



# Assessment of Knowledge, Attitude and Practice (KAP) of Parents Towards Childhood Dental Caries Attending Pediatrics and Dental Clinic at ALERT Center, Addis Ababa, Ethiopia, January 2018



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## Objectives

**Introduction:** Early childhood caries (ECC) is defined as the presence of 1 or more decayed, missing or filled tooth surfaces in any primary tooth in a child 71 month or younger. It is the most common chronic disease in young children and may develop as soon as teeth erupt, and cavities may be visible as early as 10 months of age.

**Objective:** To assess the knowledge, attitude and practice of parents towards childhood Dental caries: who attends Pediatrics and Dental Clinic at ALERT center.

**Methods:** Institutional based cross-sectional descriptive study was conducted from August to November 2017. A total of 262 samples was collected a means of consecutive sampling technique. SPSS version 20.0 software was used for analysis. The relationship between parents' KAP and various risk factors was tested in using Chi-square, OR, AOR and P-value. Binary and multiple logistic regressions was tested to check the significant association between study variable. P-value less than 0.05 was considered as to be correlation or an association.

**Result:** The overall good knowledge, attitude and practice score of the parents was, 78.2%, 72.5% and 61.8% respectively. The attitude care giver showed as strong association to their child AOR 95%CI 5.16(1.48-17.96), (P = 0.01). The practice of parents showed statistically significant and has weak association (AOR<1, 95% CI) with age group (P <0.05).

**Conclusion:** The Oral health knowledge and attitude among the participants was relatively high but the role of parental practices on prevention method was low.

**Keywords:** Oral health; Childhood; Dental caries; Attitude; Knowledge; Parents and practice; KAP

**Abbreviations:** AAPD: American Academy of Pediatric Dentistry; ALERT: All African Leprosy TB Rehabilitation and Training; AOR: Adjusted Odds Ratio; COR: Crude Odds Ratio; CSA: Central Statistical Agency of Ethiopia; ECC: Early Childhood Caries; HMIS: Health Management Informatics System; KAP: Knowledge Attitude and Practice; OR: Odd Ratio; SES: Socio Economic Status; SNNP: South Nations of Nationality People; SPSS: Statistical Package for Social Science; TB: Tuberculosis; PZWMH: Prince Zenebework Memorial Hospital; USA: United States of America; WHO: World Health Organization

## Introduction

Oral health is of vital importance to general health in humans. Nevertheless, despite the marked improvement in oral health, caries occurs in the world in both developed and developing countries. It is still widespread among children, and it can be controlled but not eliminated [1]. Dental caries is 5 times more common than asthma [2,3] and its prevalence is high among children from families with income below poverty level [2] and making it the most prevalent childhood chronic disease in the United States [3].

Early childhood caries (ECC) is defined as the presence of 1 or more decayed, missing or filled tooth surfaces in any primary tooth in a child 71 month or younger [4-10]. Different terms are

used for ECC in the world which includes, nursing bottle mouth, baby bottle tooth decay, nursing bottle syndrome, bottle mouth caries, nursing caries, rampant caries and others. An enormous diversity of definition and diagnosis of ECC is used worldwide. However currently no universally accepted definition. The above definition was adopted by AAPD and subsequently by several other researchers [10]. It is the most common chronic disease in young children [2,10] and may develop as soon as teeth erupt, and cavities may be visible as early as 10 months of age [5,6,8,11]. ECC is a significant public health problem and certain segments of society [9-12].

White demineralized areas in the cervical regions of the maxillary anterior teeth may be the first symptom of dental caries

lesions in infants who could develop ECC. Other related health problems are also observed in infants with rampant dental caries [13]. It is classified as mild, moderate, and severe [8]. Others have classified ECC according to 3 specific presentations: isolated decay of primary incisors or molars, decay of primary incisors with or without molar decay, and decay exhibited throughout most of the primary dentition. Whether these 3 patterns are discrete or represent sequential stages of a single disease process remains obscure [4].

Many literatures stated several risk factors are associated with it, which can be broadly classified into biological and social risk factors. Biological risk factors include nutritional variables, feeding habits and early colonization of cariogenic microorganisms. Social risk factors comprise low parental education, low socio-economic status and lack of awareness about dental disease [4-8,10,11,13,14]. Enamel hypoplasia has already been identified as an additional risk factor in ECC development [4]. The World Health Organization (WHO) recommends that children should be breastfed up to 24 months of age [9]. The prolonged and unrestricted nocturnal breastfeeding /milk bottle feeding is reported to be an associated potential risk factor for the development of ECC [9,10,13]. Fruit juices and carbohydrate beverages have also been implicated in children diagnosed with ECC [10].

The classic etiology of ECC involved bacterial, dietary, and host determinants with interplay of multiple sociological and environmental factors over time. Streptococcus mutants and Streptococcus spp. are the most common identified causative agents of ECC, acid-producing pathogens caused damage by dissolving tooth structures in presence of fermentable carbohydrates such as sucrose, fructose, and glucose. Vertical transmission i.e. mother-to-child transmission of cariogenic bacteria and repeated supply of substrate (sucrose) leads to plaque development and early childhood caries [3,4,9,10,15].

Deciduous teeth and permanent teeth are directly related, and infection from deciduous teeth can directly pass on to permanent teeth. Deciduous teeth are also the "best natural space maintainer." Early childhood caries (ECC) affects the quality of life of families and their affected children due to dental pain, malocclusion and subsequent tooth loss resulting in difficulty in eating, speaking, sleeping, socializing stunted growth, and the increased possibility of caries in permanent dentition [2-8,10,11,13-15]. But is also responsible for several morbid conditions of the oral cavity, associated craniofacial structure and other bodily systems. [2,6]. a good oral health is a key to general well-being [15].

To maintain the permanent teeth uninfected, dental practitioner's advice pulp therapy or extraction [8] and placement of stainless steel crowns to rehabilitate decayed primary molars [4], frequently performed under general anesthesia due to the young ages of the patients and the complex nature of care required [4,5,8-11]. And many parents prefer to get deciduous teeth extracted due to financial and time constraints [8]. Placement

of fluoride-releasing glass ionomer cement is efficacious in both therapeutic and preventive approaches. If untreated can lead to serious disability, in extreme cases, death [3,10]. Hence the dental profession favors a preventive approach towards management [5,8,10,11]. These aggressive approaches include atraumatic restorative treatment (ART), fluoride application, oral hygiene instruction, dietary counseling, and restorative measures. To achieve these interventions, advanced behavioral managements is an important part of treatment plan, as even with these proactive measures, children with ECC are likely develop recurrent caries [10]. The earliest form of prevention can be achieved by educating parents and primary caregivers about ECC [5,8-11,13,16] and mothers are the role model for their children [15]. Also, anticipatory guidance is one of the approaches used at antenatal visits and for new mothers [3,5,10].

