ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF NURSING AND MIDWIFERY

DEPARTMENT OF NURSING

POSTGRADUATE PROGRAM

KNOWLEDGE, ATTITUDE AND PRACTICE OF PARENTS TOWARDS THEIR CHILDREN ORAL HEALTH AND ITS INFLUENCE ON THE DENTAL CARIES STATUS OF 6-12 YEARS OLD SCHOOLCHIDLREN IN PUBLIC HEALTH FACILITIES OF BUTAJIRA TOWN, ETHIOPIA, 2023

BY: MOHAMMED BAMUD (BSc)

A THESIS SUBMITTED TO COLLEGE OF HEALTH SCIENCES, SCHOOL OF NURSING AND MIDWIFERY, DEPARTMENT OF NURSING, ADDIS ABABA UNIVERSITY, IN PARTIAL FULFILLMENT OF REQUIREMENTS FOR DEGREE OF MASTERS IN PEDIATRICS AND CHILD HEALTH NURSING.

JUNE, 2023

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This thesis by Mohammed Bamud is accepted in its present form by the board of examiners as satisfying thesis requirement for the degree of masters in pediatrics and child health nursing.

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STATEMENT OF THE AUTHOR

By my signature below, I declare and affirm that this thesis is my own work. I have followed all ethical principles of scholarship in the preparation, data collection, data analysis and completion of this thesis. All scholarly matter that is included in the thesis has been given recognition through citation. I affirm that I have cited and referenced all sources used in this document. Every effort has been made to avoid plagiarism in the preparation of this thesis.

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LIST OF ACRONYMS AND ABBREVIATIONS

AAU	Addis Ababa University
ALERT	All African Leprosy Tuberculosis Rehabilitation and Training Center
BSc	Bachelor of Science
CI	Confidence Interval
CSA	Central Statistics Agency
DC	Data Collector
Deft	Decayed, Missing and Filled Primary Teeth
DMFT	Decayed, Missing and Filled Permanent Teeth
ETB	Ethiopian Birr
HMIS	Health Management Information System
KAP	Knowledge, Attitude and Practice
MSc	Master of Science
OPD	Outpatient Department
OR	Odds Ratio
SNNPR	South Nations, Nationalities and Peoples Region
SPSS	Statistical Product and Service Solutions

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ABSTRACT

Background: Children's oral health is greatly influenced by parents' oral health care knowledge, attitude, and practice. In Ethiopia, children's oral health has received minimal attention, and little is known about KAP of parents towards oral health.

Objectives: The aim of this study was to assess the knowledge, attitude, and practices of parents toward their children oral health and its influence on the dental caries status of 6-12 years old schoolchildren in public health facilities of Butajira town, Ethiopia, 2023.

Methods: A cross-sectional study was conducted from February 27/2023 to March 27/2023 among parents with their 6-12 years old schoolchildren who visited public health facilities of Butajira town. A total of 371 parents with their 6-12 years old child were taken through a simple random sampling technique using table of random numbers. Data was collected through face to face interview of parents using the questionnaire to assess KAP towards their children oral health. Dental examination of the children was done using DMFT and deft index to assess the dental caries status. The data was entered into Epi-data (version 4.6.0.6) and exported to SPSS (version 21.0). Student's independent T-test was used to test the association between dental caries status and KAP. A P-value of < 0.05 was considered to be statistically significant.

Results: Majority (69.5%) of parents in the study showed poor KAP. The prevalence of dental caries among 6 to 12 years of age in study population was found to be 85.4% in primary dentition by deft index while it was 78% in permanent teeth by DMFT index. The mean DMFT was 2.19(±1.793) and mean deft was 6.12(±3.399). As KAP increased there was decrease in DMFT and deft score. The association between KAP and DMFT score was statistically significant (P-value = 0.001) while the association between KAP and deft score was not statistically significant (P-value = 0.452).

Conclusion: Majority of parents in the study had poor KAP and parental KAP was in inverse relationship with DMFT and deft score of the child**.**

Recommendations: It is evident that the data gathered from this study stresses upon conducting oral health educational programs directed towards parents.

Keywords: Oral health; Children; Parents; Dental caries; Knowledge; Attitude; Practice

1. INTRODUCTION

1.1. Background

Oral health is broadly defined as the state of being free from pain, discomfort, and disorders of the craniofacial complex and being able to speak, smile, smell, taste, touch, chew, swallow, and express a variety of emotions through facial expressions. Oral health is simply the state of the mouth and it is crucial for overall health and wellbeing, irrespective of age(1).

The most prevalent oral diseases include oral cancer, severe gum disease, tooth loss, and dental caries (tooth decay). Around 2.5 billion people are thought to be affected by dental caries, the most frequent ailment that goes untreated globally(2, 3).

Dental caries develops when plaque accumulates on the surface of a tooth and reacts with free sugars to produce acids that gradually erode the tooth. Continuously consuming free sweets, receiving insufficient fluoride exposure, and neglecting to wash your teeth can induce caries, which results in discomfort, infection, and possibly tooth loss(3). The use of refined carbohydrates, poor oral hygiene, the use of tooth paste without fluoride, poor oral health seeking behavior, and tooth morphology are some of the risk factors for dental caries(4, 5). Additionally, the risk of dental caries is linked to parental education, socioeconomic level, poverty, and lack of knowledge about oral illnesses(5).

Up to 90% of children and adolescents worldwide are affected by dental caries, which is a prevalent condition that can be prevented. Caries is treatable in its early stages, but if it is not properly prevented, it can advance and cause tooth loss or destruction, which can have a detrimental influence on a child's quality of life as well as social and economic repercussions for the entire family. Regular dental checkups, oral hygiene, antimicrobials, fluorides, low-carb diets, and dental sealants are preventative methods that can help stop permanent dental issues including dental caries(6). Dental caries can lead to a number of issues, including toothaches, pulpits, tooth loss, dental discoloration, and Ludwig angina(7).

The DMFT/deft index, which counts the number of decayed (D), missing (M), and filled (F) teeth, can be used to gauge the extent of dental caries(8).

Mixed dentition is the stage where both primary and permanent teeth are present. It covers the age ranges of 6 to 12 years, when the primary teeth are falling out and the permanent teeth are erupting. The mixed dentition is the first stage to investigate a relationship between the quantity of caries lesions on primary and permanent teeth(9).

As it establishes the groundwork for good permanent teeth, oral health in youngsters is critical and plays a significant role. Young children's dental health maintenance is greatly influenced by parents' knowledge, attitude, and oral health practices. It is obvious that the better the parents' views regarding their children's oral health, the better the children's dental health will be(10). Most of their choices in regards to their children's health are influenced by their understanding of health, especially dental health. Regarding the health of their children, parents make decisions(5). Therefore, it is crucial to investigate their knowledge, perspective, and practices as it has an impact on the dental care provided to children at home and their ability to access dentistry services provided by experts.

1.2. Statement of the Problem

According to the WHO Global Oral Health Report (2022), three out of every four of the approximately 3.5 billion persons who are affected by oral illnesses live in middle-income countries. Around the world, 2 billion people (29%) are thought to be affected by caries of the permanent teeth and 514 million children (43%) suffer from caries of primary teeth. The prevalence of the main oral diseases is continuing to climb around the globe as a result of increased urbanization and changes in living conditions. Over the past 30 years, there have been 1 billion more occurrences of oral diseases worldwide, a glaring sign that many individuals lack access to oral disease prevention and treatment(3, 11).

The most common oral diseases include dental caries (tooth decay), severe gum disease, tooth loss, and oral cancer. Dental caries, which affects an estimated 2.5 billion people worldwide, is the most common ailment that is left untreated(2, 3) and 60–90% of schoolchildren were affected by tooth decay worldwide(12). Only a small percentage of the world's population receives

essential oral health services, and those who require them most frequently have the most difficulty receiving them(2, 3).

In Africa, oral disease affects 400 million people, and it is becoming more and clearer that these conditions constitute a significant risk to the nation's health. In the African region, most oral illnesses go untreated. According to estimates, 39% of people had caries of their deciduous teeth, while 30% of people had decay in their permanent teeth(13). An extensive review and meta-analysis of studies on dental caries in East African countries found that the pooled prevalence was 45.7%(14).

Currently, economically disadvantaged communities suffer more from tooth decay (8, 15-17). Due to growing economies, dental caries is becoming increasingly common in emerging countries like Ethiopia. In the Federal Democratic Republic of Ethiopia, a systematic review and meta-analysis were carried out to evaluate the combined prevalence of dental caries and its contributing factors. The findings revealed a 40.98% prevalence of dental caries(17).

Both in low- and middle-income countries as well as high-income ones, oral illnesses have a considerable economic impact on people and societies. Dental diseases cost the world in direct costs of 356.80 billion US dollars (US$) and indirect costs of 187.61 billion US dollars (US$) in 2015. Evidence indicates that paying for oral health treatment out of pocket can result in catastrophic health costs in low- and middle-income nations(2). Dental caries are more costly to treat, costing developed nations' healthcare budgets 5–10% of total expenditures, and are a frequent cause of hospitalization(8, 16).

Children's quality of life is impacted differently by poor dental health. Their social and emotional well-being are also impacted, in addition to those domains connected to functional constraints(18). Dental caries left untreated can have serious effects like acute pain and infections, which can have a significant impact on emotions, eating habits, sleep, and self-esteem. Additionally, these oral health issues have an impact on academic performance and learning since children are more prone to leave school as a result of dental pain or illness. Low attendance and academic performance are common in kids with a high prevalence of dental caries (19-21). Even though the most prevalent dental diseases, dental caries and periodontal

diseases, can be prevented or easily controlled by following straight forward steps like brushing teeth, limiting sugar intake, using fluoride appropriately, and scheduling regular dental visits, the general public still does not practice good oral health(22).

It is the duty of the parents to look after their children's teeth in accordance with dentists' recommendations. Effective oral health promotion programs aimed at enhancing young children's dental health depend on having a solid comprehension of parents' attitudes, knowledge, and awareness of oral health. Parents' attitudes toward dentistry have been found to have a positive correlation with their children's dental health(23). Little is known about the knowledge, attitudes, and behaviors of Ethiopian parents in relation to their children's oral health and dental treatment in Ethiopia have received little attention. Therefore, this study was conducted to assess parents' KAP regarding their children's oral health and its impact on the dental caries status of 6–12 years old school children in public health facilities of Butajira town.

1.3. Significance of the Study

In Butajira town's public health facilities, this study will provide details on parents' KAP regarding oral health and how those KAPs affect children's dental caries status. Baseline information for the study population will be provided by the findings of this investigation. Policymakers may utilize the data to develop a new policy or, alternatively, to develop preventive policies through knowledge mobilization. This could result in a decrease in the prevalence of dental caries, easing the pain and suffering caused by untreated caries in children who cannot afford complete dental care. The findings will also be used as guidance for medical professionals and educators in the implementation of oral health intervention programs, such as health education programs in schools, to prevent pediatric dental caries. Additionally, decision-makers, program administrators, and the ministry of health may use the findings to comprehend the issue and place a greater priority on children's oral health. Finally researchers will use it as baseline data while they want to do further studies on it.

2. LITERATURE REVIEW

One of the diseases with a high global burden is dental caries, and several researches on children's dental health, behavior, and attitudes of parents regarding their children's oral health have been conducted. This chapter makes an effort to review many research carried out by various nations about the KAP of parents toward their children's oral health and its impact on the children's dental caries status.

2.1. Knowledge of the Parents towards their Children Oral Health

Dental caries was only identified as an infectious condition by 54% of the parents. 78% of parents who were asked about the characteristics of a toothbrush for children correctly responded that it needed to have a tiny head and soft bristles(24).

According to the study undertaken in Nepal, South Asia, around 81% of parents have a moderate understanding of oral hygiene, followed by 15% who have a poor understanding and 4% who have a good understanding. Regarding the primary causes of dental issues, 65% of participants reported eating excessive amounts of sweets, ice cream, and chocolate, followed by failing to brush teeth and failing to clean the mouth (53%)(25).

Also another study in Bhairahawa, Nepal, found that 90% of parents were aware that sugary foods contribute to dental decay, roughly 25% were aware of the value of using fluoride toothpaste, and 70% were aware of the necessity of cleaning teeth to prevent tooth decay(26). Also another study in the same country, Nepal, conclude that, knowledge of the parents regarding dental decay in children was 89.3 %(27).

A study conducted in New Delhi, India, stated that 89% of the parents were aware of the significance of primary teeth; 3.4% were not, and 7.6% of parents were unaware of the significance of primary teeth. Approximately 65% of the parents believed that issues with the primary dentition could affect the permanent teeth, 14.8% did not, and 20% were unsure of the existence of such an effect. Additionally, just 5.8% of parents thought that the child should have their first dental appointment at the age of six months, while 84.6% of parents thought that the first dental visit should be made when the child has dental problems(28).

