

Knowledge, Attitude & Practices of Caregiver in Relation to Oral Health of Preschool Children in Shimla City

Parul Uppal Malhotra, Seema Thakur, Parul Singhal

Department of Paediatric and Preventive Dentistry, H.P.G.D.C., Shimla, India.

Address for Correspondence:

Dr. Parul Uppal Malhotra, Post Graduate Student, Department of Paediatric and Preventive Dentistry, H.P.G.D.C., Shimla, India.

ABSTRACT:

Background: Prevention strategies are integral to improve the oral health for young children. For success of preventive programmes, social value that parents and caregivers ascribe to primary teeth should be known. The aim of this study is to report caregivers' knowledge and attitudes toward preschool oral health and early childhood caries (ECC) in Shimla city.

Materials and Methods: A cross-sectional study was conducted on 79 caregivers at two selected vaccination centers in Shimla city. Questionnaires with responses in yes or no were distributed by the interviewer. For each question, one of the answer choices was consistent with the consensus in the pediatric dental literature in relation to early childhood caries prevention, and was considered to be correct. The χ^2 test and ANOVA, were used to assess the associations between the variables in question and $p < 0.05$ was accepted as statistically significant.

Results: On comparison of educational qualification of caregivers with respect to knowledge, attitude and practices about oral health of preschool children, insignificant difference in knowledge and oral health practices but significant difference in attitude (p value=0.019) were found. Post graduates and professionally qualified showed better scores. On comparison on basis of relation to child, mother had better attitude toward oral health of preschool children as compared to grandmother (p value=0.032).

Conclusion: Educational status of caregivers is directly related to knowledge about oral health of infants. Appropriate and accurate information about oral health care for infants, especially the use of nursing bottle at night, regular dental visits, value of tooth brushing and the use of fluoridated tooth pastes should be provided by health care professionals who are first to come in contact with expectant mothers and caregivers. Development and implementation of wide-scale, long-term programs of health education for expectant new mothers and caregivers is needed for the promotion of oral health of preschool children.

Keywords: Caregivers, Early childhood caries, Pre-school children.

INTRODUCTION

Oral health is an essential part of preschool health and well-being. Unfortunately, dental caries affects many children as early as 12 months of age, it negatively affects the oral health of children.¹ It reduces the oral health related quality of life as compared to caries free children. There is a dearth of information on the oral health of pre-school children in India.^{2,3} Mean Decayed Missing Filled Teeth (DMFT) of 1.40 is reported by data from NOHS 2000,⁴ which is quite high as compared to that of developed countries in Europe, North America and Australia.⁵ The American Academy of Pediatric Dentistry currently

defines S-ECC as 'Any sign of smooth-surface caries in a child younger than 3 years old. From ages 3 to 5, one or more cavitated, missing (due to caries) or filled smooth surfaces in primary maxillary anterior teeth, or a dmf score of ≥ 4 (age 3), ≥ 5 (age 4) or ≥ 6 (age 5) surfaces is indicative of SECC.⁶ Risk of early childhood caries in infants and toddlers is increased by improper feeding practices, by promoting the early establishment of *S. mutans* in the oral cavity.⁷ The consequences of untreated caries in children include an increased risk for developing new carious lesions in both the

primary and permanent dentitions.⁶ In addition, there is strong evidence of the positive correlations between untreated S-ECC and failure to thrive, delayed social and intellectual development and impaired oral health-related quality of life.⁶ Children under the age of 5 years generally spend most of their time with parents and guardians even when they attend pre-schools or nurseries. These early years involve “primary socialization” during, which the earliest childhood routines and habits are acquired,⁵ which are dependent on the knowledge and behavior of parents and siblings. Parent’s knowledge and positive attitude toward good dental care are very important in the preventive cycle. Studies have reported that poor attitude of parents toward oral health of infants and young children are associated with increased caries prevalence.^{8,9} Without basic knowledge of caregivers about importance of the deciduous teeth, cariogenic diet and oral hygiene maintenance, it is difficult to employ effective disease preventive strategies.¹⁰ The aim of this study was to assess the level of the knowledge, attitudes and practices of caregivers in Shimla city regarding the oral health of preschool children.

MATERIALS AND METHODS

The present study was a Cross-sectional study which included a retrospective interview with caregivers. The sampling frame for this study comprised caregivers of the children upto 5 years of age, attending the local Vaccination centres in the city. The necessary approvals and ethical clearance were taken. Informed consent was taken from caregivers before enrolling them in the study. A questionnaire was designed to assess the knowledge, attitude and practices of caregivers’ regarding oral health of their pre-school children. Twenty three item questionnaire (figure 1) in english and hindi covering sociodemographic characteristics, dietary practices, oral hygiene practices and importance of deciduous teeth was distributed among the caregivers attending

centres for vaccination. Total Eighty caregivers participated in the study. Participants were asked to respond to the questions by answering as yes or no; the correct answer was awarded a score of 2, while wrong answer was awarded as the score 1. Questions in the survey were grouped according to knowledge attitude and practices among population. Question no 1-7 were about knowledge about ECC. Question no 8 to 12 were about attitude about ECC and Question no 13 to 16 were about oral hygiene practices.