Oral health is an important component of overall health and good oral health should be maintained throughout a person's lifespan. A child is a precious gift which has lots of potential within, which can be the best resource for nation if raised and molded in good manner [6]. Early childhood caries has gained a lot of attention worldwide due to its infectious effect on the milk teeth [15]. Several studies showed that, dental caries is the most common chronic childhood disease is preventable and impacts are great children and adolescents. A lack of understanding of conditions linked with dental disease has often hindered the process of preventing the occurrence of various dental problems among children [17].

Dental investigators have explained that plaque plays a definite role in the initiation and progression of dental disease. A lack of awareness about the link between nutrition and dental disease has also caused a lot of dental health problems like scurvy and dental caries etc. Periodontal pockets have been observed among children from as early as 10 years of age and this has been attributed to general nutritional deficiency and poor oral hygiene [17].

Lack of oral hygiene practices has been identified as a possible predisposing factor for occurrence of dental caries. Children generally engage in unhealthy habits that can cause dental problems like failing to brush, nibbling of sweets and consumption of sugary snacks. All these can cause acid formation which eats away the tooth enamel. The general health of children who suffer dental disease is put further at risk and because of this risk to health; their dental care is of vital importance. It is therefore paramount to instill proper oral hygiene habit early in school children in order to prevent dental ills and promote healthy teeth growth [17].

Although several studies have evaluated the caregivers' oral health knowledge, few have reported the relationship between caregivers' oral health knowledge and ECC. Additionally, the attitude of the caregivers towards conservation of carious deciduous teeth appears to be negative [18]. Preschooler's oral health which is crucial for their growth and development are

correlated with their parental knowledge, attitude and practices, which directly affect their oral hygiene and eating patterns they follow throughout the day [15].

So, oral health knowledge, attitude and practice of the parents or caregiver are likely to have an important role in influencing the development of healthy dental habits in the child.

Dental caries is one of the global burden diseases and several studies have been carried out on children dental health status as well as child behavior and parental attitudes towards child oral health. This study attempts to review various studies conducted by different countries related to knowledge, attitude and practice of parents towards dental caries.

A study conducted in Malaysia showed that almost all respondents knew the types of food causing dental caries and the importance of brushing children's teeth. Fewer parents (81%) knew that children's mouth should be cleaned before teeth erupted. About 78% of the parents knew that weaning from the bottle should start at 1 year of age. Most parents (85%) knew that fluoride is important for preventing tooth decay and about half of them (52%) knew that they should start using toothpaste with fluoride for cleaning their child's teeth when the child learns to spit. Sixty four percent knew that it is necessary to do fillings in their baby's teeth [5].

The results of attitude respondents were about 22% and 43% of the parents thought that children should visit the dentist at 1 year and 3 years respectively, while 25% thought that it is enough to visit the dentist when there is a problem such as pain. Almost all parents also agreed that a balanced diet is important for healthy teeth. Most parents (73%) thought that tooth decay is not caused by bacteria that are transmitted by sharing feeding utensils and 49% of them thought that nighttime bottle/breast feeding cannot cause tooth decay. More than half of them (64%) thought that frequent and prolonged breast/bottle feeding in the daytime cannot cause tooth decay. Fifty two percent thought that effective cleaning of teeth can be achieved by the child him/herself. Many (46%) were not aware that swallowing of toothpaste can be harmful to a child's health. Seventy percent of parents agreed that pacifier use can affect the normal development of children's teeth. The practice of early childhood oral health related behaviors among parents [5].

The practice of early childhood oral health related behaviors among parents. Fourteen percent of parents never examined their children's mouth. A considerable number of parents (67.6%) practiced biting food into small pieces before giving the child. There were only 11.8% of the parents who never bought sweetened food for their baby. About half of the parents (45%) gave sweetened liquid or juice in the bottle to their children. About 47% of the parents always practiced giving plain water after feeding the child. Semisolid food was started at one year of age in 38% of the children. Sixty percent of parents regularly brushed their children's teeth and 11% used full brush length amount of toothpaste to brush their child's teeth [5].

According to the study performed on Belagavi city in India, on knowledge, attitude and practice (KAP) of oral health care among parents in prevention of ECC was showed that, nearly 69.5% of parents were aware that caries can affect infants below 2 years and 81.5% of parents knew that sweet food causes tooth decay but knowledge regarding when to begin using fluoridated toothpaste and whether deciduous teeth need treatment appeared to be low, i.e. 54% and 42.5%, respectively. However, 88% parents knew the importance of brushing teeth and 73.5% parents were aware of starting top up foods along with breast/bottle feedings from 6 months of age. The overall mean attitude score was 53.5%. Only 40.5% parents were aware that dental caries can be transmitted by sharing feeding utensils, i.e., mainly through saliva; on the contrary, majority, i.e., 45.5% parents believed it cannot be transmitted from parents to children. And the practices were categorized into "good" practices and "bad" practices. The overall mean good practice and bad practice score were 33.5% and 18.5%, respectively (8). Another study conducted in Ghaziabad city in India, was found from the present study that overall prevalence of ECC in population was 28%. The parent-caregiver of study sample, KAP assessment. The sample distribution has been shown in, there was a positive correlation of knowledge score with practice score. There was a negative correlation of attitude score with practice score [15].

Similarly, a study was done in Udaipur city in India identified that, parents in the age group of 25-29 years showed significantly higher mean knowledge ( $25.90 \pm 3.93$ ) ( $P = 0.042$ ), attitude ( $15.71 \pm 2.63$ ) ( $P = 0.032$ ), and practice ( $20.09 \pm 3.15$ ) ( $P = 0.013$ ) scores than the other age groups. Furthermore, mothers showed a statistically significant higher mean knowledge ( $21.45 \pm 4.27$ ) and attitude scores ( $14.97 \pm 2.15$ ) than the fathers ( $20.85 \pm 2.99$  and  $14.36 \pm 2.10$  respectively). The mean practices score between fathers ( $19.13 \pm 2.97$ ) and mothers ( $18.80 \pm 2.69$ ) was not statistically significant. Parents of higher socio-economic status showed statistically significant higher mean knowledge ( $21.52 \pm 4.16$ ), attitude ( $15.01 \pm 2.34$ ), and practices scores ( $19.30 \pm 2.90$ ) than those of middle socio-economic status ( $21.03 \pm 3.37$ ,  $14.44 \pm 2.29$ ,  $19.24 \pm 2.84$  respectively) and lower socio-economic status groups ( $19.38 \pm 2.48$ ,  $14.17 \pm 1.61$ ,  $18.68 \pm 1.94$  respectively) [19].