Another study was done among mothers in Bhubaneswar, India and found that 52.5% of mothers said that the first tooth appears after six months, while 86.5% of mothers were unaware of the first dental appointment. 65.4% of mothers believe that a dental examination is not required when the first tooth erupts. Only 5.9% of mothers were aware of the right way to dispense toothpaste for children, and approximately 72.4% of mothers began brushing with a toothbrush and paste after all of the primary teeth had erupted(29).

According to the study in Nashik, Maharashtra, India, approximately 57.3% of parents believed that their children should clean their own teeth, whereas 42.1% believed that parents should do it. Approximately 81.7% of parents thought their children should clean their teeth twice everyday, while 2.8% said just once. Almost 92.7% of parents believe that using a toothbrush and toothpaste is the best way to clean teeth, while just 6.3% believe that toothpowder should be used. Only 15.4% of parents believed that children should visit the dentist after the eruption of the first milk tooth, while 51.8% of parents believed that an initial visit should wait until a child experiences dental pain. 52.2% of parents indicated that dental caries is a condition that must be treated and that 19.6% believed it to be a stain that might go away after brushing. In addition, 75.6% of parents did not know how to treat their children's primary teeth(5).

Another study in South Indian population found that around 53 percent of parents believed that treating primary teeth was vital, whereas 30% believed that it would depend on the circumstances and 16% believed that treating primary teeth was not significant. About 83% of people were aware that maintaining good oral hygiene with primary teeth also impacts permanent teeth. A total of 65% of the parents believed that children needed dental care only when their teeth in pain, 32% believed that children needed dental care only after all of their permanent teeth had grown , and only 5% believed that children did not need dental care(30).

According to the study done in Pakistan, when asked about their knowledge of plaque, 53.3% of parents responded that it was the leftover food that adheres to their teeth, 32.7% claimed that plaque and stains were interchangeable, and 14% said they had no idea what it was. Regarding the impact of plaque on teeth, 41% of parents thought it contributed to dental caries, 26.7 % thought it caused bleeding gums, 22% thought it stained teeth, and 10% had no idea. In regards to the causes of dental caries, 2% of the parents said bacteria, 24% of the parents mentioned

sweets, 14.67% of the parents mentioned sugar, 15.3% of the parents mentioned frequent snacking as a cause, and 15.3% of the parents had no idea(31). Another study in Karachi East, Pakistan, indicated that between 82 and 96% of the parents were aware of the preventative benefits of fluoride and teeth brushing, and the majority of parents (95.5%) thought routine dental checkups were crucial(32).

According to the study undertaken in Hail, Saudi Arabia, the fact that primary dentition can result in permanent dentition is understood by roughly half of the participants. Uncertainty about whether a healthy primary dentition was required for a good permanent dentition was present in about 21.5% of parents, and 28% believed that primary dentition was not significant. The majority of participants, 70.9%, felt that brushing one's teeth twice a day is best, while just 22.9% said it should be done once a day and 4.5% said it should only be done occasionally. Only 22.8% of parents were aware that the optimal timing for the first dental visit is when the first primary tooth erupts; 46.19% of parents believed that the first dental visit should take place when the child experiences pain, 5.83% of parents believed that the first dental visit should take place at 18 months. Additionally, nearly 97% of parents believe that eating sticky and sweet foods can harm their children's teeth(33). Another study in Riyadh city also found that 38% of parents said that their child's first dental visit was at least six months or a year ago, 77% of parents recognized that fluoride avoids tooth decay, and 37% of parents regularly take their children to the dentist while 28% only take their children to the dentist when there is pain(34).

According to the study in Qatar, 63–90% of mothers knew that all types of sweets, retentive carbohydrates, and soft drinks were harmfull for teeth and on the other hand, healthy food products were helpful for teeth, such as fruits, vegetables, milk, and cheese. About 53% of the children brushed their teeth by themselves and 48% of the children brushed their teeth with parental assistance(35).

From the study conducted in Erbil, Iraq, nearly 86% of the mothers stated that teeth brushing helps to prevent dental caries in their children. Mostly filling the toothbrush (51.9%), followed by half a brush (30.4%), is how much toothpaste is used to brush teeth while only 18 percent of mothers were aware that toothpaste should be used in pea-sized amounts. Around 39.2% of mothers helped their children clean their teeth, compared to 61% who did not(36).

According to the study conducted in South Africa, less than 8% of individuals mentioned inadequate oral hygiene practices, compared to about 76.6% who said nutrition was the main contributor to decayed teeth. 81.6 percent of participants felt that decayed teeth could be controlled, while only 6% were unaware of the causes of dental caries. Many participants stated that food (42%) and cleaning of the teeth (36.3%) were the main factors in the caries control(37). Also another study in South Africa conclude that 70% of parents had an average level of knowledge regarding their children's oral health(38).

According to the sudy in Salé, Morocco, the median age of tooth-brushing initiation reported by the mothers was 3.5 years, and 95.9% of the mothers were uninformed that teeth should be brushed beginning at eruption. About 53.3% of the mothers thought that permanent teeth should receive more care and that primary teeth are unnecessary. Additionally, 60.9% of the mothers knew that fluoride had a positive impact on prevention(39).

A cross-sectional study conducted in Egypt stated that, 88.5% of those who participated in the study had a good understanding of proper oral hygiene. From this study, about 96% of the mothers were aware that brushing their teeth helps prevent dental caries, and 85 and 80% were aware that consuming sugary diet and soft beverages, respectively, increases the risk of dental caries. A large percentage of mothers (82.6%) said twice daily was the recommended frequency for brushing teeth. About 59% of them stated that oral bacterial infection may be the cause of dental caries, whereas 45% of them reported that fluoride supplementation plays a part in tooth protection. Least knowledge of mothers was about definition of dental plaque (29.8%) and its drawbacks (36.9%)(40).

According to the study undertaken in ALERT hospital, Ethiopia, almost 92.4%stated that eating sugary foods can lead to tooth decay, while 92%, 85.9%, and 85.4% said that not brushing teeth after meals, bacteria, and lack of mouthwashing after meals were the causes of tooth decay, respectively. The overall knowledge of parents regarding dental caries was generally good with a score of 78.2%. Around 95.8% of study participants said dental caries can be controlled. The majority of participants (87%) stated that using toothpaste when cleaning teeth and reducing sweet food intake can prevent tooth decay. Regular tooth brushing and limiting snacking

between meals can both prevent dental decay, according to 83.2% and 66.4% of participants, respectively(41).

2.2. Attitude of Parents towards Their Children Oral Health

According to the study undertaken in Nepal, South Asia, after feeding or eating, all parents agreed that it is important to clean/rinse the child's mouth(25). Another study conducted in Bhairahawa, Nepal, approximately 83% of parents felt that nutrition has an effect on the development of caries. Only 60% of parents believed that a child needs good milk teeth in order to chew food effectively, while about 75% of parents said that regular dentist visits are vital(26).

According to the study conducted in New Delhi, India, nearly 10.4% of the parents thought that brushing your child’s teeth should be done once per day, whereas 88.8% said twice per day. Only 0.8% of participants said they only occasionally brushed, and no one felt that children should not brush their teeth(28).

From the study undertaken in Nashik, Maharashtra, India, about 49% of the parents stated that, milk teeth are necessary for eating, speaking, and maintaining the mouth's space until permanent teeth grow. Almost 23% of parents are unaware of the significance of milk teeth. Only 6.2% of people did not believe that dental care was as vital as other medical care, compared to 93.8% of parents who gave dental care and other medical care same weight. When faced with oral diseases, around 84.1% of parents stated they would follow a pedodontist's advice. In the study population, 58.7% of parents were aware that a pedodontist may treat their children more effectively; however, about 26.4% of parents were unaware of pedodontists and dental care(5).

According to the study conducted in South Indian population, approximately 68% of parents believed that since primary teeth would eventually fall out, treatment was not necessary. However, about 71% of parents believed that not treating primary teeth would have an impact on permanent teeth, and 63% of parents believed that permanent teeth would fill in the primary missing space. Around 19% of the parents believed that treating the primary teeth was not necessary, while approximately 55% of the parents were aware that refusing treatment in primary teeth will result in more caries(30).

Another study which was conducted in Chennai, India, found that, 78.3% of the parents brought their children to the dentist because of a pain or trauma, 9.4% because of caries, 6.6% because of an esthetic issue, and 5.7% because of bad breath. While 33% of parents believed that a routine dental checkup was not vital and 11.3% were unaware of the need of regular dental checkups, 55.7% of parents said that visiting the dentist on a regular basis was important. Nearly 71.7% of parents agreed that treating primary teeth is required, while 20.8% disagreed, arguing that doing so would be a waste of money and time. 7.5% of parents did not know that treating primary teeth was necessary(42). Similar study in Kashmir, Northern India reaveled that the significance of deciduous teeth was not understood by 67.39% of participants, 26.39% of participants were aware of the significance of them, and 32.6% of parents were aware that issues with primary teeth can influence permanent teeth(43).

According to the study conducted in Hail, Saudi Arabia, it was correctly stated by only 13% of parents that they should take their children to the dentist twice a year(33). Another study in Riyadh city, Saudi Arabia, found that 85% of the parents agreed that primary teeth require the same level of care as permanent teeth(34).

From the study conducted in Qatar, 48% of the mothers believed that children should start brushing their teeth at age three, while 42% of the mothers choose less than two(35).

According to the study conducted in South Africa, more than fifty percent of the parents (56.1%) said that milk teeth were significant and 74.6% thought that decayed teeth may harm children's health. Meanwhile, 51.1% of parents said that their child should have their first dental checkup by the time they become one year old. Around 73.6% of the parents reported that unhealthy milk teeth can cause complications when permanent teeth erupt(37). Also another study in South Africa stated that parental attitudes about oral health were positive in 95% of the samples(38).

A cross-sectional investigation of mothers in Egypt revealed that almost 70% of the mothers had a positive view toward oral hygiene(40).

According to the study undertaken in ALERT hospital, Ethiopia, around 72.5 % of the parents had positive attitude towards dental caries status of their children. Decayed milk teeth can have an effect on the permanent teeth and the general health of the child, according to responses from

76.7% and 73.3% of survey participants, respectively. Approximately 61.8% of the participants thought milk teeth were not significant. The majority of participants (76.7%) said that children should go to the dentist every six months on a regular basis. A majority of participants (59.5%) said that the best therapy for a decaying tooth was to clean and fill it(41).

2.3. Practice of the Parents towards their Children Oral Health

According to the study conducted in central Italy, 57% of the parents started tooth brushing between 2 and 3 years of age. Around 89% of parents stated that their children use age-appropriate toothpaste every day and 7% of the children in the sample do not use toothpaste(24).

From the study conducted in Bhairahawa, Nepal, about 95% of parents only take their children to the dentist when something is wrong. Only 16% of parents went to the dentist six months after the baby was born. Only 20% of parents twice-brushed the children's teeth daily(26). Another study in Nepal found that, 56.5% of parents used toothbrush and 88.7% of parents used toothpaste to clean their child's teeth which was done twice a day or after meals by 38.7% parcipants. Despite 57.1% of parents agreeing that children should have regular dental visits, just 11.9% of parents attended the dentist every six months(27).

According to the study undertaken in New Delhi, India, 94.8% of parents brush their children's teeth using a toothbrush and fluoridated toothpaste. Nevertheless, 4.0% of the parents brush their teeth using nonfluoridated toothpaste and 1.2% do not use any kind of toothpaste(28). Another study in Nashik, Maharashtra, India, indicated 51% of parents have never been to the dentist, compared to 49% of parents who have, and just 35.7% of parents have taken children to the dentist for routine dental checkups, as compared to 64.2% of parents who have not. In the study's sample, 70.4% of parents provide their children with chips, candy, soft beverage, and sweets(5). According to the study done in South Indian population, most parents only took their children to the dentist if their children were in discomfort or complained of pain, and just 18% of parents took their children to the dentist on a regular basis, while 19% never did(30). Another simlar study in Chennai, India, indicated that about 79.2% of children only clean their teeth in the morning, whereas 20.8% of children perform it twice. Around 10.4% of children used baby toothpaste, compared to 81.1% of children who utilized adult toothpaste. 3.8% of the children used mouthwash, whereas 96.2% did not. Regarding brushing technique, 44.3% of

children used a horizontal brush, 28.3% used a circular brush, and 27.4% used a vertical brush when brushing their teeth. Approximately 38.7% of respondents took 2-3 minutes to clean their teeth, 33% took longer than 2-3 minutes, and 28.3% took between 2 and 3 minutes. 10.4% of parents brush their child's teeth, while 74.5% of parents monitor their child when brushing, and 15.1% of parents advise but do not supervise their child while brushing(42).