1. Consent: I am willingly participating in this study-
 मैं अपनी इच्छा से इस अध्ययन में हिस्सा ले रही/रहा है।

2. Name of care giver-

नाम:

3. Age/Sex-

उम्र / लिंग :

3. Relation to child-

बच्चे से रिश्ता :

4. Educational Qualification-

शैक्षिक योग्यता :

5. Age of child-

बच्चे की उम्र :

6. No. of Children in family & their Age

परिवार में बच्चों की संख्या : व उनकी उम्र

7. Household income (Annually)-

वार्षिक आय: (वार्षिक)

QUESTIONNAIRE

| | Yes | No |
|---|--------------------------|--------------------------|
| 1. Baby teeth are important बच्चों के दांत महत्वपूर्ण हैं। | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Problems with baby teeth will affect adult teeth. दुध के दांतों की समस्या पक्के दांतों पर असर डालती है। | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Rotten teeth could affect a child's health. सड़े हुए दांत बच्चों की सेहत पर असर डालते हैं। | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Babies without teeth need mouth cleaned. जिन बच्चों के दांत नहीं आए हैं उनका मुँह साफ करना चाहिए। | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Breast feeding is important for the health of child's teeth. माँ का दुध बच्चों की सेहत के लिए महत्वपूर्ण है। | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Mother's diet during pregnancy will affect baby's teeth. गर्भवती महिला का आहार पैदा होने वाले बच्चे के दांतों पर असर डालता है। | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Using fluoride toothpaste helps to prevent tooth decay. फ्लोराइड दुध पेस्ट से बच्चों के दांतों की सड़न कम होती है। | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Good idea to give baby a bottle to comfort while teething. दांत निकालने वाले बच्चे को बोटल के द्वारा दुध पिलाना अच्छा सुझाव है। | <input type="checkbox"/> | <input type="checkbox"/> |

Figure 1: Questionnaire

9. Frequently giving child pop is okay for child's teeth.
 बच्चों को बार बार चुसनी देना ठीक है।
10. Frequently giving child juice is okay for child's teeth.
 बच्चों को बार बार जूस पिलाना उसके दाँतों के लिए ठीक है।
11. Frequently feeding child milk or formula is okay for his teeth.
 बच्चों को बार बार पैकेट का दुध अथवा फॉर्मूला / सेरेलेक पिलाना उसके दाँतों के लिए ठीक है।
12. Babies who don't have bottle will cry more.
 जिन बच्चों को दूध की बोतल नहीं देते वो ज्यादा रोते हैं।
13. As baby gets older and can hold a bottle easily, he/she should use bottle whenever he/she wants.
 जब बच्चा दूध की बोतल पकड़ने योग्य हो जाए, जब वो चाहे उसे दूध की बोतल दे देनी चाहिए।
14. Okay to put baby to bed with a bottle of milk.
 सोते समय बच्चों को दूध की बोतल देना सही है।
15. Bottle feeding after child is 1 yr old is bad for his/her teeth.
 1 साल से बड़े बच्चों को बोतल से दूध पिलाना उसके दाँतों के लिए हानिकारक है।
16. Children should see dentist by first birthday.
 बच्चों को पहली सालगिराह से पहले उसे दन्त चिकित्सक को दिखाना चाहिए।

The results were expressed as scores of responses for each category of questions. One-way analysis of variance (ANOVA) was used for comparing the knowledge of caregivers between different subgroups. Chi-square test was utilized to find out the significant difference between the responses when comparison was based on educational status. For all the tests, a *p* value of 0.05 or less was used for statistical significance.

RESULTS

Characteristics of the caregivers appear in Table I. The majority of interviewed caregivers were mothers (83.8%) and 95% of caregiver were aged between 21-40 years. The caregivers were interviewed about whether they agreed or disagreed with specific queries designed to extract knowledge and attitudes about the primary dentition of infants and preschoolers. Responses appear in Table II and figure 2.

It was apparent that most caregivers believed that primary teeth were important (96.3%), dental disease could lead to general health problems (91.3%), breast feeding is important for the health of child's teeth (97.5%), frequently giving child pop is not good for

child's teeth (90%) and it's not right to put baby to bed with a bottle of milk (91.3%). However, only (42.5%) knew that using fluoride toothpaste helps to prevent tooth decay and (56.3%) were aware that bottle feeding after child is 1 yr old is bad for his/her teeth.

Table III shows there is significant difference (*p* value=0.007) in attitude of caregivers about oral health of preschool children when compared on the basis of their relationship with the child whereas there was statistically insignificant difference when knowledge and practices were compared. While comparing attitude of mother to grandmother towards oral health of preschool children, mother had statistically significant better scores. (*p*value= 0.032).

On comparison of age of caregiver with knowledge, attitude and practices about oral health of preschool children (table IV), we found insignificant difference.