A study conducted in Kenya, on KAP for caregivers and identified that oral health related knowledge on the causes of caries was generally good amongst the caregivers. Majority of the caregivers 220 (96.1%) reported that consumption of sugary foods causes tooth decay. Similarly, 205 (89.5%) reported that lack of brushing causes caries. Almost three-quarters of the caregivers 163 (71.2%) reported that eating sugary snacks between meals caused caries. However, knowledge on the effect of the type of infant feeding practices on caries development was low. About a quarter of the caregivers 57 (24.9%) reported bottle feeding at night caused caries. Only 26 (11.4%) of the caregivers reported that breastfeeding on demand caused caries. Caregiver's knowledge on prevention of caries was also high. Brushing teeth daily was reported to prevent caries by 216 (94.3%) of the caregivers [18].



Additionally, majority of the caregivers 201 (87.8%) also reported that brushing with toothpaste prevented caries. Similarly, most of the caregivers 212 (92.6%) reported that caries could be prevented by limiting the amount of sugary foods consumed. Additionally, three-quarters 67 (72.9%) of the caregivers reported that reducing snacks consumed in between meals could prevent caries. However, the role of infant feeding practices on caries prevention was low. Breastfeeding at specific times was reported to prevent caries by 51 (22.3%) of the caregivers. Additionally, giving child a bottle of water at night was reported to prevent caries by only 74 (32.3%) of the caregiver [18]. Attitude of Caregiver, majority of the caregivers 194 (84.7%) reported that deciduous teeth were important. However, slightly over half of the caregivers 130 (56.8%) reported that they preferred extraction of a carious deciduous tooth while 72 (31.4%) preferred the tooth cleaned and filled. A few of the caregivers, 11 (4.1%) preferred the tooth left alone. On dental health seeking behavior, majority of the caregivers 202 (88.2%) reported that children should visit a dentist every 6 month for dental checkup. Slightly more than a quarter of the caregivers 65 (28.4%) reported that caries is passed from the deciduous to the permanent teeth while 25 (10.9%) reported that decay could be inherited from mother [18].

Infant Feeding Practices, majority of the caregivers 223 (97.8%) reported breastfeeding between 1-48 months with a mean duration of 19+7.7 SD months. Slightly less than a half of the caregivers 101 (44.5%) reported that the child had been bottle-fed and the mean duration was 5+8.6 SD months. Oral Hygiene Practices of the child, almost all the caregivers reported that their children brushed teeth 219 (95.6%). Of the children who brushed, 68 (31.2%) brushed more than once a day, 137 (63.3%) brushed once daily while 13 (5.6%) brushed less than once a day. Majority of the caregivers reported that their children used a toothbrush 209 (95.4%) while 7 (3.2%) used a 'miswak'. Almost all the caregivers reported that their children used toothpaste to brush 209 (95.4%). Slightly less than a half of the caregivers reported assisting their child to brush 105 (47.9%) while 80 (36.5%) reported that the children brushed their own teeth unassisted. A few of the caregivers brushed their child's teeth 34 (15.5%). Almost all the caregivers reported brushing their own teeth 220 (96.1%). Only 3 (1.3%) of the caregivers reported not brushing their own teeth [18].

A study conducted in South Africa on KAP of parents showed that, more than three-quarters of the participants (76.6%) identified diet as being the primary cause of rotten teeth, whilst only less than 8% identified poor oral hygiene program. Many participants (81.6%) agreed that rotten teeth could be controlled, whilst 6% bore no knowledge as to the causes of dental caries. Many participants reported that diet (42%) and tooth brushing (36.3%) were the prime variables involved in the caries control. Attitudes of dental caries shows that more than half of the participants (56.1%) indicated that, milk teeth were important and those rotten teeth (74.6%) could affect the child's health

whilst 51.1% of the participants indicated that their child's first dental visit should occur by the age of one year [20].

Parent perceptions towards dental caries, nearly three-quarters of the participants (73.6%) reported that unhealthy milk teeth can lead to problems when permanent teeth develop. Almost half (49.8%) of participants reported that "bad teeth" were inherited. Children missing school because of caries was reported by 41.4% of the participants and 25% of adults missed work because their children were suffering from tooth decay. majority of the parents (50.9%) reported that their child will be teased or called names if he/she had rotten teeth. Most participants (70.7%) indicated that their children brushed their teeth twice a day. This is in keeping with recommended guidelines. Whilst most parents (67.1%) and children indicated (68.1%) that they used toothbrushes and toothpaste only 20.3% of parents and 35.5% of children flossed. Spearman's did not reveal any significant correlation between the use of the various oral hygiene tools and poor oral hygiene and rotten teeth. An interesting result is that whilst 29.2% of parents reported using a mouthwash whilst only 12.9% of children have been reported using mouthwashes [20].

A study was undertaken in Nepal country, in South Asia; it was found that majority (81%) have moderate knowledge about oral hygiene followed by poor knowledge (15%) and good knowledge (4%). According to the study it was found that 85% of parents have moderate or more than moderate knowledge but not on excellent level and 15% of parents have poor knowledge regarding oral hygiene. Median knowledge score regarding knowledge about oral hygiene was found to be 15 with range 10 to 21 whereas total knowledge score was 30. Following variables were found to be significant difference on knowledge category: Literacy ( $P < 0.001$ ), education level ( $P < 0.05$ ) and experience about oral health problem ( $P = 0.008$ ). Further significant association was found between knowledge category and educational status ( $p < 0.001$ ) and between knowledge category and experience ( $p < 0.001$ ) [21].

Another study conducted in Florida, USA, stated in such a way, a total of 37 participants in the intervention group chose to complete the open-ended questions that focused on their experiences while participating in the enhanced oral health promotion visits. These responses were analyzed using a content analysis approach. Main categories were identified as valuable information learned about oral health care, oral health skills learned for better oral health for their children and value of oral health incentives for the participants and their children. Specifically, the participants identified important aspects of the intervention including oral health techniques (brushing) they were taught, importance of proper oral health care for their children at an early age and incentives (toothbrushes and cup) they received while participating in the enhanced oral health promotion visits [22].