According to the study done in Karachi East, Pakistan, 64.5% of parents still do not regularly take their children to the dentist(32). Another study in Pakistan indicated that it has also been observed that while 7.3% of parents used the Miswak to clean their teeth, 92.6% of parents used tooth brushes and toothpaste to clean their children's teeth. While 65% of respondents used fluoridated toothpaste, the remaining 35% did not(31).

A study in Hail, Saudi Arabia, indicated that for their children, about 71.75% of participants used a toothbrush and fluoridated toothpaste, while 14.80% used a toothbrush and nonfluoridated toothpaste. A few participants used a toothbrush simply with water (7.62%) and miswak (2.24%) to brush children's teeth. Contrarily, 0.45% of respondents use dental floss, and 3.14 percent didn't utilize any of the treatments given(33).

According to the study conducted in Qatar, nearly 25% of the mothers said they were unable to recall the last time they had been to the dentist, while 38% said they went every six months, 18% said they went once a year. The majority (78%) of mothers reported brushing their children's teeth two times day. Around 50% of the children had not been to the dentist yet, and in the opinion of 54% of mothers, children shouldn't have their teeth flossed. Only 10% of children who went to the dentist for a visit had a regular checkup. About 30% of the children gone to the dentist when a problem occurred(35).

A study done in Erbil, Iraq, indicated that 91% of children started brushing after three years of age, 2.5% of the children never consumed sweets, 61% of the children consumed sweets 1-2 times daily and 37% more than or equal 3 times daily. About 58% of the children had previously visited a dentist, compared to 42% who had not(36).

According to the study undertaken in South Africa, parents stated that 89% of the children brushed their teeth and 86% of the children brushed their tongue(38).

A cross-sectional study conducted in Egypt indicated that, among mothers, 52.3% practiced oral hygiene to an acceptable degree(40).

According to the investigation undertaken in ALERT hospital, Ethiopia, indicated that the parents' total practice scores with regard to their children were 61.8%. Participants in the survey reported that 61.8% of children cleaned their teeth. Between the ages of 5 and 9, 31.7% of children brush on their own. The percentage of children who cleanse their own teeth twice a day and once a day, respectively, is 27.5% and 26%. The majority of parents (44.7%) used a toothbrush for cleaning and 57.6% used tooth paste. Ninety-five percent of the participants in the study (95%) clean their teeth(41).

2.4. Influence of Parents' KAP on the Dental Caries Status of Children

A systematic review studies conducted in developing nations discovered that children who had parents with less oral health knowledge and attitudes had increased likelihood of having dental caries (OR = 9.59, $p < 0.0001$). Additionally, it was discovered that children with parents who lack comprehensive oral health care knowledge had higher dmft scores than children with parents who had those skills (dmft: lack = 5.49 4.77, comprehensive = 4.32 4.68)(44).

A study conducted in Nashik, Maharashtra, India revealed that the DMFT index determined the prevalence of dental caries to be 61.1% in the permanent dentition and that there was no difference in the prevalence of dental caries between girls and boys. Children aged 10 have the highest prevalence of DMFT (83.3%). According to the deft index, the prevalence of dental caries in the primary dentition was reported to be 97.8%. Boys [98.1%] had slightly more primary teeth with dental caries than girls [97.1%]. The deft was appeared to be prevalent throughout all age groups. The study classified the entire KAP score into three categories: good, fair, and poor. Mean DMFT scores ranged from low in fair KAP [1.63 1.6] to high in poor KAP [1.72 1.5]. Between the good, fair, and poor KAP groups, there was not much of a difference that was statistically significant [p value = 0.76]. Although DMFT and deft scores decreased as KAP increased there was no statistically significant correlation between the two variables(5). Another study conducted in Northern India revealed that total KAP scores were good in parents in 23.6% of cases, fair in 64.9%, and poor in 11.5% of cases. Children with good, fair, and bad KAP had

1.56, 1.63, 1.72 DMFT and 6.09, 6.77, and 7.41 deft, respectively, with the only significant difference between the KAP groups was for deft(45).

According to the study conducted in Pakistan stated that dental caries was three times more likely in parents who did not use fluoride toothpaste than in those who did (P=0.009). Dental caries' prevalence was strongly correlated with parents' fluoride knowledge and in comparison to those who were aware, those who were unaware had 1.82 times the likelihood of developing dental caries (P=0.028)(31).

According to the sudy undertaken in Tehran, Iran, mothers' knowledge and children's dmft had a negative correlation (r = -0.6) that was statistically significant. In addition, there was a negative relationship (r = -0.7) between mothers' attitudes and dmft(46).

A cross-sectional study conducted in Egypt stated that, an absence of decaying or filled teeth is statistically significantly improved with proper oral hygiene knowledge and practice(40).

2.5. Conceptual Frame Work

The researcher established this conceptual framework by reviewing and synthesizing ideas from many works of literature (12, 17, 26, 47).

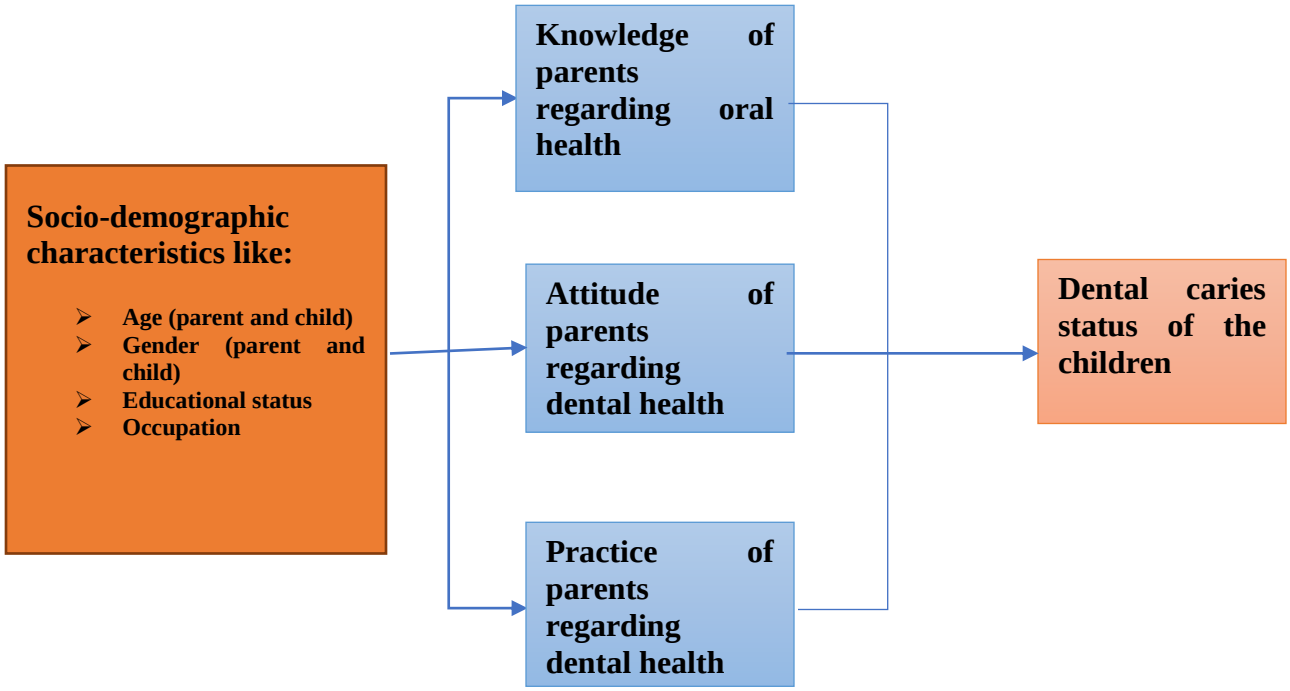

Figure 1: Conceptual framework for the evaluation of parents' knowledge, attitudes, and practices about their children's oral health andits influence on the dental caries among schoolchildren aged 6 to 12 in Butajira town, Ethiopia, in 2023.

3. OBJECTIVES

3.1. General Objective

To assess the knowledge, attitude, and practice of the parents toward their children oral health and its influence on the dental caries status of 6-12 years old schoolchildren in public health facilities of Butajira town, Ethiopia, 2023.

3.2. Specific Objectives

The objectives of this study are;

- To assess the knowledge of parents toward their children oral health in public health facilities of Butajira town, Ethiopia.
- To assess the attitude of parents toward their children oral health in public health facilities of Butajira town, Ethiopia.
- To assess the practices of parents toward their children oral health in public health facilities of Butajira town, Ethiopia.
- To determine the influence of parents' KAP on dental caries status of 6-12 years old schoolchildren in public health facilities of Butajira town, Ethiopia.

4. MATERIALS AND METHODS

4.1. Study Area and the Study Period:

The study was undertaken from February 27/2023 to March 27/2023 at public health facilities of Butajira town. Butajira, a town and separate woreda in central Ethiopia, is situated in the Gurage Zone of the SNNPR at the foot of the Zebidar massif. It is located around 132 km South of Addis Ababa, the capital city of Ethiopia, 166 km from Hawassa, the capital city of SNNPR, and 107 km from Wolkite, the capital town of Gurage Zone. Butajira is encircled by Meskan Woreda and is 2131 meters above sea level. This town has a total population of 33,406 people, 16,923 of whom are men and 16,483 of whom are women, according to the CSA's 2007 Census. A reported 51.27% of the population identified as Muslim, 39.58% as Ethiopian Orthodox Christians, and 8.72% as Protestants. One general hospital and one health center are located in the town(48).

4.2. Study Design

Institution based cross-sectional study design was used from February 27/2023 to March 27/2023.

4.3. Population

4.3.1. Source population:

All parents with their 6-12 years old schoolchildren visiting the public healthcare facilities in Butajira town from February 27/2023 to March 27/2023.

4.3.2. Study Population:

All selected parents with their 6-12 years old schoolchildren visiting the public healthcare facilities in Butajira town from February 27/2023 to March 27/2023.

4.4. Inclusion and Exclusion Criteria

4.4.1. Inclusion criteria:

All parents who gave consent with their 6-12years old schoolchildren who gave assent attending public health facilities of Butajira during the data collection period were incorporated in the study.

4.4.2. Exclusion criteria:

Parents who were under the age of 18 were excluded from the study.

4.5. Sampling Methods:

4.5.1. Sample size determination:

The sample size was calculated using the prevalence of dental caries which was conducted in Assosa,(p=40.98%)(17) and using simple population formula, 95%CI, d = (marginal error) = 0.05.

$$N = \frac{Z(\alpha/2)^2 p(1-p)}{d^2}$$

Where N=sample size

Z=Z-value

P= prevalence of dental caries in Ethiopia(17).

C1=confidence level (95%)

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

$N=1.96^2*0.4098\ (1-0.4098)/0.05^2 =371$

The 10 % contingency for the non-respondent was added.

=371+10% Contingency= 408

The final sample size was 408 parents with their 6-12 years old child.

4.5.2. Sampling Procedure:

The Butajira general hospital and the Butajira health center are the two public health institutions in the town of Butajira. The study took into account both public health facilities. According to HMIS data taken from each facility, the average numbers of parents with children aged between 6-12 years old attending Butajira general hospital and Butajira health Center per month were 1612 and 1431 respectively. By allocating the sample size proportionally for each facility,

The proportionally allocated sample size for Butajira general hospital was calculated as the final sample size multiplied by the total number of parents with their 6-12 years old children attending Butajira general hospital per month divided by the total number of parents with their 6-12 years old children attending in Butajira general hospital and Butajira health Center per month.

Which equals 408*1612/3043 = 216 parents with their 6-12 years old child from Butajira general hospital were taken through a simple random sampling technique by the table of random numbers.

The proportionally allocated sample size for Butajira health Center was calculated as the final sample size multiplied by the total number of parents with their 6-12 years old children attending Butajira health Center per month divided by the total number of parents with their 6-12 years old children attending in Butajira general hospital and Butajira health Center per month.

Which equals 408*1431/3043 = 192 parents with their 6-12 years old child from Butajira health center were taken through a simple random sampling technique by the table of random numbers.