On comparison of educational qualification of caregivers with respect to knowledge, attitude and practices about oral health of preschool children (table V), we found insignificant difference in knowledge and oral health practices but significant difference in attitude (*p*value=0.19). Post graduates and professionally qualified showed better scores. Figure 3 and Figure 4 describes the correct responses of caregivers compared to their educational qualification.

On comparison of household income of caregivers with respect to knowledge, attitude and practices about oral health of preschool children (table VI), insignificant difference was found in all three domains.

On comparison of number of children in house with respect to knowledge, attitude and practices about oral health of preschool children among caregivers (table VII), statistically insignificant difference was found in all three domains.

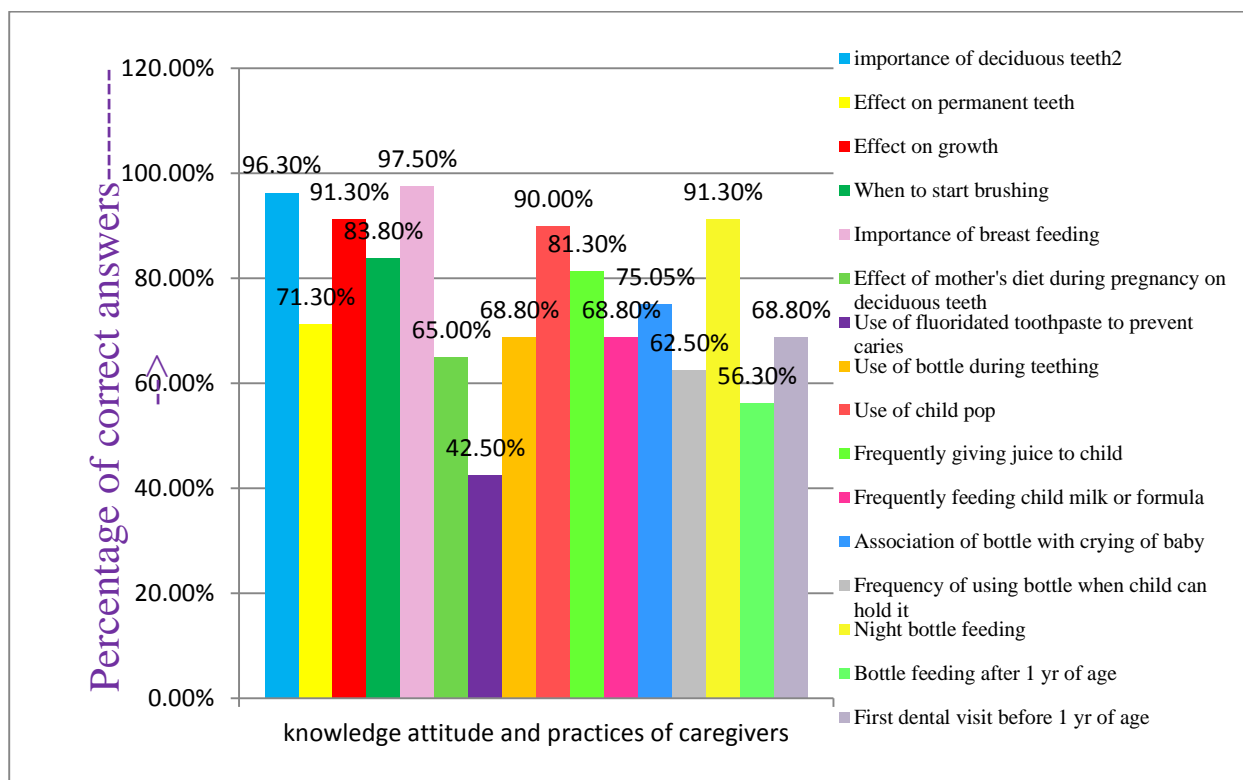


Figure 2: Knowledge Attitude and Practices of Caregivers

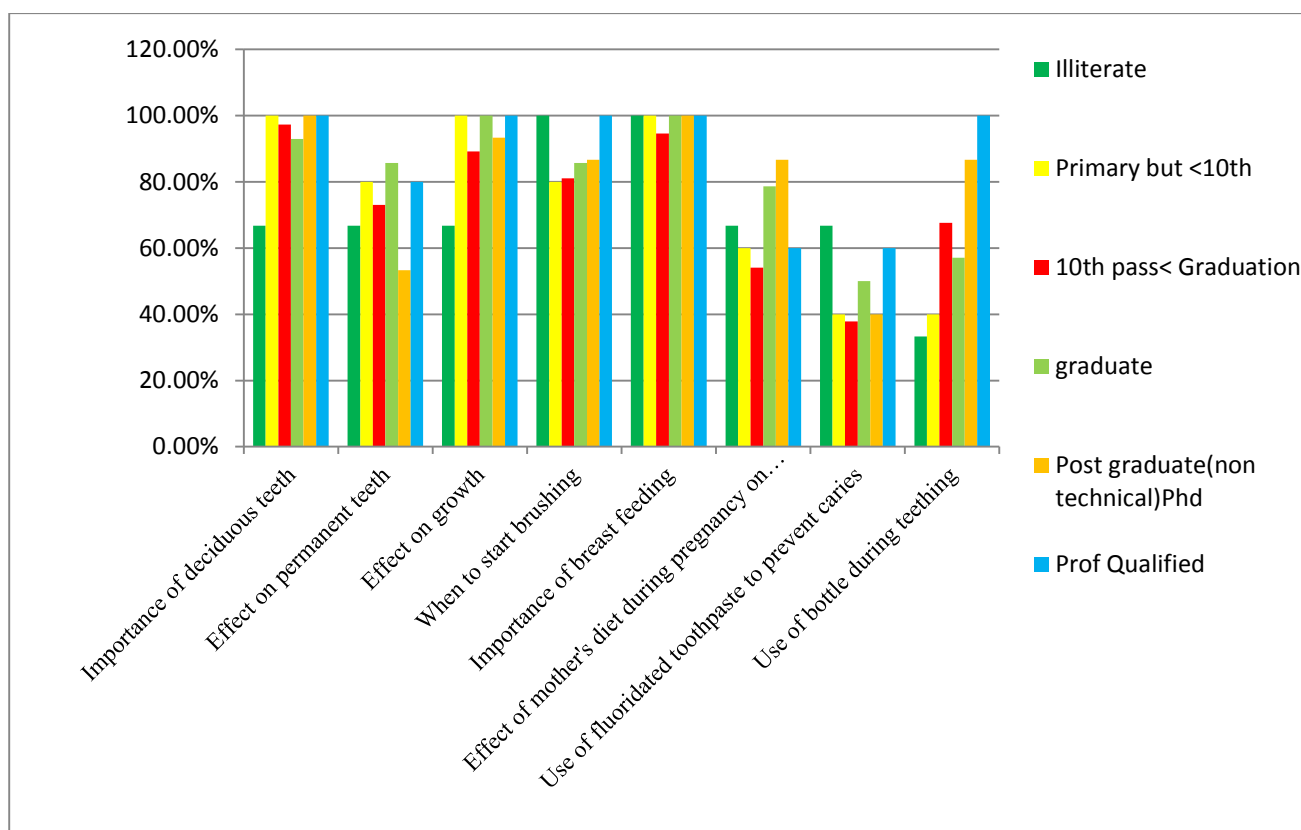


Figure 3: Correct responses about oral health of preschool children among caregivers on the basis of their educational qualification

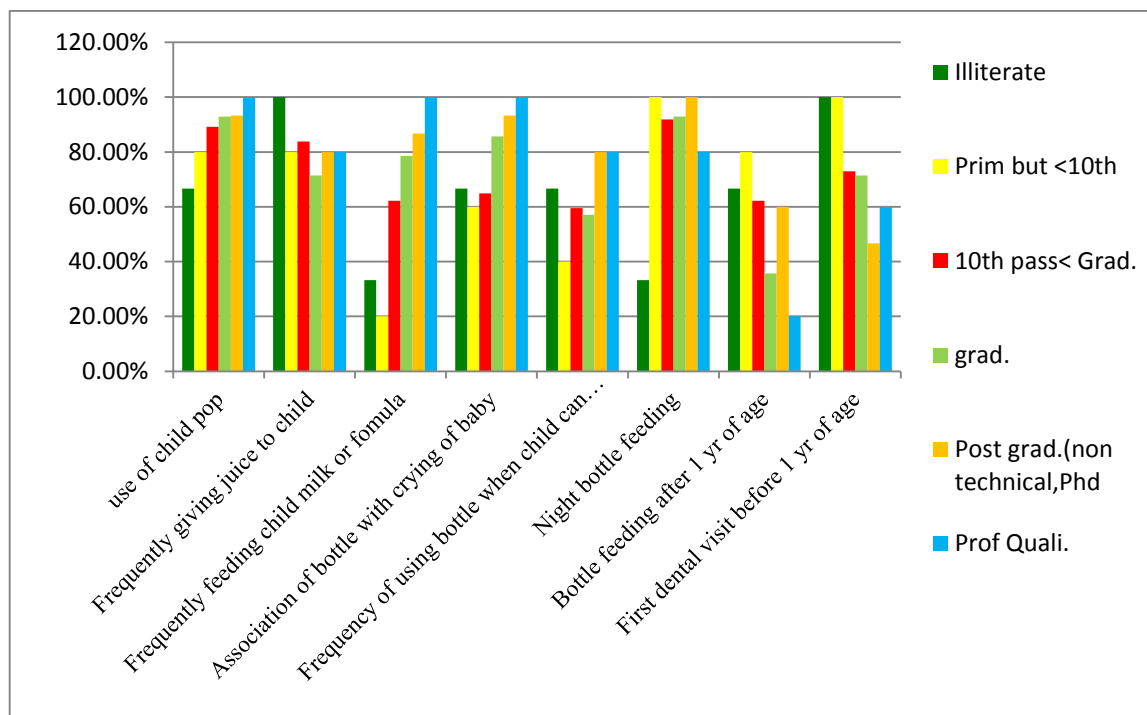


Figure 4: Correct responses about oral health of preschool children among caregivers on the basis of their educational qualification