A comprehensive review of literature showed that the prevalence of ECC varies across the world, with it being between

1-12% in developed countries and up to 70% in developing countries. The highest prevalence of caries found in Africa and South East Asia the reports from developed countries showed that prevalence of caries is found high among preschooler and severity of the disease is reported more in certain ethnic and immigrant groups, which is a serious concern. The prevalence of ECC is continuously increasing in low socioeconomic groups due to lack of early preventive measures and availability of adequate treatment facilities (9). In Israel, 57% immigrants had a “bad” health status of their teeth, 56% had gum problems, and 60% suffered from tooth ache. The dental caries gets increased with increasing age [12].

The World Health Organization (WHO) recognizes dental caries as a pandemic disease and reports that its prevalence among school aged children ranges from 60% to 90%. The prevalence of dental caries in Africa was reported to be 24.1% in Nigeria, 43.3% in Kenya, and 30.5% in Sudan with a mean DMFT of 0.45, 3.4 and 0.42 respectively. And study done in Northwest Ethiopia showed that the overall prevalence of dental caries was 47.1% [12]. In Ethiopia, prevention and treatment of oral diseases receive little attention. Even though oral diseases are affecting majority of the Ethiopian children, much is not known about the extents and factors influencing the occurrence of dental caries and oral care practices and health care seeking behavior in most parts of the country [12]. Also, the prevalence of dental caries in Ethiopia, Finoteselam primary school was found to be 48.5% [23].

Although, the trend is not clear in developing countries, the burden of dental caries has been increasing among children due to the unlimited consumption of sugary substances, poor oral care practices and inadequate health service utilization. Studies revealed that the prevalence of dental caries was higher among urban children. Similarly, a study conducted in Ethiopia was reported 36.5% prevalence of dental caries among urban children in school. However, the proportion of children having dental caries in primary schoolchildren in Bahir Dar city was 32 (21.8%) [20].

In Ethiopia, few studies indicated the prevalence of dental caries in children is high and which is significantly associated with parent’s education level [24]. Since Ethiopia is one of the developing countries and a country of nation and nationality but the research carried out for prevalence of childhood caries indicates too insufficient. Even though, no documented data available on KAP of parents towards childhood dental caries in Ethiopia. But some research indicates that families play an important role in children’s oral health. Parents help define oral health practices early in their child’s life and determine when to establish regular dental care. Parents are decision makers in matters of children health and healthcare, thus they play an important role in achieving the best oral health outcomes for their young children [20].

Therefore, the aim of this study was to assess the existing knowledge, attitude and practice of parents towards childhood caries: attending in pediatrics and dental clinic at ALERT center, Addis Ababa, Ethiopia.

## Materials and Methods

### Study area

The study was conducted from August 2017 to January 2018 at ALERT center, Addis Ababa, Ethiopia. Addis Ababa is the capital city of Ethiopia, with a population of 2,738,248 according to the 2007 population census conducted by the Central Statistical Agency of Ethiopia (CSA) with annual growth rate of 2.1 % [25]. ALERT Center was established in 1934 by Sudan Interior Mission as a Leprosarium and named after the daughter of His excellence Emperor Majesty Haile Selassie I as Prince Zenebework Memorial Hospital (PZWMH). It is one of the specialized tertiary referral hospitals in the country, located in Addis Ababa at 7kms South West on the way to Jimma [26].

### Study design and period

Institutional based cross-sectional descriptive study was conducted to assess the knowledge, attitude and practice (KAP) of parents towards childhood dental caries attending Pediatrics and Dental Clinic of ALERT center, Addis Ababa, Ethiopia, from August 2017 to January, 2018.

### Population

**Source population:** All parents attending at ALERT Center from August 2017 to January 2018, Addis Ababa, Ethiopia.

**Study population:** The Study was carried among parents of children who visit at the period of data collection. According to HMIS data, average number of parents with their children’s attending in dental and pediatrics clinic per day was 15 and 25 respectively.

### Study participants’ eligibility criteria

**Inclusion criteria:** All consenting parents or primary caregiver attending pediatric and dental clinics of ALERT center, Addis Ababa, Ethiopia was included in this study.

**Exclusion criteria:** Those parents younger than 18 years of age were not included in this study.

### Sample size determination

The sample size is calculated using the prevalence of previous study (p=21.8%) (20) and using simple population formula, 95% CI, d = (marginal error) = 0.05.

$$N = \frac{Z^2 P(1 - P)}{d^2}$$

Where N=sample size

Z=Z-value

P= prevalence value

C1=confidence level (95%)

Z- value=1.96 (95% C.I)

N=1.9602\*0.218(1-0.218)/0.052

=262

The 10 % contingency for the non-respondent will be added.

=262+10% Contingency

=262+26

=288 is the total sample size

### Sampling technique

ALERT Centre is selected by convenient method as study site. A total of 288 samples was collected during the study period by consecutive sampling technique. The study units were selected using inclusion and exclusion criteria.

### Study variables

#### Dependent variables

- Assessment of Knowledge
- Assessment of Attitude
- Assessment of Practice

#### Independent variables

- Age (parent and child), Gender (parent and child), marital status, educational status, income (economic status)

#### Data collection procedures

The questionnaires were prepared in English and were translated to Amharic. The study participants were informed about the study by trained data collector and principal investigator. After obtaining written informed consent, data was collected using a structured questionnaire designed to obtain socio-demographic data and other relevant information such as age of both the parent and the child, occupation of the parent and gender of both the parent and the child. The questionnaire was administered by the attending trained data collector and principal investigator. Those parents above 18 years old were interviewed.

#### Data quality management

Training on data collection procedures was given. Pre-testing of the questionnaire was done to assure the quality of data and for improvement of data collection tool. Supervision during data collection was done to understand how the data collectors handle the questionnaire and each filled questionnaire was checked for its completeness, accuracy, clarity, consistency on daily basis. Corrective measure was taken accordingly for any gap, then special care was given during data entry, and data cleaning.

#### Operational definition

- Knowledge: -Information acquired about dental health care.

Good Knowledge: -The study participants had the knowledge score more than 60 %.

Poor Knowledge: -The study participants had the knowledge score less than 60 %.

- Attitude: -The behavior of the parents about dental health care.

Positive Attitude: -The perceptions of the parents had more than 60 % score.

Negative Attitude: -The perceptions of the parents had less than 60 % score

- Practice: -The way and manner the parent to observe their children oral hygiene.

Good Practice: - The practice score of the study participants more than 60 %.

Poor Practice: - The practice score of the study participants more than 60 %.

- Childhood: -Children between infancy to 12 years.

Dental caries: It is also known as tooth decay, is a chronic, infectious, transmissible oral disease that affects a significant number of people worldwide and can lead to oral pain and tooth loss.

Early childhood caries (ECC): It is defined as the presence of 1 or more decayed, missing or filled tooth surfaces in any primary tooth in a child 71 month or younger.