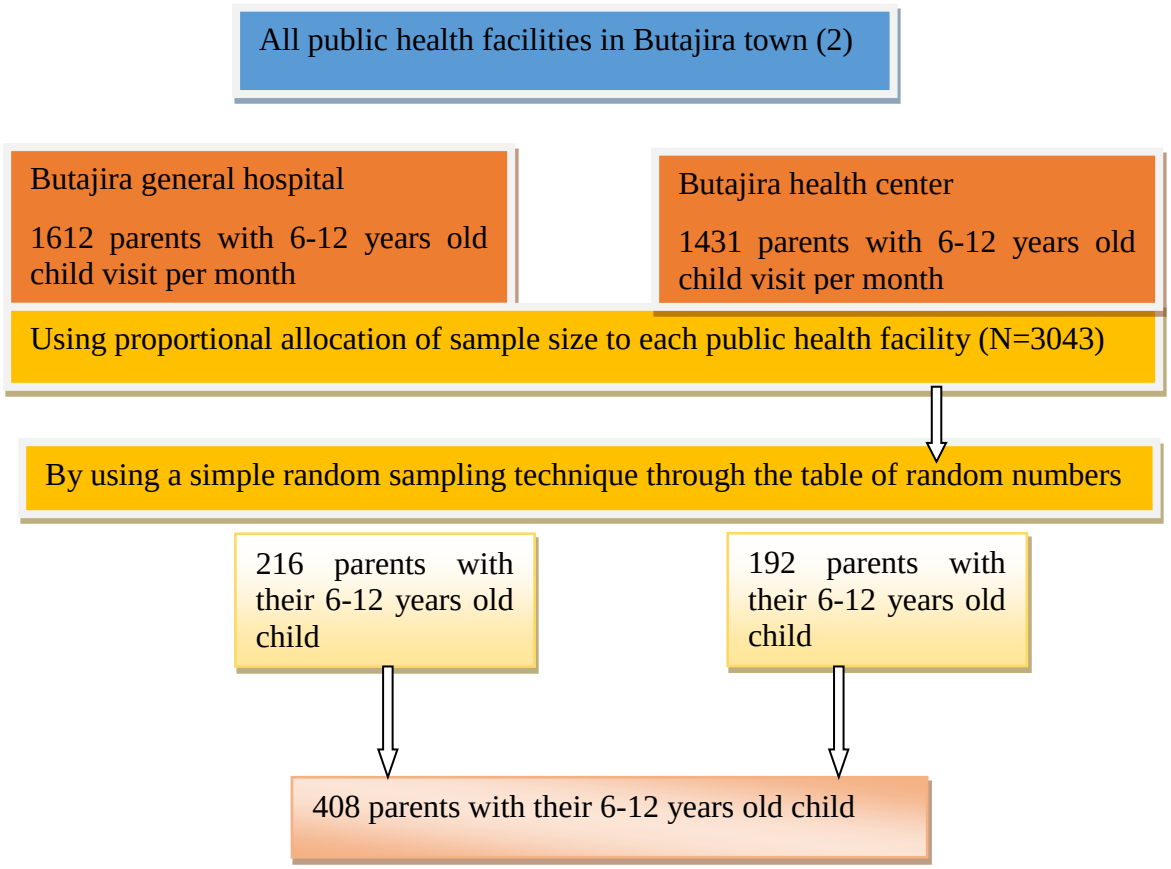

Figure 2: Schematic representation of sampling technique for the assessment of knowledge, attitude, and practices of parents toward their children oral health and its influence on the dental caries status of 6-12 years old schoolchildren in public health facilities of Butajira town, Ethiopia, 2023

4.6. Operational Definitions

- Oral health: - is the state of the mouth, teeth, and orofacial structures, which enable people to perform everyday functions like eating, breathing, and speaking(49).
- Knowledge: - information gathered about dental health care(41).
- Good knowledge: -Parents who scored ≥ 60% from knowledge questions in the questionnaire(41).
- Poor knowledge: -Parents who scored < 60% from knowledge questions in the questionnaire(41).
- Attitude: - How parents behave in regard to dental health(41).
- Positive attitude: -Parents who scored ≥ 60% from attitude questions in the questionnaire(41).
- Negative attitude: -Parents who scored < 60% from attitude questions in the questionnaire(41).
- Practice: - How parents should monitor their children's oral hygiene(41).
- Good practice: -Parents who scored ≥ 60% from practice questions in the questionnaire(41).
- Poor practice: -Parents who scored < 60% from practice questions in the questionnaire(41).
- Over all KAP: -Knowledge +Attitude + Practice(5)
- Good KAP: -Parents who scored ≥ 60%from total KAP questions in the questionnaire(41).
- Poor KAP: -Parents who scored <60%from total KAP questions in the questionnaire(41).
- Dental caries: Evidence of a permanent tooth missing as a result of dental caries, a clinical diagnosis of dental caries, the presence of fillings in at least one permanent or primary tooth, or both(9).
- Dental caries present: If DMF score plus def score greater than zero (DMF+def>0)(9).
- Dental caries absent: If DMF score plus def score is equal to zero (DMF+def=0)(9).

4.7. Study Variables

4.7.1. Dependent variables

- Knowledge of the parents
- Attitude of the parents
- Practice of the parents

4.7.2. Independent variables

The socio- demographic characteristics like:

- Age (parent and child)
- Gender (parent and child)
- Educational status
- Occupation

4.8. Data Collection Tools and Procedures

After obtaining informed verbal consent, face-to-face interviews were used to collect the data with a trained data collector using a structured, previously tested questionnaire. The questionnaire was adapted from other related studies (26, 27, 31, 41, 50, 51) which was prepared in English and translated into Amharic. The translation was then reversed to English to ensure consistency. The questionnaire had four parts. The first section of the questionnaire consists of demographic data including age and sex of parents and children, Educational status, and occupation of the parents. The second part consisted of 12 multiple-choice close-ended questions related to knowledge. The third part consisted of 10 attitude questions prepared through a five point Likert scale which corresponds with strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). The fourth part consisted of 14 multiple-choice close-ended questions related to practice of parents towards oral health. A score system was created to evaluate the questionnaire results. Scores were based on how many parents provided accurate or favorable answers. The favorable/correct response received a value of 1, while the unfavorable/incorrect response received a value of 0. Each component was added together to determine the final KAP score, which is Knowledge + Attitude + Practice(5). The DMFT Index for permanent teeth and the deft Index for primary teeth were used in the clinical examination to check for the existence of carious lesions. The children were receive a dental examination by 2 trained BSc nurses (1 in

Butajira general hospital and 1 in Butajira health center) and each assisted by another trained BSc nurse through recording the data on clinical examination form. In a classroom with a window and natural light, the clinical examination was performed by placing a child patient on an ordinary wooden chair and using tongue depressors. According to the World Health Organization (WHO) guidelines, the clinical examination involved evaluating the number of decaying, missing/extracted, and filled deciduous and permanent teeth(52). When a carious cavity was visible upon inspection, lesions were noted as present. Each child's DMFT and deft scores were calculated, and teeth lost to trauma or exfoliations were omitted.

4.9. Data Quality Assurance

Training on data collection procedures and on physical examination was given by the principal investigator and a dental therapist working in Butajira general hospital for 2 days. To ensure the accuracy of the data and the establishment of the data collection tool, a 5% pre-testing of the questionnaire was carried out at Kibet General Hospital. Each completed questionnaire was verified for completeness, accuracy, clarity, and consistency on a regular basis. Data collectors were supervised throughout the data collection process to understand how they handled the questionnaires. Any gaps were filled in as needed with the appropriate corrective action, and then additional precautions were taken throughout data entry and data cleaning.

4.10. Data Processing and Analysis

SPSS version 21.0 was used to do statistical analysis on the data that had been coded and entered into Epi-data (version 4.6.0.6) software. Frequency distribution, percentages, tables, and bar graphs were used to present the results. The association between a child's dental caries status and the KAP of their parents was analyzed using a Student's independent T-test. A P-value of 0.05 or lower was considered as statistically significant.

4.11. Ethical Consideration

Ethical clearance was provided from the department of nursing, school of nursing and midwifery, Addis Ababa University. After ethical clearance letter with a protocol number 19/SNM/15 was obtained from the department of nursing, a support letter was written by the department of nursing for the administration of Butajira city health office and the health office also wrote another support letter for the administrators of Butajira general hospital and health center. Written permission was obtained from the hospital administrator as well as from the administrator of the health center before starting data collection. The study's aims and confidentiality was explained, and verbal consent was obtained from the parents for participation just before data collection and dental examination of the children. The clinical examination was carried in a classroom next to a window under natural light through screening the child in order to maintain the privacy of the child. Following the interview and dental examination, the study subjects received oral health education and those with serious oral and other health problems were referred to the dental clinic of Butajira general hospital for further investigation and treatment. The results of the study were disclosed only when it is necessary and for those who want to know it.

4.12. Dissemination Plan

The results of the study were submitted and presented to the Addis Ababa University College of Health Science, the Butajira Town Health Office, and all relevant organizations. The results were also presented at conferences, seminars, meetings, and workshops, and the article was submitted for publication to various journals.

5. RESULTS

With a response rate of 100%, a cross-sectional study was conducted on 371 children aged 6 to 12 and their parents who attended public health facilities in Butajira town. Out of 371 children, 48% were boys and 52% were girls. The median age of the children was 8. Out of 371 parents 56.3% were mothers while 43.7% were fathers. Among total study population, 33.2% of peoples were belonged to primary education group followed by secondary (25.1%), college and above (21.6%), and illiterate (20.2%). Around 31.0% of parents were merchants followed by housewives (24.8%), farmers (22.9%), and government employed (18.3%) (Table 1).

Table1: Socio demographic distribution of study participants in public health facilities of Butajira town, Ethiopia, 2023.

Variables	Frequency	Percent
Gender		
Male	178	48
Female	193	52
Age of the children		
6	60	16.2
7	69	18.6
8	60	16.2
9	46	12.4
10	49	13.2
11	46	12.4
12	41	11.1
Parental relationship to the child		
Mother	209	56.3
Father	162	43.7

Parental education status		
Illiterate	75	20.2
Primary	123	33.2
Secondary	93	25.1
college and above	80	21.6
Parental occupation		
Farmer	85	22.9
Government employed	68	18.3
Merchant	115	31.0
house wife	92	24.8
Others	11	3.0

5.1. Knowledge of Parents towards Their Children Oral Health

Majority (69%) of parents had poor knowledge towards their children oral health and only 31% of parents had good knowledge towards their children oral health (Figure 3).

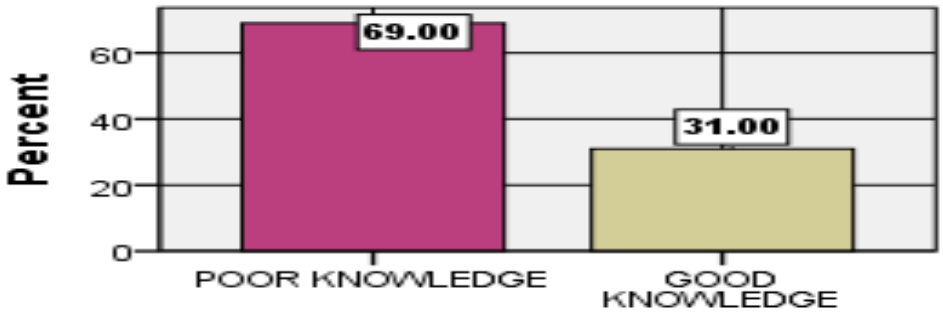

Figure 3: knowledge status of parents towards their children oral health in public health facilities of Butajira town, Ethiopia, 2023.

Around 44.5% of parents were not aware about dental plaque. The majority of parents (40.4%) stated that the primary goal of brushing teeth is to avoid tooth decay and gum disease, which is followed by achieving cleaner and brighter teeth (38.3%). Only 40.2% of parents know the recommended amount of toothpaste applied on a brush. The majority of parents (68.2%) were not aware of how fluoride affects teeth. Approximately two third (65.8%) of parents were unaware of the recommended time for the children's first visit to the dentist. More than half (58.5%) of parents were not aware of dental caries complications related to primary teeth may affect permanent teeth (Table 2).

Table 2: Knowledge of parents towards their children oral health in public health facilities of Butajira town, Ethiopia, 2023.