Table I: Characteristics of caregiver

| Primary caregiver characteristic | Frequency | Percent |
|-----------------------------------|-----------|---------|
| Relationship to child | | |
| Mother | 67 | 83.8 |
| Father | 10 | 12.5 |
| Grandmother | 2 | 2.5 |
| other | 1 | 1.3 |
| Age | | |
| <20 | 2 | 2.5 |
| 21-40 | 76 | 95.0 |
| >41 | 2 | 2.5 |
| Educational qualification | | |
| Illiterate | 3 | 3.8 |
| < primary but attended school | 1 | 1.3 |
| Prim but <10 th | 5 | 6.3 |
| 10th pass < Graduation | 37 | 46.3 |
| Graduation | 14 | 17.5 |
| Post grad. (non technical, Phd) | 15 | 18.8 |
| Prof Qualification | 5 | 6.3 |
| No. of children | | |
| 1 | 37 | 46.3 |
| 2 | 31 | 38.8 |
| ≥3 | 12 | 15.0 |
| Household income (Monthly) | | |
| <1000 | 3 | 3.8 |
| 1000-2499 | 3 | 3.8 |
| 2500-4999 | 12 | 15.0 |
| 5000-9999 | 27 | 33.8 |
| 10000-19999 | 14 | 17.5 |
| 20000-49999 | 7 | 21.3 |
| >50000 | 4 | 5.0 |

Malhotra et al: Knowledge, Attitude & Practices of Caregiver in Relation to Oral Health of Preschool Children in Shimla City

Table II: Correct response percentage of caregivers to oral health knowledge, attitude and practices.

| Survey item | No. of correct answers | Percentage |
|--|------------------------|------------|
| Baby teeth are important | 77 | 96.3 |
| Problems with baby teeth will affect adult teeth | 57 | 71.3 |
| Rotten teeth could affect a child's health. | 73 | 91.3 |
| Babies without teeth need mouth cleaned | 67 | 83.8 |
| Breast feeding is important for the health of child's teeth. | 78 | 97.5 |
| Mother's diet during pregnancy will affect baby's teeth. | 52 | 65.0 |
| Using fluoride toothpaste helps to prevent tooth decay | 34 | 42.5 |
| Good idea to give baby a bottle to comfort while teething. | 55 | 68.8 |
| Frequently giving child pop is okay for child's teeth. | 72 | 90.0 |
| Frequently giving child juice is okay for child's teeth. | 65 | 81.3 |
| Frequently feeding child milk or formula is okay for his teeth. | 55 | 68.8 |
| Babies who don't have bottle will cry more. | 60 | 75.0 |
| As baby gets older and can hold a bottle easily, he/she should use bottle whenever he/she wants. | 50 | 62.5 |
| Okay to put baby to bed with a bottle of milk. | 73 | 91.3 |
| Bottle feeding after child is 1 yr old is bad for his/her teeth. | 45 | 56.3 |
| Children should see dentist by first birthday. | 55 | 68.8 |

Table III: Comparison of knowledge, attitude and practices about oral health of preschool children among caregivers on the basis of their relationship to child

| | Caregiver characteristic | N | Mean | Std. deviation | Std. error | Sum of squares | df | F (ANOVA) | Sig. |
|------------------|------------------------------|-------|-------|----------------|------------|----------------|----|-----------|-------|
| Knowledge | Relationship to child | | | | | | | | |
| | Mother | 67 | 12.00 | 1.41 | 1.00 | 121.80 | 79 | 0.836 | 0.478 |
| | Father | 10 | 13.00 | 1.05 | 0.33 | | | | |
| | Grandmother | 2 | 12.38 | 1.26 | 0.15 | | | | |
| | Other | 1 | 12.00 | | | | | | |
| Total | 80 | 12.45 | 1.24 | 0.13 | | | | | |
| Attitude | Mother | 67 | 7.00 | 1.41 | 1.00 | 99.55 | 79 | 4.30 | 0.007 |
| | Father | 10 | 8.30 | 1.33 | 0.42 | | | | |
| | Grandmother | 2 | 8.98 | 1.00 | 0.12 | | | | |
| | Other | 1 | 7.00 | | | | | | |
| | Total | 80 | 8.82 | 1.12 | 0.12 | | | | |
| Practice | Mother | 67 | 7.50 | 0.70 | 0.50 | 68.48 | 79 | 1.286 | 0.285 |
| | Father | 10 | 6.50 | 0.70 | 0.22 | | | | |
| | Grandmother | 2 | 6.76 | 0.95 | 0.11 | | | | |
| | Other | 1 | 8.00 | | | | | | |
| | Total | 80 | 6.76 | 0.93 | 0.104 | | | | |