#### Data analysis

Data were coded, entered, cleaned and analyzed by using SPSS version 20 software. Frequency count and percentage was used to clean and check the accuracy of data entry and to analyze the data. Similarly, frequency distribution, percentage, tables was used to present results.

The relationship between assessment of parents' KAP and various risk factors were tested for their correlation and association issue using Pearson's chi-squared test, p-value, OR, 95%CI, and binary logistic regression model. P-value less than 0.05 were considered as association or correlation. Multiple logistic regressions were tested to see the independent effect and statistical relation between the dependent and independent variables this may help to avoid the confounding effect of different variables.

#### Ethical clearance

The proposal was approved and ethically cleared by Ethical Review committee of Atlas College of health science. Official permission was obtained from study site. Each study participants were notified about the purpose of the study, their right to refuse to participate in the study, and anonymity and confidentiality of the information gathered. Written informed consent was obtained from each study participants.

## Result

### Socio-demographic characteristics of study participants

A total of 262 parents were enrolled in this study. The age of the study participants ranged from 18 years to 75 years with a mean of 34.74(± 7.79) years. Most of the participants were between the ages of 25-34 years (43.9 %). Most of study participant were married (67.6 %) and governmental employed

(34.4 %). Based on educational status, most of the participants were primary school completed (43.5 %). According to ethnicity, most of the participants were from Amhara (43.9 %) and Oromo (34 %) (Table 1).

**Table 1:** Socio demographic characteristics of study participants (N=262).

Variables		Frequency	Percentage
Sex	Female	193	73.70%
	Male	69	26.30%
Age group	< 25	14	5.30%
	25-34	115	43.90%
	35-44	104	39.70%
	>44	29	11.10%
Marital	Single	49	18.70%
	Married	177	67.60%
	Divorced	22	8.40%
	Widowed	14	5.30%
Occupation	Unemployed	38	14.50%
	Governmental employed	90	34.40%
	Private employed	69	26.30%
	Self employed	57	21.80%
	Others ( Farmers, prisoners)	8	3.10%
Educational status	Illiterate	46	17.60%
	Primary	114	43.50%
	Secondary	48	18.30%
	College and above	54	20.60%
Relationship to the child	Mother	182	69.50%
	Father	59	22.50%
	Caregiver	15	5.70%
	Others( sister, aunt ,grandmother)	6	2.30%
No. of child in family	One	83	31.70%
	Two	111	42.40%
	Three	34	13.00%
	>3	26	9.90%
	None	8	3.10%
Ethnicity	Amhara	115	43.90%
	Oromo	89	34%
	Tigray	18	6.90%
	SNNP	38	14.50%
	Harrari	2	0.8

SNNP=South Nation Nationality people.

**Assessments of knowledge, attitude and practice (KAP)**

**Assessment of knowledge of parents towards childhood caries to their child:** The overall knowledge of the parents was generally good with score of 78.2 %. Most of the study participants (92.4 %) reported that consumption of sugary foods can cause tooth decay, while; 92 %, 85.9 %, 85.4 % of the participants responded that lack of teeth brushing, bacteria and lack of mouth rinsing after meal were the cause of tooth decay respectively.52.7 % of the respondents reported that prolonged breastfeeding on

demand, prolonged bottle feeding at night, and adding sugar to bottle feeding can be the cause of tooth decay. In this study, 46.9 % of the study participants showed poor knowledge on the causes of tooth decay using the same utensils during feeding with parent or another child.

Most of the study participants (95.8 %) reported that dental caries can be prevented or controlled. Most of the participants (87%) reported that tooth decayed can be prevented by brushing with toothpaste and limiting the amount of sugary foods. 83.2 %



and 66.4 % of the participants reported that tooth decayed can be prevented by brushing teeth daily and reducing of snacks between meals respectively. In the present study, only 33.2 %of

the participants reported that tooth decay can be prevented by breast feeding at specific times (Table 2).

**Table 2:** Assessment of knowledge of parents towards childhood caries to their child (N=262).

Knowledge Items	Yes		No	
	Frequency	Percentage	Frequency	Percentage
Causes of Dental Caries				
Knowledge of tooth decay	249	95%	13	5%
Eating too much sugary foods are causes of tooth decay	242	92.40%	20	7.60%
Tooth decay caused by lack of brushing	241	92%	21	8%
Prolonged breastfeeding on demand	138	52.70%	124	47.30%
prolonged bottle feeding at night	146	55.70%	116	44.30%
Add sugar to bottle feeding	138	52.70%	124	47.30%
Frequent snacking between meals	143	54.60%	119	45.40%
Use of the same utensil during feeding with you or another child	123	46.90%	139	53.10%
Lack of mouth rinsing after meal	229	87.40%	33	12.60%
Tooth decay is caused by Bacteria	225	85.90%	37	14.10%
Preventions of Dental Caries				
Decayed tooth can be prevented or controlled	251	95.80%	11	4.20%
Prevented by brushing teeth daily	218	83.20%	44	16.80%
Limiting the amount of sugary foods	228	87%	34	13%
Brushing with toothpaste	230	87.80%	32	12.20%
Reducing snacks eaten in between meals	174	66.40%	88	33.60%
Breast feeding at specific times	87	33.20%	175	66.80%
Overall knowledge scores	Good	Poor		
	Frequency	Percentage	Frequency	Percentage
	205	78.2	57	21.8

**Assessment of Attitude of parents towards childhood caries to their child**

Generally, the study participants had positive attitude which means 72.5 % scores. 76.7 % and 73.3 % of the study participants responded that decayed milk teeth can affect the permanent teeth and the general health of the children respectively. 61.8 % of the

study participants believed that milk teeth were not important and nearly half of the participants (47.7 %) also responded that tooth decay is passed from mothers to child. More than three quarters of the participants (76.7%) indicated that the children should visit the dentist regularly every six months. Most of the participants (59.5 %) indicated that clean and fill the tooth was the treatment option for decayed tooth (Table 3).