Descriptive statistics of knowledge of parents		
Knowledge questions	Frequency	Percent
1. Can health of teeth and mouth affect health of body?		
Yes	289	77.9
No	71	19.1
don't know	11	3
2. What is the importance of oral health compared to general health?		
the same importance	212	57.1
more important	27	7.3
less important	111	29.9
don't know	21	5.7
3. What is dental plaque mean?		
Discoloration of teeth	69	18.6
Soft deposits on teeth	114	30.7
White patches on teeth	23	6.2
Don't know	165	44.5
4. What is the main purpose of tooth brushing?		
For prevention of tooth decay and gum disease	150	40.4
For achievement of cleaner and brighter teeth	142	38.3
To remove stains on teeth	40	10.8
Don't know	39	10.5
5. What is the main cause of dental caries?		
Bacteria	125	33.7
Eating sweet food staffs	93	25.1
Not brushing the teeth	70	18.9
Lack of mouth rinsing after meal	31	8.4
I don't know	52	14

6.	Do you think dental caries can be prevented /controlled?		
	Yes	257	69.3
	No	50	13.5
	don't know	64	17.3
7.	How can we prevent dental caries?		
	Brushing with tooth paste daily	176	47.4
	Limiting the amount of sugary foods	68	18.3
	Having regular dental checkup	13	3.5
	Do not know	58	15.6
8.	How much amount of toothpaste should be placed on a brush?		
	a small pea-size	149	40.2
	filling the toothbrush	130	35
	half a brush	67	18.1
	no matter the amount	25	6.7
9.	Do you know that some toothpaste contains fluoride?		
	Yes	123	33.2
	No	35	9.4
	don't know	213	57.4
10.	What is the effect of fluoride on teeth?		
	Prevention of gum disease	13	3.5
	Prevention of tooth decay	87	23.5
	Cleaning of teeth	18	4.9
	don't know	253	68.2
11.	When should be the children's first visit to the dentist?		
	After tooth decay	83	22.4
	When there is a toothache	135	36.4
	When milk teeth begin to fall	26	7
	After the first milk tooth appears	127	34.2
12.	Dental caries complications related to primary teeth may affect permanent teeth?		
	Yes	154	41.5
	No	138	37.2
	don't know	79	21.3

5.2. Attitude of Parents towards Their Children Oral health

Around 55.8% of parents had positive attitude towards their children oral health whereas the remaining 44.2% had negative attitude (Figure 4).

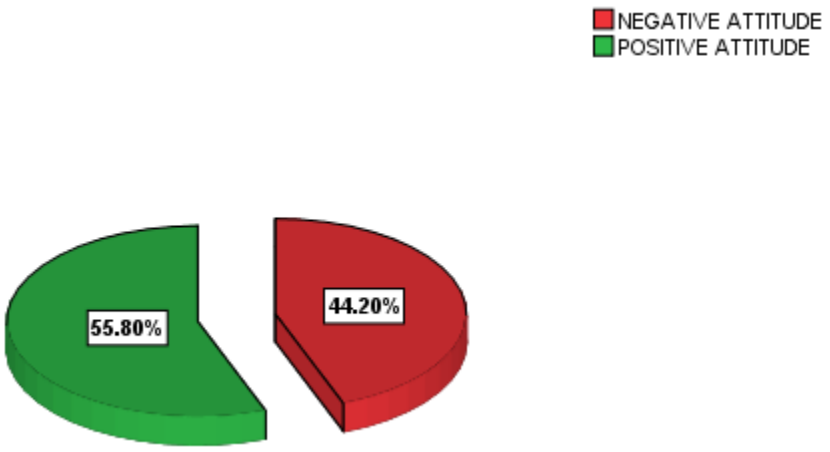

Figure 4: Attitude status of parents towards their children oral health in the public health facilities of Butajira town, Ethiopia, 2023.

Nearly three fourth (73.6%) of parents agreed that dental treatment is as important as other health treatment. More than half (54%) of parents believed that since milk teeth are going to come out, they do not need to be taken care of well. Around half (51.5%) of parents thought that taking their children for regular dental visits every six months was unnecessary. More than half (52.6%) of the parents thought visiting the dentist was only necessary only when their child experienced pain. More than two third (68.5%) of parents had negative attitude regarding the transmission ability of tooth decay from milk teeth to permanent teeth (Table 3).

Table 3: Attitude of parents toward their children oral health in public health facilities of Butajira town, Ethiopia, 2023.

Descriptive statistics of attitude of parents		
Attitude questions	Frequency	Percent
1. Dental treatment is as important as other health treatment.		
Strongly disagree	4	1.1
Disagree	80	21.6
Neutral	14	3.8
Agree	229	61.7

strongly agree	44	11.9
2. With the growth of the first baby teeth, parents can begin to clean them with a piece of gauze or a clean washcloth.		
strongly disagree	6	1.6
Disagree	131	35.3
Neutral	32	8.6
Agree	197	53.1
strongly agree	5	1.3
3. Feeding too much sweet food to child causes tooth decay.		
strongly disagree	2	0.5
Disagree	71	19.1
Neutral	10	2.7
Agree	236	63.6
strongly agree	52	14
4. Cleaning of the children's teeth should be guided by parent?		
strongly disagree	2	0.5
Disagree	37	10
Neutral	12	3.2
Agree	301	81.1
strongly agree	19	5.1
5. Milk teeth are essential for children to chew food properly.		
strongly disagree	0	0
Disagree	51	13.7
Neutral	12	3.2
Agree	286	77.1
strongly agree	22	5.9
6. Milk teeth do not require good care as it is going to fall away.		

strongly disagree	18	4.9
Disagree	153	41.2
Neutral	4	1.1
Agree	175	47.2
strongly agree	21	5.7
7. It is necessary to take your child for regular dental visits every six months.		
strongly disagree	10	2.7
Disagree	175	47.2
Neutral	6	1.6
Agree	162	43.7
strongly agree	18	4.9
8. Visiting the dentist is only necessary only when your child experiences pain.		
strongly disagree	21	5.7
Disagree	155	41.8
Neutral	0	0
Agree	164	44.2
strongly agree	31	8.4
9. Tooth decay is passed on from milk teeth to permanent teeth		
strongly disagree	29	7.8
Disagree	205	55.3
Neutral	20	5.4
Agree	104	28
strongly agree	13	3.5
10. General body health has a relationship with oral health		
strongly disagree	0	0

Disagree	60	16.2
Neutral	25	6.7
Agree	246	66.3
strongly agree	40	10.8

5.3. Practice of the Parents towards their Children Oral Health

Majority (80.1%) of parents had poor practice towards their children oral health and only 19.9% of parents had good practice towards their children oral health (Figure 5).

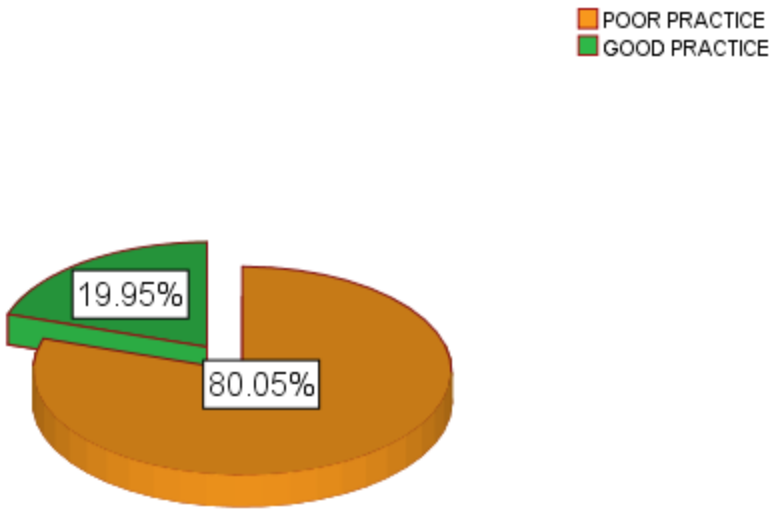

Figure 5: Practice status of parents towards their children oral health in public health facilities of Butajira town, Ethiopia, 2023.

Out of 371 participants around 47.7% of participants were never clean their children's teeth. Out of those who clean their children's teeth, majority (64.4%) of participants used toothbrush and tooth paste containing fluoride for brushing their children's teeth. Only 20% of parents clean twice per day. Majority (60%) of the parents were do not brush the tongue while brushing the child's teeth. Around half (50%) of parents were do not change their children's toothbrush in the recommended time. Majority (64%) of parents gave their child sweets, soft drinks, chocolates and chips (Table 4).

Table 4: Practice of the parents toward their children oral health in public health facilities of Butajira town, Ethiopia, 2023.

Descriptive statistics of practice of parents		
Practice questions	Frequency	Percent
1. Do you clean your children's teeth?		
Yes	194	52.3
No	177	47.7
2. How do you clean a child's teeth?		
Toothbrush and tooth paste containing fluoride	125	64.4
Tooth brush with water only	29	14.9
Mefaqiya(twig brush)	40	20.6
3. How many times do you clean your children's teeth?		
Once per day	69	35.6
Twice per day	39	20
Thrice per day	10	5
Occasionally	76	39
4. For how long do you brush your children's tooth?		
2-3 minute	111	67
>2-3 minute	19	11.4
<2-3 minute	36	21.7
5. Which brushing motion you used to brush your children's teeth		
Vertical	70	41
Horizontal	40	23.5
Circular	60	35.3
6. Do you brush the tongue of the child?		
Yes	66	40.2
No	98	59.8
7. Do you use an appropriate size for age toothbrush for a child?		
Yes	100	65
No	54	35
8. What type of toothpaste do you use to brush a children's tooth?		
Adult toothpaste	82	62
Baby toothpaste	51	38
9. Do you use mouth wash after brushing the children's tooth?		
Yes	155	98
No	3	2
10. When was you commenced tooth brushing for a child?		
After all the milk tooth erupted	88	52
When milk teeth begin to fall	12	7

When the first milk tooth appears	51	31
do not remember	17	10
11. When do you change your children's toothbrush?		
Every 6 months	30	20
every 3 months	77	50
once the bristle frays out	45	29
Do not now	2	1
12. Do you ask your child to rinse his mouth after each meal?		
Yes	261	70.4
No	110	29.6
13. Do you give your child sweets, soft drinks, chocolates and chips?		
Yes	236	63.6
No	135	36.4
14. What will you do when your children's teeth are decayed?		
I will visit a Dentist	329	88.7
I will visit a traditional healer	10	2.7
I do not seek help anywhere	32	8.6

5.4. Overall KAP of the Parents towards their Children Oral Health

Based on the scoring criteria, it was found that more than two third (69.5%) of parents showed poor KAP towards oral health of their children, while the remaining 30.5% exhibited good KAP (figure 6).

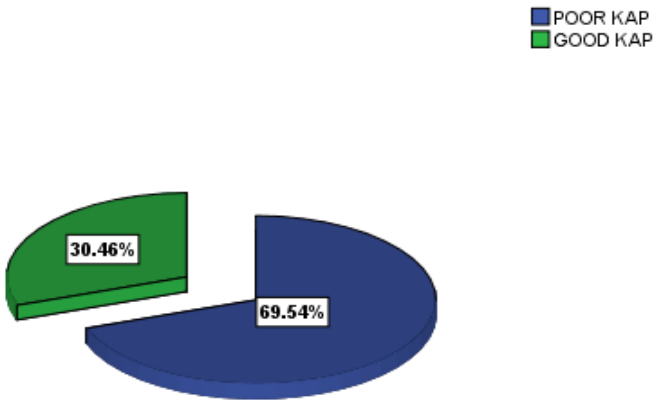

Figure 6: The overall KAP status of parents towards their children oral health in public health facilities of Butajira town, Ethiopia, 2023.

5.5. Observations for Data Collected by Clinical Examination

According to the DMFT index, the prevalence of dental caries among children aged 6 to 12 in the study population was 78% in the permanent dentition(Figure 7).

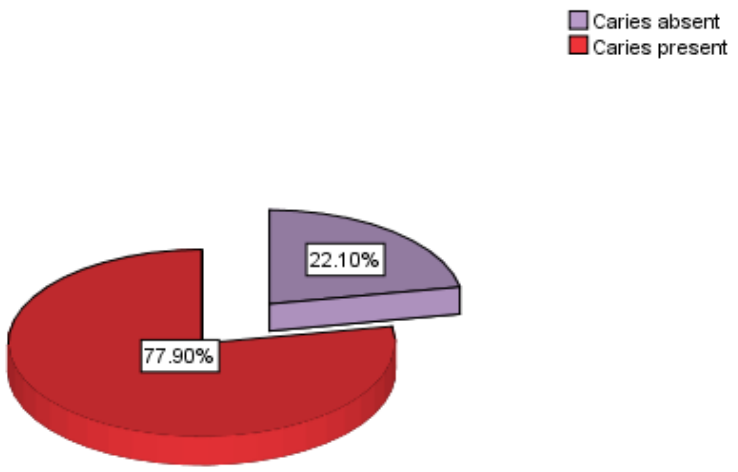

Figure 7: The prevalence of dental caries in permanent dentition by DMFT index among 6 to 12 years of age children in public health facilities of Butajira town, Ethiopia, 2023.

Girls (81%) had a higher percentage of dental caries in their permanent teeth than males (75%) (Figure 8).