Table IV: Comparison of knowledge, attitude and practices about oral health of preschool children among caregivers on the basis of their age

| | Age | N | Mean | Std. deviation | Std. error | Sum of squares | df | F (ANOVA) | Sig. |
|------------------|-------|----|--------|----------------|------------|----------------|----|-----------|-------|
| Knowledge | <20 | 2 | 12.500 | 2.12 | 1.50 | 121.80 | 79 | 0.133 | 0.876 |
| | 21-40 | 76 | 12.46 | 1.23 | 0.14 | | | | |
| | >41 | 2 | 12.00 | 1.41 | 1.00 | | | | |
| | Total | 80 | 12.45 | 1.24 | 0.13 | | | | |
| Attitude | <20 | 2 | 8.50 | 0.70 | 0.50 | 99.55 | 79 | 2.964 | 0.058 |
| | 21-40 | 76 | 8.88 | 1.09 | 0.12 | | | | |
| | >41 | 2 | 7.00 | 1.41 | 1.00 | | | | |
| | Total | 80 | 8.82 | 1.12 | 0.12 | | | | |
| Practice | <20 | 2 | 6.50 | 0.70 | 0.50 | 68.488 | 79 | 0.708 | 0.496 |
| | 21-40 | 76 | 6.75 | 0.94 | 0.11 | | | | |
| | >41 | 2 | 7.50 | 0.70 | 0.50 | | | | |
| | Total | 80 | 6.76 | 0.93 | 0.10 | | | | |

Malhotra et al: Knowledge, Attitude & Practices of Caregiver in Relation to Oral Health of Preschool Children in Shimla City

Table V: Comparison of knowledge, attitude and practices about oral health of preschool children among caregivers on the basis of their educational qualification

| | Educational qualification | N | Mean | Std. deviation | Std. error | Sum of squares | df | F (ANOVA) | Sig. |
|------------------|----------------------------------|----------|-------------|-----------------------|-------------------|-----------------------|-----------|------------------|-------------|
| Knowledge | Illiterate | 3 | 12.33 | 1.52 | 0.88 | 121.80 | 79 | 2.268 | .051 |
| | < primary but attended school | 1 | 9.00 | | | | | | |
| | Prim but <10 th | 5 | 12.60 | 1.14 | 0.50 | | | | |
| | 10th pass< Grad. | 37 | 12.21 | 1.25 | 0.20 | | | | |
| | Graduation | 14 | 12.92 | 0.82 | 0.22 | | | | |
| | Post grad. (non technical),Phd | 15 | 12.60 | 1.29 | 0.33 | | | | |
| | Prof Qualification | 5 | 13.00 | 1.00 | 0.44 | | | | |
| | Total | 80 | 12.45 | 1.24 | 0.13 | | | | |
| Attitude | Illiterate | 3 | 8.00 | 1.00 | 0.57 | 99.55 | 79 | 2.723 | .019 |
| | < primary but attended school | 1 | 9.00 | | | | | | |
| | Prim but <10 th | 5 | 7.80 | 1.09 | 0.48 | | | | |
| | 10th pass< Grad. | 37 | 8.64 | 1.22 | 0.20 | | | | |
| | Graduation | 14 | 8.85 | 1.02 | 0.27 | | | | |
| | Post grad. (non technical),Phd | 15 | 9.40 | 0.63 | 0.163 | | | | |
| | Prof Qualification | 5 | 9.80 | 0.44 | 0.20 | | | | |
| | Total | 80 | 8.82 | 1.12 | 0.12 | | | | |
| Practice | Illiterate | 3 | 6.67 | 0.57 | 0.33 | 68.488 | 79 | .551 | .768 |
| | < primary but attended school | 1 | 6.00 | | | | | | |
| | Prim but <10 th | 5 | 7.20 | 0.44 | 0.20 | | | | |
| | 10th pass< Grad. | 37 | 6.83 | 0.89 | 0.14 | | | | |
| | Graduation | 14 | 6.57 | 0.93 | 0.25 | | | | |
| | Post grad. (non technical),Phd | 15 | 6.80 | 1.14 | 0.29 | | | | |
| | Prof Qualification | 5 | 6.40 | 1.14 | 0.50 | | | | |
| | Total | 80 | 6.76 | 0.93 | 0.10 | | | | |

Table VI: Comparison of knowledge, attitude and practices about oral health of preschool children among caregivers on the basis of their house hold income