**Table 3:** Assessment of Attitude of parents towards childhood caries to their child (N=262).

Variables	Attitude of Parents	
	Yes	No
Decayed milk teeth can affect the permanent teeth	201 (76.7)	61 (23.3)
Decayed milk teeth can affect the general health of the child	193 (73.3)	69 (26.3)
Milk teeth do not need to be looked after because they fall off any way	162 (61.8)	100 (38.2)
Tooth decay is passed on from mother to child	125(47.7)	137(52.3)
Children should visit a dentist regularly every six months	201(76.7)	61(23.3)



Treatment option for decayed tooth	Remove the tooth	95 (36.3)
	Leave the tooth alone	11 (4.2)
	Clean and fill the tooth	156 (59.5)
Overall attitude scores	Good	190 (72.5)
	Poor	72 (27.5)

**Assessment of practice of parents against childhood caries to their child:** In this study, the overall practice scores of the parents to their children had 61.8%. Even though, the percentage of good practice among the children surpassed the poor practice, it was not an abnegate result. According to the study participants, 61.8 % of children were brushed their teeth. 31.7 % of the child

brush by their own and between the ages of 5-9 years. Based on the frequency of daily brushing, 27.5 % and 26 % of child brush their own teeth twice and once per day respectively. Most of the parents (44.7 %) used toothbrush as cleaning material and 57.6% use tooth paste for their child. Almost all the study participants (95%) brushing their teeth (Table 4).

**Table 4:** Assessment of practice of parents towards childhood caries to their child (N=262).

Variables	Practice of Parents	Frequency (Percentage %)
child brush his/her teeth	Yes	162(61.8)
	No	100(38.2)
Who brush child's teeth	Child	83(31.7)
	Parents	27(10.3)
	Child with assistance	52(19.8)
	Non-brushed	100 (38.2)
Commencement of brushing	0-4 years	68(26)
	5-9 years	83(31.7)
	10-12years	7(2.7)
	Not starting	104 (39.7)
child's teeth cleaning per day	Sometimes	2(0.8)
	Once	68(26.0)
	Twice	72(27.5)
	More than twice	19(7.3)
cleaning material for child's teeth	Tooth brush	117(44.7)
	Miswak	13(5)
	Both (tooth brush and miswak)	30(11.5)
	Others	2(0.8)
use of toothpaste	Yes	151(57.6)
	No	111(42.4)
parents brush their teeth	Yes	249(95)
	No	13(5)
Overall practice scores	Good	162 (61.8)
	Poor	100(38.2)

**Association of knowledge, attitude and practice (kap) of parents with different variables**

**Association of Knowledge of parents with different variables:**

The association of different variables with knowledge of parents is summarized in Table 5. In univariate analysis, the knowledge of parents did not show statistically significant association with age group, educational level, economic status and relation of parents to their child (P > 0.05). The knowledge of parents of different age

groups were:<25 years, 71 %; 25-34 years, 78.3 %; 35-44 years, 78.8 % and >44 years, 79.3% which increases as the age increases (Table 5).

A multivariate analysis was carried out to detect confounding effects. In multivariable logistic regression analysis, the knowledge of parents also did not show statistically significant association with age group, educational level, economic status and relation of parents to their child (P >0.05) (Table 5).

**Table 5:** Association of Knowledge of parents with different Variables (N=262).

Variables		Total	Knowledge		COR (95 % CI)	p-value <sup>a</sup>	AOR (95 % CI)	p-value <sup>b</sup>
			Good	Poor				
			F (%)	F (%)				
Age group	<25	14	10 (71.49)	4 (28.6)	1		1	
	25-34	115	90 (78.3)	25 (21.7)	0.69(0.20-2.4)	0.565	0.69 (0.20,2.4)	0.57
	35-44	104	82 (78.8)	22 (21.2)	0.67(0.192-2.34)	0.53	0.67 (0.19,2.34)	0.53
	>44	29	23 (79.3)	6 (20.7)	0.65 (0.15-2.82)	0.568	0.65 (0.15,2.83)	0.57
Economic status	1	69	49(71.0)	20(29)	1		1	
	2	92	77(83.7)	15(16.3)	0.48(0.22-1.02)	0.056	0.46 (0.21,1.02)	0.06
	3	44	34(77.3)	10(22.7)	0.72(0.30-1.73)	0.464	0.54 (0.19,1.51)	0.24
	4	10	6(60)	4(40)	1.63 (0.41-6.41)	0.482	1.25 (0.26,6.03)	0.77
	5	3	3(100)	0(0)	-	-	-	
Educational level	Illiterate	46	42 (91.3)	4 (8.7)	0.3 (0.09-0.99)	0.05	0.36 (0.08,1.56)	0.17
	Primary	114	90 (78.9)	24(21.1)	0.841(0.39-1.81)	0-659	1.0 (0.37,2.79)	0.99
	Secondary	48	32 (66.7)	16(33.3)	1.57 (0.66-3.74)	0.302	2.0 (0.75,5.59)	0.16
	College & above	54	41 (75.9)	13 (24.1)	1		1	
R/ship of child	Mother	182	147(80.8)	35(19.2)	1		1	
	Father	59	41(69.5)	18(30.5)	1.84 (0.94-3.58)	0.07	1.84 (0.95-3.5)	0.07
	Caregiver	15	11(73.3)	4(26.7)	1.53 (0.46-5.08)	0.49	1.53 (0.46-5.08)	0.49
	Others	6	6(100)	0(0)	-	-	-	

F frequency; % Percentage; COR: Crude odds ratio; AOR: Adjusted odds ratio; a p-value of COR: bp-value of AOR; 1monthly income <1000; 2monthly income 1001-2500; 3monthly income 2501-5000; 4monthly income 5001-10000; 5 monthly income >10000.

**Association of attitude of parents with different variables:**

The association of different variables with attitude of parents is summarized in Table 6. In univariate analysis, attitude of parents showed statistically significant association with educational level and relation of parents to child (P <0.05). However, the attitude of parents did not show statistically significant association with age

group and economic status (Table 6).

A multivariate analysis was carried out to detect confounding effects. In multivariable logistic regression analysis, the attitude of parents also showed statistically significant association with educational level and relation of parents to their child (P <0.05) (Table 6).

**Table 6:** Association of Attitude of parents with different variables (N=262).

Variables		Total	Attitude		COR (95% CI)	P-value <sup>a</sup>	AOR (95% CI)	P-value <sup>b</sup>
			Good	Poor				
			F (%)	F(%)				
Age group	<25	14	9 (64.3)	5 (35.7)	1		1	
	25-34	115	86 (74.8)	29 (25.2)	0.60 (0.18-1.95)	0.4	0.77 (0.16,3.67)	0.74
	35-44	104	72 (69.2)	32 (30.8)	0.8 (0.24-2.57)	0.709	0.84 (0.18,3.99)	0.82
	>44	29	23 (79.3)	6 (20.7)	0.47 (0.11-1.93)	0.29	0.41(0.07,2.41)	0.33

