW OFTEN YOU HAD GIVEN PLAIN WATER TO YOUR BABY AFTER EACH BOTTLE / BREAST FEEDING?**
A) ALWAYS ☐ B) SOMETIMES ☐ C) NEVER ☐
- 26) **ANY DENTAL HEALTH CAMP WAS CONDUCTED IN YOUR SCHOOL TILL DATE?**
A) YES ☐ B) NO ☐ C) DON'T KNOW ☐
- 27) **I HAVE ADVISED PARENTS TO VISIT DENTIST REGARDING THEIR CHILD'S TOOTH DECAY?**
A) YES ☐ B) NO ☐

The present cross-sectional study is one of the few that investigated knowledge, attitude and practices regarding ECC rather than oral health and dental caries in general. In the current study, a child's first visit to a dentist had been incorrectly reported by the majority of teachers. This clearly indicates the lack of awareness and knowledge of the fundamental aspects of children's oral health. American Academy of pediatric dentistry recommends that all children see a dentist by 12 months of age. While the American Academy of paediatrics recommends the same only for children at "caries risk".⁸

Also, teachers were unknown to the caries potential of prolonged and on-demand night time breastfeeding. This finding demonstrates the persistence of "conventional dental wisdom" that also was found in the survey of Kentucky teachers.⁹ Teachers were incorrectly informed regarding frequent breastfeeding as an aetiology for Early Childhood Caries.¹

In 1979 Kenney, a school administrator described the role of school in affecting dental health status for children as "a potential yet unrealized".¹⁰ School children are an easily identifiable, accessible, and homogenous group in the population readily available for international comparison. Schoolteachers have a great influential potential owing to their authority, ability to reach out to children, establishing continuity in the instructions. A possible disadvantage could, however, be that the teachers may not have an adequate background for providing health education.¹¹ Studies have reported the willingness of schoolteachers to participate in dental health education more in supportive roles such as encouraging parents and children.⁷

Though pre-school teachers and Anganwadi workers were found ill-informed regarding the preventive practices, they responded positively to get involved in the awareness programme to prevent early childhood caries.

CONCLUSIONS

1. A selected sample of teachers demonstrated incomplete oral health knowledge, illegal oral health practices.

2. Their knowledge, attitude and practices were independent on any socio-demographic variants.

The study indicated an urgent need for an organized awareness programme regarding preventive practices regarding ECC.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

REFERENCES

1. Reisine S, Douglass JM. Psychosocial and behavioral issues in early childhood caries. Community Dentistry and Oral Epidemiology. 1998;26(S1):32-44.
2. Ismail AI, Sohn W. A systematic review of clinical diagnostic criteria of early childhood Caries. Journal of Public Health Dentistry. 1999;59(3):171-91.
3. Preventive oral health intervention for pediatricians. American academy of pediatrics. 2008; 122(6):1387-1394.
4. Mouradian WE, Huebner CE, Ramos-Gomez F, Slavkin HC. Beyond access: the role of family and community in children's oral health. Journal of Dental Education. 2007;71(5):619-31.
5. Petersen PE, Razanamihaja N. Carbamide-containing polyol chewing gum and prevention of dental caries in schoolchildren in Madagascar. International dental journal. 1999 Aug 1;49(4):226.
6. Freed JR, Goldstein MS. Dental health: what is being taught to college students. The Journal of the American Dental Association. 1976;92(5):940-5.
7. Mwangosi IE, Nyandindi U. Oral health related knowledge, behaviours, attitude and self-assessed status of primary school teachers in Tanzania. International dental journal. 2002 Jun 1;52(3):130-6.

8. Hale KJ. Oral health risk assessment timing and establishment of the dental home. *Pediatrics*. 2003;111(5 Pt 1):1113-6.
9. Mullins R, Sprouse W. Dental health knowledge of elementary school teachers in Bowling Green, Kentucky, 1972. *The Journal of the American Society for Preventive Dentistry*. 1973;3(1):60.
10. Kennev JB. The role and responsibility of schools in affecting dental health status—a potential yet unrealized. *Journal of public health dentistry*. 1979 Dec 1;39(4):262-7.
11. Petersen PE, Hadi R, Al-Zaabi FS, Hussein JM, Behbehani JM, Skougaard MR, Vigild M. Dental knowledge, attitudes and behavior among Kuwaiti mothers and school teachers. *The Journal of pedodontics*. 1989 Dec;14(3):158-64.