| | Household income | N | Mean | Std. deviation | Std. error | Sum of squares | df | F (ANOVA) | Sig. |
|------------------|-------------------------|----------|-------------|-----------------------|-------------------|-----------------------|-----------|------------------|-------------|
| Knowledge | <1000 | 3 | 13.33 | 0.57 | 0.33 | 121.80 | 79 | .893 | .505 |
| | 1000-2499 | 3 | 12.33 | 1.52 | 0.88 | | | | |
| | 2500-4999 | 12 | 12.08 | 1.56 | 0.45 | | | | |
| | 5000-9999 | 27 | 12.22 | 1.21 | 0.23 | | | | |
| | 10000-19999 | 14 | 12.50 | 1.28 | 0.34 | | | | |
| | 20000-49999 | 7 | 12.76 | 1.09 | 0.26 | | | | |
| | >50000 | 4 | 13.00 | 0.81 | 0.40 | | | | |
| | Total | 80 | 12.45 | 1.24 | 0.13 | | | | |
| Attitude | <1000 | 3 | 9.00 | 1.00 | 0.57 | 99.55 | 79 | .747 | .613 |
| | 1000-2499 | 3 | 8.33 | 1.15 | 0.66 | | | | |
| | 2500-4999 | 12 | 8.41 | 1.16 | 0.33 | | | | |
| | 5000-9999 | 27 | 8.85 | 0.98 | 0.19 | | | | |
| | 10000-19999 | 14 | 8.71 | 1.26 | 0.33 | | | | |
| | 20000-49999 | 7 | 9.05 | 1.29 | 0.31 | | | | |
| | >50000 | 4 | 9.50 | 0.57 | 0.28 | | | | |
| | Total | 80 | 8.82 | 1.12 | 0.12 | | | | |
| | <1000 | 3 | 6.33 | 1.52 | 0.88 | 68.488 | 79 | .906 | .495 |
| | 1000-2499 | 3 | 7.00 | 1.00 | 0.57 | | | | |
| | 2500-4999 | 12 | 6.75 | 0.62 | 0.17 | | | | |
| | 5000-9999 | 27 | 6.77 | 0.80 | 0.15 | | | | |

| | | | | | | | | | |
|-----------------|-------------|----|------|------|------|--|--|--|--|
| Practice | 10000-19999 | 14 | 6.64 | 0.92 | 0.24 | | | | |
| | 20000-49999 | 7 | 7.05 | 1.02 | 0.24 | | | | |
| | >50000 | 4 | 6.00 | 1.63 | 0.81 | | | | |
| | Total | 80 | 6.76 | 0.93 | 0.10 | | | | |

Table VII: Comparison of knowledge, attitude and practices about oral health of preschool children among caregivers on the basis of no. of children in the family

| | No. of children | N | Mean | Std. deviation | Std. error | Sum of squares | df | F (ANOVA) | Sig. |
|------------------|-----------------|----|-------|----------------|------------|----------------|----|-----------|------|
| Knowledge | 1 | 37 | 12.51 | 1.28 | 0.21 | 121.80 | 79 | .200 | .819 |
| | 2 | 31 | 12.45 | 1.20 | 0.21 | | | | |
| | ≥3 | 12 | 12.25 | 1.288 | 0.37 | | | | |
| | Total | 80 | 12.45 | 1.24 | 0.13 | | | | |
| Attitude | 1 | 37 | 8.70 | 1.12 | 0.18 | 99.55 | 79 | 1.658 | .197 |
| | 2 | 31 | 9.09 | 0.87 | 0.156 | | | | |
| | ≥3 | 12 | 8.50 | 1.56 | 0.45 | | | | |
| | Total | 80 | 8.82 | 1.12 | 0.12 | | | | |
| Practice | 1 | 37 | 6.70 | 0.99 | 0.16 | 68.488 | 79 | .239 | .788 |
| | 2 | 31 | 6.77 | 0.80 | 0.14 | | | | |
| | ≥3 | 12 | 6.91 | 1.08 | 0.31 | | | | |
| | Total | 80 | 6.76 | 0.93 | 0.10 | | | | |

DISCUSSION

This study was conducted to assess the knowledge, attitudes and practices in relation to the oral health of preschool children among caregivers in Shimla. The study results showed that the education and attitude of the caregivers strongly correlated with the practices and confirmed the findings of earlier studies.¹¹⁻¹³ Social, economic and environmental factors play a substantial role in shaping people's behavior and translating this knowledge into positive health choices and practices.¹⁴ In addition, the results of this study highlighted some general trends that were not always statistically significant but yet are worth noting. The first was a general weakness in the knowledge, attitude and practice in infant oral health-related areas such as the timing for the first dental visit, nighttime bottle feeding and frequency of giving milk formula to child. Better infant oral health-related trends, however, were observed with caregivers who were postgraduates or professionally qualified. The second observed trend was that caregivers in the age group of 21-40 years responded more correctly to knowledge and attitude based questions on

oral health of preschoolers than caregivers aged greater than 40 years. This is possibly due to higher educational levels among the younger group and would therefore have wider access to a variety of oral health-related knowledge.

Diet and dietary practices

The response to this section of questionnaire was encouraging as (79.9%) mothers had good knowledge about diet and dietary practices which include questions regarding sugar and caries, feeding practices, snacking practices. Similar results were reported by Lin *et al*¹⁵, Pradeep Kumar *et al*.¹⁶ and Suresh BS *et al*.¹⁷

Oral hygiene practices

The knowledge regarding brushing was high (83.8%), but knowledge about use of fluoridated tooth paste was not satisfactory, as nearly (42.5%) of the caregivers were aware of fluoridated tooth pastes.