Economic status	<1000	69	49 (71)	20 (29)	1		1	
	1001-2500	92	74 (80.4)	18 (19.6)	0.59 (0.28-1.23)	0.166	0.49 (0.21,1.13)	0.09
	2501-5000	44	29 (65.9)	15 (34.1)	1.27 (0.56-2.85)	0.57	0.76 (0.27,2.09)	0.59
	5001-10000	10	5 (50)	5 (50)	2.45 (0.63-9.39)	0.19	1.12 (0.22,5.79)	0.89
	>10000	3	2 (66.7)	1 (33.3)	1.23 (0.10-14.28)	0.87	0.41 (0.03-5.72)	0.51
Educational level	Illiterate	46	44 (95.7)	2 (4.3)	0.08 (0.017-0.35)	0.001*	0.59 (0.01,0.51)	0.01*
	Primary	114	89 (78.1)	25 (21.9)	0.47 (0.24-0.97)	0.041*	0.45 (0.18,1.16)	0.09
	Secondary	48	23 (47.9)	25 (52.1)	1.84 (0.83-4.07)	0.12	2.37 (0.94,5.99)	0.07
	College & above	54	34 (63)	20 (37)	1		1	
R/ship of child	Mother	182	138(75.8)	44(24.2)	1		1	
	Father	59	40(67.8)	19(32.2)	1.49(0.78-2.83)	0.22	1.44(0.63,3.28)	0.38
	Caregiver	15	7(46.7)	8(53.3)	3.58 (1.23-10.4)	0.019*	5.16(1.48,17.96)	0.01*
	Others	6	6(100)	0(0)	-	-	-	-

F frequency; % Percentage; COR: Crude odds ratio; AOR: Adjusted odds ratio; a p-value of COR: bp-value of AOR; 1 monthly income <1000; 2 monthly income 1001-2500; 3 monthly income 2501-5000; 4 monthly income 5001-10000; 5 monthly income >10000; \* significant at p<0.05

**Association of Practice of parents with different variables:**

In univariate analysis and multivariate analysis, the practice of parents showed statistically significant association with age

group (P <0.05). However, it did not show statistically significant association with economic status, educational level and relation of parents to their child (P > 0.05) (Table 7).

**Table 7:** Association of Practice of parents with different variables (N=262)

Variables	Total	Practice		COR (95% CI)	P-valuea	AOR (95% CI)	P-valueb	
		Good	Poor					
		F (%)	F(%)					
Age group	<25	14	3 (21.4)	11 (78.6)	1		1	
	25-34	115	71 (61.7)	44 (38.3)	0.17(0.045-0.64)	0.009*	0.13 (0.03-0.71)	0.018*
	35-44	104	66 (63.5)	38 (36.5)	0.16(0.041-0.59)	0.007*	0.12 (0.02,0.65)	0.014*
	>44	29	22 (75.9)	7 (24.1)	0.09(0.019-0.4)	0.002*	0.08 (0.01,0.51)	0.008*
Economic status	1	69	39 (56.5)	30 (43.5)	1		1	
	2	92	57 (62)	35 (38)	0.79 (0.42-1.50)	0.49	0.88 (0.44,1.73)	0.7
	3	44	30 (68.2)	14 (31.8)	0.60 (0.27-1.34)	0.217	0.67 (0.27,1.69)	0.4
	4	10	8 (80)	2(20)	0.32 (0.064-1.64)	0.17	0.26 (0.04,1.53)	0.14
	5	3	3 (100)	0 (0)	-	-	-	-
Educational level	Illiterate	46	25 (54.3)	21(45.7)	1.83(0.80-4.13)	0.147	1.16 (0.41,3.22)	0.77
	Primary	114	76 (66.7)	38 (33.3)	1.09 (0.54-2.17)	0.811	0.64 (0.27,1.59)	0.3
	Secondary	48	24 (50)	24 (50)	2.17 (0.97- 4.87)	0.059	1.54 (0.62,3.83)	0.35
	College & above	54	37 (68.5)	17 (31.5)	1		1	
R/ship of child	Mother	182	104 (57.1)	78 (42.9)	1		1	
	Father	59	40 (67.8)	19 (32.2)	0.63 (0.34-1.17)	0.149	0.89(0.42,1.89)	0.77
	Caregiver	15	12 (80)	3 (20)	0.33 (0.091-1.22)	0.097	0.47(1.11,1.94)	0.29
	Others	6	6 (100)	0 (0)	-	-	-	-

F frequency; % Percentage; COR: Crude odds ratio; AOR: Adjusted odds ratio; a p-value of COR: bp-value of AOR; 1 monthly income <1000; 2 monthly income 1001-2500; 3 monthly income 2501-5000; 4 monthly income 5001-10000; 5 monthly income >10000; \* significant at p<0.05.

**Association of knowledge of parents with attitude and practice:** In univariate analysis, the knowledge of parents showed

statistically significant association with attitude and practice (P <0.05) (Table 8).

**Table 8:** Association of knowledge of parents with attitude and practice (N=262).

Variable	Attitude		P-value	COR (95% CI)	Practice		P-value	COR (95% CI)
	Good F(%)	Poor F(%)			Good	Poor F(%)		
					F (%)			
Knowledge			0	0.23(0.13, 0.43)			0.027	0.51(0.28,0.93)
Good	163(79.5)	42(20.5)			134(65.4)	71(34.6)		
Poor	27(47.4)	30(52.6)			28(49.1)	29(50.9)		

F frequency; % Percentage; COR: Crude odds ratio.

### Discussion

In this study, majority of the parents had good knowledge regarding eating too much sugary foods as the causes of dental caries (92.4%). This study results similar with the studies conducted in Malaysia (99%) and Kenya (96.4%) [5,18]. Relatively lower results were recorded from studies in India (81.5%), South Africa, (76.6%) and South Asia in Nepal (65 %) [8,21,23]. Moreover, parents’ knowledge on lack of brushing teeth as a cause of tooth decay was similar between this study (92%) and a Kenyan study (89.5%).

The present study also revealed 54.6 % of frequent snacking between meals as causes of dental caries but this was higher compared to Kenya (71.2 %) [18]. In this study, the participants had poor knowledge about snacks this could be due to lack of awareness and gap of knowledge on frequency and type of carbohydrate intake, which is the one that initiate dental caries. Current study showed that feeding habits of the child as the causes of tooth decay by prolonged bottle feeding at night (55.7 %) and prolonged breastfeeding on demand (52.7 %) but had higher recorded than in Kenya 24.9 % and 11.4% respectively [18].