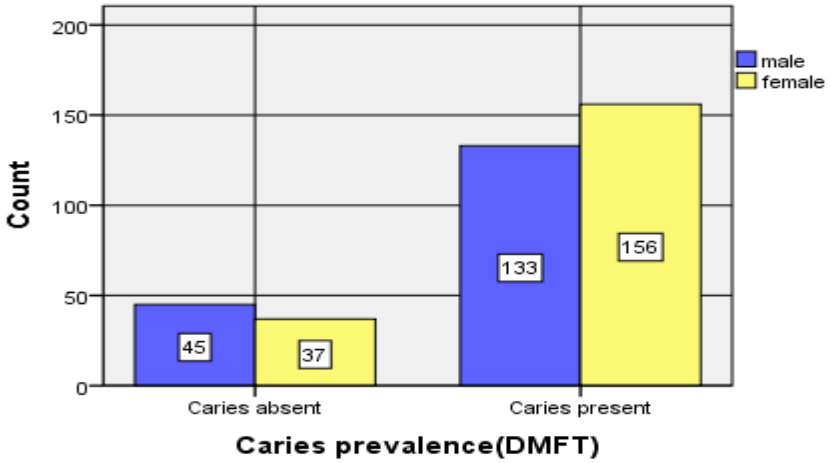

Figure 8: Gender wise prevalence of dental caries in permanent dentition by DMFT index among 6 to 12 years of age children in public health facilities of Butajira town, Ethiopia, 2023.

According to the deft index, the prevalence of dental caries among children aged 6 to 12 in the study population was 85.4% in the primary dentition (Figure 9).

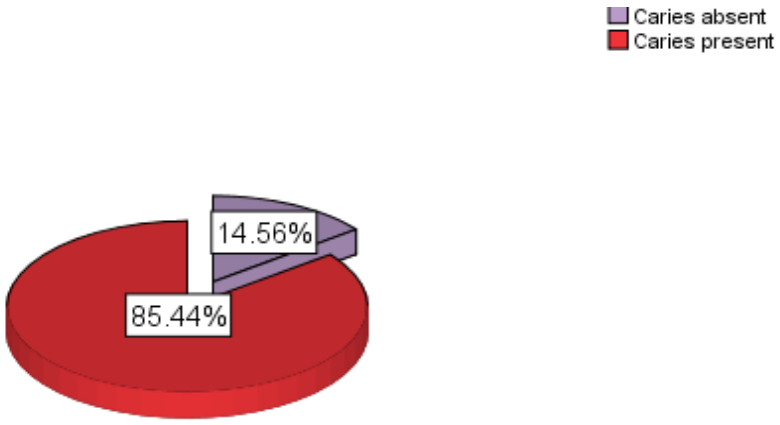

Figure 9: The prevalence of dental caries in primary dentition by deft index among 6 to 12 years of age children in public health facilities of Butajira town, Ethiopia, 2023.

More females (90%) than boys (81%) had dental caries in their primary teeth (Figure 10).

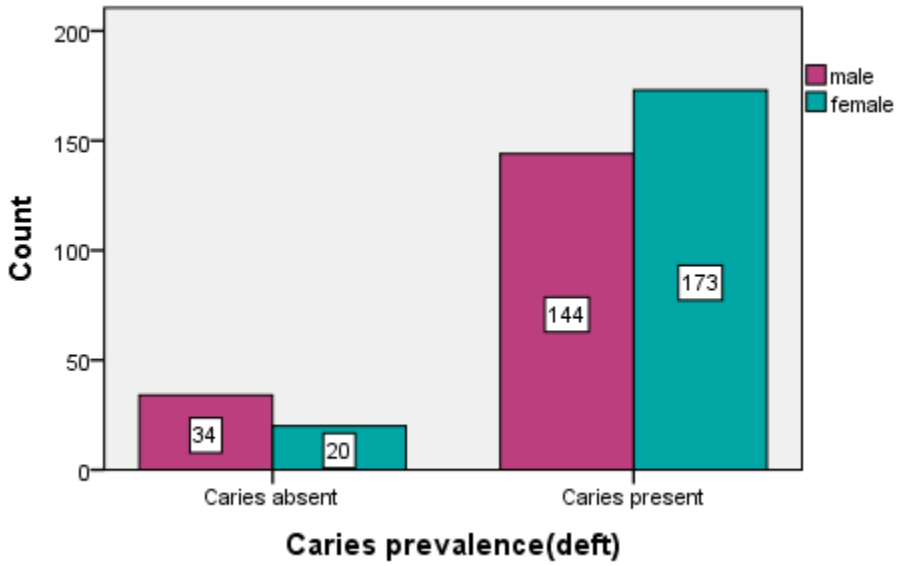

Figure 10: Gender wise prevalence of dental caries in primary dentition by deft index among 6 to 12 years of age children in public health facilities of Butajira town, Ethiopia, 2023.

5.6. Association of Parents' Knowledge, Attitude, and Practice with DMFT and deft Indices of Children

The mean DMFT index was 2.32(±1.83) among parents who had poor knowledge of oral health and 1.91(±1.68) among parents who had good knowledge of oral health. A statistically significant relationship existed between parents' knowledge of dental health and children' DMFT (P-value = 0.045) (Table 5).

The mean deft index among parents who had poor knowledge about oral health was 6.13(±3.46) whereas it was found to be 6.11(±3.27) among parents who had good knowledge about oral health. The association between knowledge of parents towards oral health and deft of the children was not statistically significant (P-value=0.975) (Table 5).

The mean DMFT index was 2.09(±1.85) among parents who had positive attitude towards their children oral health whereas it was found to be 2.32(±1.72) among parents who had negative attitude towards their children oral health. The association between attitude of parents towards oral health and DMFT of the children was statistically not significant (P-value=0.208) (Table 5).

The mean deft index was 5.87(±3.35) among parents who had positive attitude towards their children oral health whereas it was found to be 6.43(±3.45) among parents who had negative attitude towards their children oral health. The association between attitude of parents towards oral health and deft of the children was statistically not significant (P-value=0.116) (Table 5).

The mean DMFT index was 1.70(±1.62) among parents who had good practice of oral health care and 2.3(±1.82) among parents who had poor practice of oral health care. The association between practice of parents towards oral health care and DMFT of the children was statistically significant (P-value=0.009) (Table 5).

The mean deft index was 5.15(±3.25) among parents who had good practice of oral health care of their children and 6.36(±3.40) among parents who had poor practice of oral health care of their children. The association between practice of parents towards oral health care of their children and deft of the children was statistically significant (P-value=0.006) (Table 5).

Table 5: Association of parents' Knowledge, Attitude, and Practice score with DMFT and deft indices of children in public health facilities of Butajira town, Ethiopia, 2023.

Scores	Indices	
Knowledge	**DMFT**	**Deft**
Poor	2.32(±1.83)	6.13(±3.46)
Good	1.91(±1.68)	6.11(±3.27)
P-value	0.045	0.975
Attitude		
Positive	2.09(±1.85)	5.87(±3.35)
Negative	2.32(±1.72)	6.43(±3.45)
P-value	0.208	0.116
Practice		
Good	1.70(±1.62)	5.15(±3.25)
Poor	2.3(±1.82)	6.36(±3.40)
P-value	0.009	0.006

5.7. Association of Parents' Overall KAP Score with DMFT and deft Indices of Children

The mean DMFT index was 2.38(±1.845) among poor group of overall KAP of parents and 1.76(±1.594) among good group of overall KAP of parents. The association between overall KAP of parents and DMFT of the children was statistically significant (P value= 0.001)(Table 6).

The mean deft index for poor group of overall KAP of parents was 6.21(± 3.4640) whereas it was found to be 5.92(±3.252) among good group of overall KAP of parents. The association between overall KAP of parents and deft of the children was statistically not significant (P value=0.452) (Table 6).

Table 6: Association of parents' Overall KAP score with DMFT and deft indices of children in public health facilities of Butajira town, Ethiopia, 2023.

KAP	DMFT	Deft
Poor	2.38(±1.845)	6.21(± 3.4640)
Good	1.76(±1.594)	5.92(±3.252)
P-value	0.001	0.452

6. DISCUSSION

It is the duty of the parents to look after their children's teeth in accordance with dentists' recommendations. Effective oral health promotion programs aimed at enhancing young children's dental health depend on knowing in-depth what parents know, think, believe, and are aware of regarding oral health. It has been found that the children's dental health is positively correlated with their parents' attitudes toward dentistry(23). Little is known about Ethiopian parents' knowledge, attitudes, and practices about their children's oral health and dental care have received little attention in Ethiopia. Therefore, this study was conducted to assess parents' knowledge, attitudes, and practices regarding their children's oral health and its influence on the dental caries status of 6–12 year old schoolchildren in Butajira town's public health facilities.

In this cross sectional study a questionnaire and indices (DMFT and deft) were used to collect data from 371 children (age group 6-12 years old) and their parents over period of 1 month. The indices used to check caries were DMFT for permanent teeth and deft for primary teeth which measured life time caries experience.

371 parents and children, with ages 6 to 12, were enrolled in the current study. Among them 48% were boys and 52% were girls. Majority (69%) of parents had poor knowledge towards their children oral health and only 31% of parents had good knowledge towards their children oral health (Figure 3). Our study was in contrast to the research done in Nepal, South Asia(25), stated that 81% of parents have a moderate level of understanding about oral hygiene, with poor knowledge (15%) and good knowledge (4%), respectively. Also the present study was in contrast with the cross-sectional studies conducted in Egypt(40) stated that, 88.5% of the study population had excellent understanding of dental hygiene and in ALERT hospital, Ethiopia, with a score of 78.2%, the parents' general understanding of dental caries was good(41). The significant variations in parents' knowledge may be due to the participants' varying levels of education in the various studies.

The majority of parents in the current study (68%) were unaware of the impact of fluoride on teeth which was similar with the study conducted in Nepal(26) 75% and in Egypt(40) 45% of parents did not know the importance of using fluoridated toothpaste whereas it was in contrast

with the studies in Riyadh city (34) 77% and in Morocco (53) 60.9% parents were aware that fluoride material prevents tooth decay.

Early dental visits for children should preferably take place before the age of one or within six months following the growth of the primary teeth, according to several independent studies and the American Academy of Pediatric Dentistry and also the American Dental Association firmly supports this recommendation(54-57). The recommendation for children's first dental visits is after the first milk tooth erupts, although around two thirds (66%) of parents were unaware of this in the present study. The present study was similar to earlier studies carried out in India(5) 70% and in Saudi Arabia(33) 78% of parents were unaware of when the child should have their first dental visit.

According to the American Dental Association (ADA), a child's permanent teeth are more likely to be healthy if his primary teeth are in good health. Children who have decay in their primary teeth are more likely to have decay in their permanent teeth(33, 57). In this study more than half (58.5%) of parents were not aware of dental caries complications related to primary teeth may affect permanent teeth which was similar with the study in (58) 67.4% of the parents were unaware that issues with primary teeth can influence permanent teeth whereas it was in contrast with the studies (59) 65% and (30) 83% of the parents aware that the permanent dentition could be impacted by issues with the primary teeth. It was also in contrast with the studies (37) (73.6%) and (41) 76.7 % of the study participants responded that having unhealthy milk teeth can cause issues as the permanent teeth erupt. All of these data indicate a lack of understanding of oral health and the requirement for adequate oral health education initiatives.

In our study a positive attitude toward their children's dental health was held by about 55.8% of parents whereas the remaining 44.2% had negative attitude (Figure 4). The investigation that was undertaken in South Africa contrasted with the current study(38) stated that the parents' attitudes toward oral health were positive in 95% of the cases. Our study was in line with the studies in Egypt(40) stated that, about 70% of the mothers had a positive outlook toward practicing good dental hygiene and in ALERT hospital, Ethiopia(41), around 72.5 % of the parents had positive attitude towards dental caries status of their children.

Depending on the child's oral health, the American Academy of Pediatric Dentistry advises regular dental visits(57). Around half (51.5%) of parents in present study thought that it is not required for parents to take their children to the dentist on a regular basis every six months which was similar with the study (42) 44% believed that regular dental exams were not necessary and it was alike with the literatures(32) 95.5%, (26) 75%, (41) (76.7%), and (27) 57.1% of parents thought that it was essential to take the child to the dentist on a frequent basis. According to the study, obstacles to regular visits may include a lack of desire, a disregard for the value of primary teeth, the expense of dental care, or the accessibility of dental offices. Therefore, it is advised to inform the parents of the value of regular dental checkups and oral health.

Only 19.9% of parents in our survey had good practices for their children's oral health, while the majority of parents (80.1%) had poor practices (Figure 5). According to a cross-sectional study done in Egypt, 52.3% of mothers practiced oral hygiene to an acceptable degree(40). Also another study conducted in ALERT hospital, Ethiopia(41), indicated that the parents' total practice scores with regard to their children were 61.8%. This discrepancy might be because of the poor knowledge of the parents in the current study.