Importance of deciduous teeth

Respondents (96.30%) have good knowledge on the importance of deciduous teeth. Respondents irrespective of educational status have low knowledge about weaning of bottle

(55.7%) and first dental visit (69.6%). Dietary knowledge and feeding practices are mostly influenced by the dietary tradition of a specific area and educational status of caregiver. Illiterate caregivers have less knowledge about importance of deciduous teeth (66.7%), frequency of snacking (33.30%) and feeding with bottle at night (33.0%). These results are in accordance with that of William *et al*, who concluded that level of oral health knowledge of parents is dependent on their socioeconomic status and educational level¹¹ and a Polish study which reports that mothers with lower level of education also have low levels of oral health knowledge.¹²

Oral hygiene practices established in pre-school years provide a foundation for oral health condition and patterns for use of dental services later and in adulthood. Greenwell and colleagues have reported that 84% of children who were caries free in primary dentition remained caries free in mixed dentition and those who had pit and fissure caries in primary dentition were more prone to develop smooth surface caries of primary teeth in mixed dentition as compared to caries free children.¹⁸ Caregivers, especially mothers, need to be helped to realize that they are role models for their children and to be encouraged to improve the child's dental health habit.

CONCLUSION

Caregivers in Shimla city had good knowledge about importance of deciduous teeth, cariogenic diet and importance of brushing, but lack information about use of fluorides, detrimental effects of nightfeeding with bottle on teeth and importance of periodic dental check-up. Appropriate and accurate information about oral health care for infants, especially the use of nursing bottle at night, regular dental visits, value of tooth brushing and the use of fluoridated tooth pastes should be provided by health care professionals who are first to come in contact with expectant mothers and caregivers. Development and implementation of wide-scale, long-term

programs of health education for expectant new mothers and caregivers is needed for the promotion of oral health of preschool children. .

REFERENCES

1. Pidamale R, Sowmya B, Thomas A, Jose T. Genetic sensitivity to bitter taste of 6-n Propylthiouracil: A useful diagnostic aid to detect early childhood caries in pre-school children. *Indian J Hum Genet* 2012; 18(1): 101–5.
2. Filstrup SL, Briskie D, Fonseca MD, Lawrence L, Wandera A, Inglehart MR. Early childhood caries and quality of life: child and parent perspectives. *Pediatr Dent* 2003;25: 431-40.
3. Low W, Tan S, Schwartz S. The effect of severe caries on the quality of life in young children. *Pediatr Dent* 1999;21:325-6.
4. National Oral Health Survey. Dental Council of India, New Delhi: 2002 -03.
5. Holm AK. Caries in pre-school children: international trends. *J Dent* 1990;29:1-5.
6. American Academy of Pediatric Dentistry: Policy on early childhood caries (ECC): classifications, consequences, and preventive strategies. *Pediatr Dent* 2008/2009; 30:40–3.
7. Berkowitz RJ. Mutans streptococci acquisition and transmission. *Pediatr Dent* 2006;28:106-9.
8. Hinds K, Gregory JR. National diet and nutrition survey: Children aged 1½ to 4 ½ years. Report of dental survey. London: HMSO; 1995: 2.
9. Friedman LA, Mackler IG, Hoggard GJ, French CI. A comparison of perceived and actual dental needs of a selected group of children in Texas. *Community Dent Oral Epidemiol* 1976;4:89-93.
10. Finlayson TL, Siefert K, Ismail AI, Sohn W. Maternal self-efficacy and 1-5 year old children's brushing habits. *Community Dent Oral Epidemiol* 2007;35:272-81.
11. Williams NJ, Whittle JG, Gatrell AC. The relationship between socio-demographic characteristics and dental health knowledge

and attitudes of parents with young children. *Br Dent J* 2002;193:651-4.

12. Szatko F, Wierzbicka M, Dybizbanska E, Struzyccka I, Iwanicka-Frankowska E. Oral health of Polish three-year-olds and mothers' oral health-related knowledge. *Community Dent Health* 2004;21:175-80.

13. Schroth RJ, Brothwell DJ, Moffatt M. Caregiver knowledge and attitudes of preschool oral health and early childhood caries (ECC). *Int J Circumpolar Health* 2007; 66:153-67.

14. Vann WF Jr, Lee JY, Baker D, Divaris. Oral health literacy among female caregivers: impact on the oral health outcome in early childhood. *J Dent Res* 2010;89:1395-400.

15. Lin HC, Wong MC, Wang ZJ, Lo EC. Oral health knowledge, attitude and practices of Chinese adults. *J Dent Res* 2001;80:1466-70.

16. Kumar RP, John J, Saravanan S, Arumugham IM. Oral health knowledge, attitudes and practices of patients and their attendants visiting College of Dental Surgery, Saveetha University, Chennai. *J Indian Assoc Public Health Dent* 2009;13:43-53.

17. Suresh BS, Ravishankar TL, Chaitra TR, Mohapatra AK, Gupta V. Mother's knowledge about pre-school child's oral. *J Indian Soc Pedod Prev Dent* 2010;28(4):282-7.

18. Greenwell AL, et al. longitudinal evaluation of caries patterns from the primary to the mixed dentition, *Paediatr Dent* 1990;12:278-82.

How to cite this article: Malhotra PU, Thakur S, Singhal P. Knowledge, Attitude & Practices of Caregiver in Relation to Oral Health of Preschool Children in Shimla City. *Arch of Dent and Med Res* 2016;2(2):1-10.