Additionally, this study indicated dental caries caused by sharing feeding utensils was (46.9 %) which is almost similar the study undertaken in India (30.9 %) [22]. Generally, belonging to the result of this study they had poor knowledge on feeding habits, this may be lack of health education about the contribution of feeding practice for dental caries. But it could be possible to build their feeding practice if it is done on Antenatal Cares, Family Planning and Pediatrics department because it is the primary site to contact the parents with their child rather than dental clinics. Since, dental caries one of public importance disease and this study suggested that dental surgeons could have to meet with gynecologist and pediatricians to share their experiences and will create better understanding to the parents on the overall causes and prevention of dental caries. Especially mothers would get a chance of feeding education they will apply on their children to prevent dental caries and its further consequences and they reduce time spent and money for dental treatment.

According to the prevention and controlled of dental caries 95.8% of participants agreed and showed that as it prevented by brushing with toothpaste (87.8%) brushing teeth daily (83.2 %), limiting the amount of sugary foods (87 %), reducing snacks eaten

in between meals (66.4 %) and breast feeding at specific times (33.2 %). This finding is similar with the study conducted in Kenya 87.8% 94.3 %, 72.6 %, 72.9% and 22.3% respectively. Tooth paste as prevention of caries had recorded similarly in the study carried out in Malaysia 85.3 %, and in South Asia (50%) [5,23]. The overall prevention method of dental caries majority of participants had good knowledge on present study except breast feeding at specific time. They may be gained information from advertising and marketing of different type of tooth paste and dental clinics on TV/Radio and others.

Assessments of knowledge of parents in association with age group, economic status, monthly income, education status and child relation were not statistically significant in this study (p>0.05). In India significant association was observed between outcome and socio-economic status [22]. Moreover, education level and education status also significant in Nepal, South Asia [23]. Also, in this study the assessment of knowledge with attitude and practice there was statistically significant (P< 0.05). But the result of knowledge with attitude and practice was negative correlation. Which is not in accordance with the study conducted in Ghaziabad, India [15]. In our study findings the negative correlation of knowledge with attitude and practice is difficult for justification.

Based on the attitude of participants of this study, 61.8 % showed that milk teeth are not important. This is in accordance with study undertaken in Malaysia (63.7%) [5] and in South Africa 56.1 % [21]. Relatively the study conducted in Kenya (15.3%) indicated most of the study participants were believed milk teeth is important [18]. This could be the perceptions of parents on the primary teeth are falloff after the roots resorbed and had its succedaneums teeth. The present study 76.7 % of parents was believed decayed milk teeth affect permanent teeth and 59.9 % revealed restoration as a treatment option. This is in contrast with the finding obtained from the study carried out in Kenya 28.4 % and 31.4 % respectively [18].

Our study obtained good finding on the consequences of decayed primary teeth, but it is not related with that treatment option. This may be encouraged by oral health educations of parents through mass media, health extension workers and parents attending in hospitals and other health facilities. There is also a gap on the promotions of dental clinics regarding to the deciduous dentition. The current study 76.7% of study participants were felt



children should visit a dentist twice a year. This is almost similar with the study done in Nepal 61 % [23] which is not in accordance with in Kenya 88.2 % [18].

Univariate and multivariate analysis was used and has got statistically significant associations of parental perceptions with educational levels and relation of parents to child ( $p < 0.05$ ). Other studies showed significant finding was obtained between age group, sex and socioeconomic status with parental attitude in Udaipur, India ( $p < 0.05$ ) [22]. Based on the age groups indicated significant changes in parents' perception of the importance of oral care for their children's primary teeth compared to general health ( $p < 0.05$ ) [24]. In our study there may be the need of health education about oral health and dental caries to encourage the attitude of society using mass medias, during health facility visiting's and by health extensions worker.

The practice of regular tooth brushing is important in the removal of plaque which plays a role in the initiation of caries. In the present study, majority of the participants (95%) brushed their teeth. Since, parents are a pivotal role for their children in applications of tooth brushing, but this study did not reveal. Despite the practice of parents 61.8 % of children are brushed their teeth. Most of the children brushed their teeth between the age of 5-9 years. However, the frequency of brushing varied considerably. Twenty six percent and 27.5% of the children brushed once and twice daily respectively while 8.1% brushed irregularly. This is not in accordance with the study performed in Kenya 95.6 % of children brushed their teeth with frequency of 63 % once, 31.2 % twice, 5.6 % irregular, in South Africa 70.7 % twice, 17.9 % once, in Nepal 75 % twice and 16 % once [18,21,23]. Our study is not in keeping with recommended guidelines for tooth brushing to occur at least once/twice daily. This may be due to the lack of awareness of parents to begin toothbrush after teeth erupt and cleans the gum line before tooth eruption.

Different implements can be used for mechanical and chemical plaque removal. In the present Study 44.7 % and 57.6 % of the children used a commercial toothbrush and toothpaste to clean their teeth respectively. The findings were low comparable to other studies, in Kenya 95.4%, South Africa 68.1%, 98% in Nepal [18,21,23]. Several studies have found that good knowledge and attitude toward oral health does not necessarily produce good practices [8,15]. This is in accordance with our study; good knowledge and attitude are not correlated with practice of parents to their child in preventions of dental caries. This reveals an important message that parents need to be trained and motivated to carry out oral hygiene practices in a proper way and efficiently.

The assistance of the parent/caregiver in brushing the child's teeth is likely to improve plaque removal. Especially children under 5 years have poor manual dexterity due to physical and cognitive immaturity. Thus, for children to achieve adequate plaque control, parental/caregiver assistance is necessary during brushing. In the present study, 19.8% of the participants reported assisting their children to brush teeth. Additionally, 31.7% of the

children brushed without assistance while 10.3 % had their teeth cleaned by the parent. Our study finding is similar with the study undertaken in Kenya 47.9% brushed by assistance, 36.4% brushed by their own and 15.7% cleaned by caregiver [18]. The low level of parental assistance in the present study may be attributed to either their unavailability to help or lack of awareness about the ideal timing of teeth brushing. This may also have related with 61.8 % of the study participants responded that milk teeth are not important.

The current study revealed, in univariate analysis and multivariate analysis, the practice of parents showed statistically significant association with age group ( $P < 0.05$ ). This is in accordance with the study conducted in Udaipur India, which showed the practice of study participants were significant association of with age group and socioeconomic status [22].

### Conclusion

Oral health knowledge and attitude among the participants was relatively high but the role of parental practices on prevention method was low. Generally, knowledge of parents is not statistically significant with different variables. Attitudes of parents statistically significant with education level and relation of parent to the child. The practice of parents relatively low on the beginning of tooth brushing and tooth paste especially under 5 years of children. In univariate and multivariate logistic regression, the practice of the parents shows significant association with age group ( $P < 0.05$ ).

Oral health education program is a vital role for parents of children to become better attention in oral hygiene habit. Also educate parents on the importance of the deciduous teeth conservation and infant feeding practices on the oral health of the child.

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