In the present study only 52% of parents clean their children’s teeth while 48% of participants were never clean their children’s teeth. Results from the studies (38) and (41) found that 89% and 61.8 % of parents were brushed their children teeth respectively which showed relatively a better practice compared to the present study. This can be the result of parents being unaware regarding the importance of brushing teeth. In the present study the majority of participants (64.4%) used fluoride tooth paste and toothbrushes to brush the children's teeth. Results from the studies conducted previously stated that 94.8%(59), 92.6% (31), and 71.75% (33) of parents brushed their children's teeth with a fluoride toothpaste and a toothbrush which indicated that a better utilization of a toothbrush and fluoridated tooth paste compared to the present study. Dental caries was 1.56 times more likely to occur in children who did not use a toothbrush and toothpaste than in those who did(60).

Dental caries is linked to frequent sugary snacking, brushing teeth fewer than twice per day, or both. Tooth brushing frequency and dental caries are negatively correlated, but sugar consumption frequency and dental caries are positively correlated (60-62). In the present study 64% of parents provided their children with chips, chocolates and sweets. Studies conducted

before stated that 70.4% (5) and 98%(36) of parents provide the children with chips, chocolate and sweets which were in agreement with our study. Higher dmft scores in children were substantially correlated with parents who were unable to limit their children's sugar intake(60). Instead of giving children sugary snacks and candies, parents may be advised to provide them such healthy snacks.

According to the DMFT index, 78% of the study population had dental caries in their permanent teeth which was higher than the study in (5) 61.1%. Gender wise proportion of DMFT in boys was (74.7%) and in girls it was (80.8%) which was higher than the study in India(5) showed that 61% of the boys and 61.2% of girls were affected with dental caries. These differences might be because of socio-economic differences between the studies.

The mean DMFT in this study was 2.19(1.793), higher than the mean DMFT in the study from India which was 1.63(1.6)(5). According to the deft index, 85.4% of the study sample had dental caries in their primary teeth which was lower than the study in India(5) (97.8%). Gender wise proportion of deft in boys was (80.9%) and in girls it was (89.6%). In this investigation, the average deft was 6.12 (3.399) which was lower than the study in India(5)(6.6). The current investigation revealed that primary teeth had greater caries prevalence than permanent teeth. This might be explained by the permanent teeth's decreased susceptibility to dental caries. This result was in accordance with that of (5).

Total KAP score has been divided into good and poor categories for the current investigation. Each of KAP correlated with DMFT and deft index separately. In good KAP DMFT score was 1.76(±1.59) and in poor KAP DMFT score was 2.38(±1.84) showed that DMFT score was lower in good KAP than and in poor KAP which was statistically significant (P-value = 0.001). deft score was lower in good KAP 5.92(±3.25) and higher in poor KAP 6.21(± 3.46). Although there was a small difference between good and poor groups of KAP, it was not statistically significant (P-value = 0.452).

This research was consistent with systematic review studies carried out in developing nations(44) revealed that children whose parents had poorer oral health knowledge and attitudes had increased likelihood of getting dental caries.

In the current study, when KAP increased DMFT and deft score decreased which was in agreement with the study conducted in Iran(46), mothers' attitudes and knowledge had a statistically significant negative relationship with children's deft. Additionally, the current study was consistent with the research done in Egypt(40) affirmed that proper oral hygiene knowledge and practice statistically considerably increase the absence of decaying teeth.

In the current study, there was no statistically significant association between KAP and deft score (p value = 0.452) but there was a statistically significant association between KAP and DMFT score (p value = 0.001).

Limitations of study: KAP of parents of different age group, gender wise influence of parental education and parental occupation on oral health were checked but not evaluated in the current study. Additionally, the age group of children was not evenly dispersed; therefore the results may vary accordingly.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1. Conclusions

Parent's knowledge, attitude and practice are considered to be very important in taking dental care of a child since its birth. The assessment of parent KAP about their children's oral health and its influence on schoolchildren's dental caries status is a specific emphasis of the study. It has been discovered that the better the parents' attitude toward dentistry, the better their children's dental health will be.

The following conclusions were drawn from the present study.

- Using the scoring criteria, it was discovered that more than two third (69.5%) of parents showed poor KAP towards oral health, while the remaining 30.5% exhibited good KAP.
- Institution based prevalence of dental caries in children (6 to 12 years) of Butajira city in permanent teeth was 78%.
- Institution based prevalence of dental caries in children (6 to 12 years) of Butajira city in primary teeth was 85.4%.
- The mean DMFT score for the children was 2.19(±1.793).
- The mean deft score for the children was 6.12 (±3.399).
- In the current study, the children's DMFT and deft scores decreased as the parents' KAP increased.
- The association between parents' KAP and children's DMFT score was statistically significant (p-value = 0.001).
- The association between parents' KAP and children's deft score was not statistically significant (p value = 0.452).

7.2. Recommendations

Overall study findings show that parental knowledge, attitude, and behavior regarding children's oral health and dental care need to be improved through parental education programs.

- Health care professionals and community health workers must coordinate their efforts intensely in order to raise awareness among parents about preventive oral health care, dental hygiene habits, food, and feeding practices. Health education should emphasize the responsibility of parents for their children's oral health, and parents should be urged to support their children's oral hygiene practices both practically and emotionally.
- Mass media should provide continuous health education on the importance and methods of oral hygienic practice and teeth protection in children.
- Oral hygiene education should be taught in schools, and the coordinated efforts of parents, teachers, and healthcare experts can assist raise awareness among them and enhance children's dental health.
- Through enhanced oral health education and promotion initiatives, the community health service delivery sector need to be reoriented utilizing the primary healthcare principles to shift from being a curative service to a comprehensive preventive service approach.
- However, additional study is required to examine ways to increase parental involvement in oral health promotion decision-making; particularly in the area of children's oral health care and further studies are required on large sample and other parameter those are listed in limitation.

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9. ANNEXES

Annex A: English Version Questionnaire

A. Socio demographic information

Date_____

1. Child's Name: _____
2. Age of the child: _____
3. Relationship to the child: Mother ☐ Father ☐
4. Age of the mother/father: _____
5. Opd No: _____
6. Parental educational status:
   a) Illiterate☐
   b) Primary☐
   c) Secondary☐
   d) College and above☐
7. Parental occupation:

a) Farmer☐

b) Government employed☐

c) Merchant☐

d) House wife☐

e) Others☐

B. Knowledge of parents regarding oral health

1. Can health of teeth and mouth affect health of body?

   a) Yes ☐

   b) No ☐

   c) Don't know ☐

2. What is the importance of oral health compared to general health?

   a) The same importance ☐

   b) more important ☐

   c) Less important ☐

   d) Do not Know ☐

3. What is dental plaque mean?

   a) Discoloration of teeth ☐

   b) Soft deposits on teeth ☐

   c) White patches on teeth ☐

   d) Don't know ☐

4. What is the main purpose of tooth brushing?

   a) For prevention of tooth decay and gum disease ☐

   b) For achievement of cleaner and brighter teeth ☐

   c) To remove stains on teeth ☐

d) Don’t know ☐

5. What is the main cause of dental caries?

a) Bacteria ☐

b) Eating sweet food staffs ☐

c) Not brushing the teeth ☐

d) Lack of mouth rinsing after meal ☐

e) I don't know ☐

f) Others (please specify) ☐

6. Do you think dental caries can be prevented /controlled? (If yes go to question no. 7).

a) Yes ☐

b) No ☐

7. How can we prevent dental caries?

a) Brushing with tooth paste daily ☐

b) Limiting the amount of sugary foods ☐

c) Having regular dental checkup ☐

d) Do not know ☐

e) Others ☐(please specify)_____

8. How much amount of toothpaste should be placed on a brush?

a) a small pea-size ☐

b) filling the toothbrush ☐

c) half a brush ☐

d) no matter the amount ☐

9. Do you know that some toothpaste contains fluoride?

a) Yes ☐

b) No ☐

c) do not know ☐

10. What is the effect of fluoride on teeth?

a) Prevention of gum disease ☐

b) Prevention of tooth decay ☐

c) Cleaning of teeth ☐

d) Don't know ☐

11. When should be the child's first visit to the dentist?

a) After tooth decay ☐

b) When there is a toothache ☐

c) When milk teeth begin to fall ☐

d) After the first milk tooth appears ☐

12. Dental caries complications related to primary teeth may affect permanent teeth?

a) Yes ☐

b) No ☐

c) Do not Know ☐

C. Attitude of parents regarding oral health

No.	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1.	Dental treatment is as important as other health treatment.	☐	☐	☐	☐	☐
2.	With the growth of the first baby teeth, parents can begin to clean them with a piece of gauze or a clean washcloth.	☐	☐	☐	☐	☐
3.	Feeding too much sweet food to child causes tooth decay.	☐	☐	☐	☐	☐
4.	Cleaning of the child's teeth should be guided by parent?	☐	☐	☐	☐	☐
5.	Milk teeth are essential for children to chew food properly.	☐	☐	☐	☐	☐
6.	Milk teeth do not require good care as it is going to fall away.	☐	☐	☐	☐	☐
7.	It is necessary to take your child for regular dental visits every six months.	☐	☐	☐	☐	☐
8.	Visiting the dentist is only necessary only when your child experiences pain.	☐	☐	☐	☐	☐
9.	Tooth decay is passed on from milk teeth to permanent teeth	☐	☐	☐	☐	☐
10.	General body health has a relationship with oral health	☐	☐	☐	☐	☐

D. Practice of parents regarding dental health

1. Do you clean your child′s teeth?

   a) Yes ☐

   b) No ☐

2. How do you clean a child′s teeth?

   a) Toothbrush and tooth paste containing fluoride ☐

   b) Tooth brush with water only ☐

   c) Mefaqiya(twig brush) ☐

   d) Others (specify) ☐

3. How many times do you clean your child′s teeth?

   a) Once per day ☐

   b) Twice per day ☐

   c) Thrice per day ☐

   d) Occasionally ☐

4. For how long do you brush your child′s tooth?

   a. 2-3 minute ☐

   b. >2-3 minute ☐

   c. <2-3 minute ☐

5. Which brushing motion you used to brush your child's teeth

a) Vertical ☐

b) Horizontal ☐

c) Circular ☐

d) Others ☐ (please specify)

6. Do you brush the tongue of the child?

a. Yes ☐

b. No ☐

7. Do you use an appropriate size for age toothbrush for a child?

a. Yes ☐

b. No ☐

8. What type of toothpaste do you use to brush a child′s tooth?

a. Adult toothpaste ☐

b. Baby toothpaste ☐

9. Do you use mouth wash after brushing the child′s tooth?

a. Yes ☐

b. No ☐

10. When was you commenced tooth brushing for a child?

a) After all the milk tooth erupted ☐

b) When milk teeth begin to fall ☐

c) When the first milk tooth appears ☐

d) do not remember ☐

11. When do you change your child′s toothbrush?

a) Every 6 months ☐

b) every 3 months ☐

c) once the bristle frays out ☐

d) Do not now ☐

12. Do you ask your child to rinse his mouth after each meal?

a) Yes ☐

b) No ☐

13. Do you give your child sweets, soft drinks, chocolates and chips?

a) Yes ☐

b) No ☐

14. What will you do when your child′s teeth are decayed?

a) I will visit a Dentist ☐

b) I will visit a traditional healer ☐

c) I do not seek help anywhere ☐

d) Others ☐ (please specify)_____

Annex B: Amharic Version Questionnaire

ሀ. የማህበራዊ እና የስነ ህዝብ መረጃ ቀን_____

1. የልጁ ስም፡- _____
2. የልጁ ዕድሜ: _____
3. ከልጁ ጋር ያለው ግንኙነት: እናት ☐ አባት☐
4. የእናት/የአባት እድሜ፡_____
5. ኦፒዲ ቁጥር፡_____
6. የእናት/የአባት የትምህርት ደረጃ፡-

   ሀ) ማንበብና መጻፍ የማይችሉ ☐

   ለ) የመጀመሪያ ደረጃ ☐

   ሐ) ሁለተኛ ደረጃ ☐

   መ) ኮሌጅ እና ከዚያ በላይ☐
7. የእናት/የአባት ሥራ፡-

   ሀ) ገበሬ ☐

   ለ) የመንግስት ሰራተኛ ☐

   ሐ) ነጋዴ ☐

   መ) የቤት እመቤት ☐

   ሠ) ሌላ ☐

ለ. የአፍ እና የጥርስ ጤናን በተመለከተ የወላጆች እውቀት

1. የጥርስ እና የአፍ ጤንነት በሰውነት ጤና ላይ ተጽዕኖ ሊያሳድር ይችላል?

   ሀ) አዎ ☐

   ለ) አይ☐

   ሐ) አላውቅም ☐
2. ከአጠቃላይ ጤና ጋር ሲነጻጸር የአፍ እና የጥርስ ጤና ጠቀሜታ ምን ያህል ነው?

   ሀ) እኩል ጠቀሜታ አለው ☐

ለ) የበለጠ ጠቀሜታ አለው ☐

ሐ) አነስተኛ ጠቀሜታ አለው ☐

መ) አላውቅም ☐

3. የጥርስ ልማም ማለት ምን ማለት ነው?

ሀ) የጥርስ ቀለም መቀየር ☐

ለ) በጥርሶች ላይ ለስላሳ ክምችቶች☐

ሐ) በጥርሶች ላይ ነጭ ሽፋኖች ☐

መ) አላውቅም ☐

4. የጥርስ መቦረሽ ዋና ዓላማ ምንድን ነው?

ሀ) የጥርስ መበስበስ እና የድድ በሽታን ለመከላከል ☐

ለ)ንጹህ እና ብሩህ ጥርሶች እንዲኖረን ☐

ሐ)በጥርሶች ላይ ነጠብጣቦችን ለማስወገድ ☐

መ)አላውቅም ☐

5. የጥርስ መቦርቦር ዋና መንስኤ ምንድን ነው?

ሀ) ባክቴሪያዎች ☐

ለ) ጣፋጭ ምግቦችን መመገብ ☐

ሐ) ጥርስን አለመቦረሽ ☐

መ)ከምግብ በኋላ አፍን አለመጉመጥመጥ ☐

ሠ) አላውቅም ☐

ረ) ሌሎች (እባክዎይግለጹ) ☐

6. የጥርስ መቦርቦርን መከላከል/መቆጣጠር ይቻላል ብለው ያስባሉ? (አዎ ከሆነ ወደ ጥያቄ ቁጥር 7 ይሂዱ)።

ሀ) አዎ ☐

ለ) አይ ☐

ሐ) አላውቅም ☐

7. የጥርስ መቦርቦርን እንዴት መከላከል እንችላለን?

ሀ) በየቀኑ በጥርስ ሳሙና መቦረሽ ☐

ለ) የጣፋጭ ምግቦችን መጠን መቀነስ ☐

ሐ) መደበኛ የጥርስ ምርመራ/ክትትል ማድረግ ☐

መ) አላውቅም ☐

ሠ) ሌላ☐ (እባክዎይግለጹ) _____

8. በጥርስ ብሩሽ ላይ ምን ያህል መጠን የጥርስ ሳሙና መደረግ አለበት?

ሀ) ትንሽ የአተር መጠን ያህል ☐

ለ) የጥርስ ብሩሽን መሙላት ☐

ሐ) ግማሽ ብሩሽ ☐

መ) መጠኑ ምንም ይሁን ምን ችግር አይፈጥርም☐

9. አንዳንድ የጥርስ ሳሙናዎች በዉስጣቸዉ ፍሎራይድ እንደያዙ ያውቃሉ?

ሀ) አዎ ☐

ለ) አይ ☐

ሐ) አላውቅም☐

10. ፍሎራይድ በጥርሳችን ላይ ያለው ተጽእኖ (ጠቀሜታ) ምንድን ነው?

ሀ) የድድ በሽታ መከላከል☐

ለ) የጥርስ መበስበስን መከላከል ☐

ሐ) ጥርስን ማጽዳት ☐

መ) አላውቅም ☐

11. የልጆች የመጀመሪያ የጥርስ ሀኪም ጉብኝት መቼ መሆን አለበት?

ሀ) ከጥርስ መበስበስ በኋላ ☐

ለ) የጥርስ ሕመም ሲኖር ☐

ሐ) የወተት ጥርሶች መውደቅ ሲጀምሩ☐

መ) የመጀመሪያው የወተት ጥርስ ከታየ በኋላ ☐

12. ከወተት ጥርስ ጋር የተያያዙ የጥርስ ችግሮች ቋሚ ጥርሶችን ሊጎዱ ይችላሉ?

ሀ) አዎ ☐

ለ) አይ ☐ ሐ) አላውቅም☐

ሐ. የአፍ እና የጥርስ ጤናን በተመለከተ የወላጆች አመለካከት

ቁጥር	መግለጫ	በጣም አልስማማም	አልስማማም	ገለልተኛ	እስማማለሁ	በጣም እስማማለሁ
1.	የጥርስ ህክምና ልክ እንደሌሎች የጤና ህክምናዎች ጠቃሚ ነው።	☐	☐	☐	☐	☐
2.	የመጀመሪያዎቹ የሕፃን ጥርሶች ማደግ ሲጀምሩ ወላጆች ጥርሱን በንጹህ ጨርቅ ማጽዳት መጀመር አለባቸው።	☐	☐	☐	☐	☐
3.	ለልጆች ጣፋጭ ምግቦችን ከመጠን በላይ መመገብ የጥርስ መበስበስን ያስከትላል።	☐	☐	☐	☐	☐
4.	ልጆቹ ጥርሳቸውን በሚቦርሹበት ጊዜ ወላጆች ልጆቻቸውን ማየት/መርዳት አለባቸው።	☐	☐	☐	☐	☐
5.	የወተት ጥርሶች ምግብን በአግባቡ ለማኘክ ለልጆች በጣም አስፈላጊ ናቸው።	☐	☐	☐	☐	☐
6.	የወተት ጥርሶች ስለሚወድቁ ጥሩ እንክብካቤ አያስፈልጋቸውም።	☐	☐	☐	☐	☐
7.	በየስድስት ወሩ ለመደበኛ የጥርስ ክትትል ልጅዎን መውሰድ አስፈላጊ ነው።	☐	☐	☐	☐	☐
8.	የጥርስ ሀኪምን መጎብኘት አስፈላጊ የሚሆነው ልጅዎ የጥርስ ሕመም ሲሰማው ብቻ ነው።	☐	☐	☐	☐	☐
9.	የጥርስ መበስበስ/መቦርቦር ከወተት ጥርሶች ወደ ቋሚ ጥርሶች ይተላለፋል።	☐	☐	☐	☐	☐
10	የአጠቃላይ የሰውነት ጤና ከአፍ እና የጥርስ ጤና ጋር ግንኙነት አለው።	☐	☐	☐	☐	☐

መ. የአፍ እና የጥርስ ጤናን በተመለከተ የወላጆች ልምምድ

1. የልጅዎን ጥርስ ያጸዳሉ?

   ሀ) አዎ ☐

   ለ) አይ ☐

2. የልጅዎን ጥርስ ለማጽዳት ምን ይጠቀማሉ?

   ሀ) ፍሎራይድ ያለበት የጥርስ ሳሙና እና የጥርስ ብሩሽ ☐

   ለ) የጥርስ ብሩሽ በውሃ ብቻ ☐

   ሐ) መፋቂያ ☐

   መ) ሌላ☐ (ይግለጹ)

3. የልጅዎን ጥርስ ስንት ጊዜ ያጸዳሉ?

   ሀ) በቀን አንድ ጊዜ ☐

   ለ) በቀን ሁለት ጊዜ ☐

   ሐ) በቀን ሦስት ጊዜ ☐

   መ) አልፎ አልፎ ☐

4. የልጅዎን ጥርስ ለምን ያህል ጊዜ ይቦርሻሉ?

   ሀ. 2-3 ደቂቃ ☐

   ለ. > 2-3 ደቂቃ ☐

   ሐ. <2-3ደቂቃ ☐

5. የልጅዎን ጥርስ ለማጽዳት የትኛውን የመቦረሽ ዘዴ/እንቅስቃሴ ይጠቀማሉ?

   ሀ) ወደ ላይ እና ወደታች ☐

   ለ) አግድም ☐

   ሐ) በክብ እንቅስቃሴ ☐

   መ) ሌላ☐ (እባክዎይግለጹ)

6. የልጅዎን ጥርስ በሚቦርሹበት ጊዜ ምላሱን ይቦርሻሉ?

ሀ. አዎ ☐

ለ. አይ ☐

7. ለልጅዎ ለእድሜው ተመጣጣኝ/ተገቢ የሆነ የጥርስ ብሩሽ መጠን ይጠቀማሉ?

ሀ. አዎ ☐

ለ. አይ ☐

8. የልጅዎን ጥርስ ለማጽዳት ምን ዓይነት የጥርስ ሳሙና ይጠቀማሉ?

ሀ. የአዋቂ የጥርስ ሳሙና ☐

ለ.የሕፃን የጥርስ ሳሙና☐

9. የልጅዎን ጥርስ ከቦረሹ በኋላ አፉን እንዲጉመጠመጥ ይነግሩታል?

ሀ. አዎ ☐

ለ. አይ ☐

10. የልጅዎን ጥርስ መቦረሽ የጀመሩት መቼ ነበር?

ሀ) ሁሉም የወተት ጥርሶች ካደጉ በኋላ ☐

ለ) የወተት ጥርሶች መውደቅ ሲጀምሩ ☐

ሐ) የመጀመሪያው የወተት ጥርስ ማደግ ሲጀምር ☐

መ) አላስታውስም ☐

11. የልጅዎን የጥርስ ብሩሽ መቼ ነው የሚቀይሩት?

ሀ) በየ 6 ወሩ ☐

ለ) በየ 3 ወሩ ☐

ሐ) የብሩሹ ጫፍ ሲያረጅ/ሲያልቅ ☐

መ) አላውቅም☐

12. ልጅዎን ምግቡን ከበላ በኋላ አፉን እንዲጉመጠመጥ ይነግሩታል?

ሀ) አዎ ☐

ለ) አይ ☐

13. ለልጅዎ ጣፋጭ ምግቦችን፤ለስላሳ መጠጦችን፤ቸኮሌት እና ቺፕስ ይሰጣሉ?

ሀ) አዎ ☐

ለ) አይ ☐

14. የልጅዎ ጥርስ ሲበሰብስ/ሲቦረቦር ምን ያደርጋሉ?

ሀ) ወደ ጥርስ ሀኪም እሄዳለሁ☐

ለ) የባህል ህክምና ባለሙያ ዘንድ እሄዳለሁ☐

ሐ) የትም ቦታ እርዳታ አልፈልግም/ምንም አላደርግም☐

መ)ሌላ☐(እባክዎይግለጹ)_____

Annex C: Clinical Examination Form

(Adopted from WHO Oral Health Assessment Form - 2013)

Name of the child: _____

Age_____

Sex: Male ☐ Female ☐

Opd no: _____

DMFT INDEX / deft INDEX:

		55	54	53	52	51	61	62	63	64	65		
17	16	15	14	13	12	11	21	22	23	24	25	26	27

		85	84	83	82	81	71	72	73	74	75		
47	46	45	44	43	42	41	31	32	33	34	35	36	37

Dental status	**Primary teeth**	**Permanent teeth**
Sound (Normal)	A	0
Decayed	B	1
Filled & Decayed	C	2
Filled & No Decay	D	3
Missing due to caries	E	4

Decayed permanent tooth (DT) =_____ Missing permanent tooth due to caries (MT) =

Filled permanent tooth (FT) =_____ DMFT SCORE= (DT+MT+FT) =_____

Decayed primary tooth (Dt) =_____ Extracted primary tooth due to caries (eT=) _____

Filled primary tooth (fT)=_____ deft SCORE=(Dt+eT+fT) =_____

Annex D: Operational Definitions for Dentition Status:

0(A)-Sound tooth: A tooth is recorded as sound if it shows no evidence, of treated or untreated clinical caries.

1(B) - Decayed tooth: Caries is recorded as present when a lesion in a pit or fissure, or on a smooth tooth surface, has a detectable softened floor, undermined enamel or softened wall. A tooth with a temporary filling should also be included in this category, in case of any doubt; caries should not be recorded as present.

2(C) - Filled tooth with decay: A tooth is scored as filled with decay when it contains one or more permanent restorations and one or more areas that are decayed.

3(D) - Filled tooth with no decay: A tooth is considered to be filled without decay when one or more permanent restorations are present and there is no secondary (recurrent) caries or other area of the tooth with primary caries.

4(E) - Tooth missing due to caries: This score is used for permanent teeth that have been extracted because of caries.

Dental caries: Clinical diagnosis of dental caries or presence of fillings in at least one permanent or primary tooth, or evidence of missing a permanent tooth due to caries.

Past caries: - past caries is manifested either by a filling or by loss of the tooth due to dental caries.

DMF index: - is the average number of permanent teeth per person which are decayed (D), missing because of caries (M), or filled (F). It is a quantitative expression of the life-time caries experience of the permanent teeth. In the calculation of the DMF index, the numerator is the total number of DMF teeth and the denominator is the total number of persons examined.

def index: - is a quantitative expression of primary teeth which are decayed (d) or filled (f). In calculation of the index the numerator is the total number of primary teeth which have clinical caries or which have been filled. The denominator is the total number of persons examined.