SCHOOL OF PUBLIC HEALTH

COLLEGE OF HEALTH SCIENCES

UNIVERSITY OF GHANA

KNOWLEDGE AND ATTITUDE TOWARDS ORAL HYGIENE AND FEEDING PRACTICES AMONG PARENTS WITH 24-71 MONTH OLDS VISITING THE KORLE-BU TEACHING HOSPITAL.

BY

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THIS DISSERTATION IS SUBMITTED TO SCHOOL OF PUBLIC HEALTH, UNIVERSITY OF GHANA IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A

MASTER OF PUBLIC HEALTH (MPH) DEGREE

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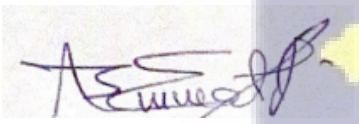
STUDENT DECLARATION

I, THEODORA EWURA ESI EGHAN hereby declare that apart from specific references made which have been duly acknowledged, this research proposal is my own independent work undertaken under the supervision of Dr. Emmanuel Asampong. I also declare that no part of this proposal has not been submitted for the award of any degree in this University or any University elsewhere. The final report from this study will be submitted to the School of Public Health,

University of Ghana in partial fulfilment for the awarding of a Master of Public Health degree

Theodora Ewura Esi Eghan 27TH April, 2023

(STUDENT) (Date)



DR. Emmanuel Asampong 27th April, 2023

(ACADEMIC SUPERVISOR) (Date)

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I am most grateful to God for seeing my through this program. His grace and mercies have led the way all through to completion.

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DEDICATION

I dedicate this project to God first and foremost as everything I am and have is by His grace and mercies. I also dedicate this to my family and friends for their immense support and help in diverse ways.

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LIST OF ABBREVIATIONS

Abbreviation	Meaning
AAP	American Association of Pedodontics
AAPD	American Academy of Pediatric Dentistry
dmfs/t	Decayed, missing and filled surfaces/teeth in primary teeth
deft	Decayed, extracted and filled primary teeth due to caries
DMFS/T	Decayed, missing and filled surfaces/teeth in adult teeth
ECC	Early Childhood Caries
KAP	Knowledge, Attitude and Practices
KBTH	Korle-Bu Teaching Hospital
NHIS	National Health Insurance Scheme
LMIC's	Low and Middle Income Countries
MS	*Streptococcus mutans*
NCD	Non- Communicable Disease
pH	Potential of Hydrogen
WHO	World Health Organization

ABSTRACT

Background: The prevalence of Early Childhood Caries (ECC) is increasing especially in low and middle-income countries. The prevalence of caries amongst 3-13-year-olds in Ghana is 40.4% and in children, caries progresses faster than in adults and its effects traverse just the oral health, affecting the general well-being and growth of the child.

Study Aim: The aim of this study is to identify the knowledge and attitude towards oral hygiene and feeding practices among parents with of 24 – 71 month olds

Methods: The study employed a descriptive cross-sectional study design based on a structured questionnaire administered to randomly sampled parents visiting the pediatric out-patient department (O.P.D) of the Korle-Bu Teaching Hospital with their 24 – 71 month olds. Data collected was analyzed using STATA version 17. The Pearson chi square test was used in assessing associations between categorical variables($P<0.05$) and logistic regression model used in determining factors that influenced the knowledge of parents as well as the practices they employed for their 24-71month olds.

Results: Out of 239 participants for this study, 46.9% demonstrated poor knowledge on Early Childhood Caries, 89.1% had never taken their children to see a dentist and out of the 20 whose children complained of toothache, 9 (42. 9%) did nothing about it. Only 31% of parents employed good oral hygiene and feeding practices for their children.

Conclusion: Most parents demonstrated poor knowledge, attitude and practices towards the oral health of their children. Ghanaian parents seldom sent their children to see the dentist even when they had toothache. It is recommended that children's oral health campaigns be organized and channeled through T.V/Radio and already established child welfare and vaccination clinics.

CHAPTER ONE

INTRODUCTION

1.1 Background

Dental caries is a multifactorial, transmissible, infectious oral disease brought about by the complex interaction of cariogenic oral flora with fermentable dietary carbohydrates on the tooth surface over time (Boushell et al., 2019). Caries in deciduous teeth in children is referred to as Early Childhood Caries (ECC) (Garg & Garg, 2015). The American Academy of Pediatric Dentistry (AAPD) define Early Childhood Caries as one or more decayed (cavitated or non-cavitated), missing (due to caries) or filled tooth surfaces in milk teeth in a child that is less than 6 years old ('Policy on Early Childhood Caries (ECC)', 2016). In the 1960's, Keyes found three primary factors required for the development of caries and this was termed Keyes' triad (Garg & Garg, 2015). These three primary factors are host (tooth), substrate (diet) and microorganisms. A modification of the Keyes' triad was proposed by Newbrum where time factor was added as it takes time for these three factors to interact and cause clinically detectable signs and symptoms of dental caries,(Newbrun, 1983). These factors interact in the following ways as shown in Figure 1 to cause caries.

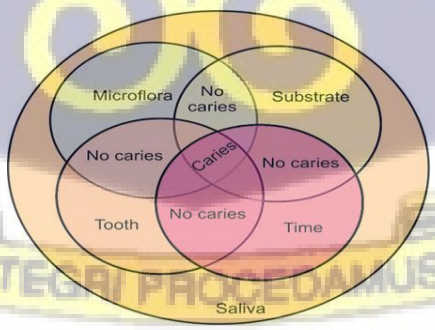

Figure 1: Caries Ring adapted from the book, Principles and Practices of Pedodontics (Shetty, 2012)

Of all four primary factors required to be present for dental carries to develop, substrate (diet) is the factor over which the individual has most control. Almost all individuals are birthed with teeth and have microflora in their saliva. Morphological changes in the tooth structure arising from genetic modifications may increase or decrease one's susceptibility to tooth decay, whereas microflora is acquired both vertically and horizontally from mothers to children and also via intimate sharing (Damle et al., 2016). However, the individual has control over what diet they consume and for how long they expose their dentition to these diets and this is moderated by their oral hygiene and feeding practices. A critical pH level of 5.5 has been defined as the pH below which enamel dissolution takes place. Research conducted by Robert Stephan and Miller in 1943 showed that saliva pH dropped to below 5.5 within the first 3 minutes of sucrose rinse and could remain low up to 40 minutes post sucrose rinse after which oral pH returns to normal (Sroda, 2017). At low ph levels (below the critical pH), demineralization of enamel begins to take place and when sustained below the critical pH for long periods, cavitation of tooth occurs. Frequent consumption of fermentable carbohydrates, mainly simple sugars and poor oral hygiene practices has thus been proven to be significantly associated with increased risk of dental caries by increasing the total time period at which oral pH is below the critical pH level (Mobley et al., 2009). This can be manifested in children by frequent consumption of sugary snacks in between meals and repeated use of sippy or no-spill cups containing sugary beverages. Also, during night time bottle/breast feeding and bed time snacking, where children usually fall asleep whilst feeding or right after feeding thereby leaving food stuck on their teeth for the entire night periods. Brushing less than twice daily and with inappropriate dentifrices also increases exposure time of teeth to food eaten during the day. Children below 6 years however, highly depend on their parents to make these choices and

therefore parental knowledge on oral health and Early Childhood Caries greatly influence the oral hygiene and feeding practices of these children.

1.2 Problem Statement

Early Childhood Caries is said to be the commonest non-communicable disease (NCD) among children in the world. According to the Global Burden of Disease Study in 2017, more than 530 million children globally have dental caries of the primary teeth and a gradual increase in the prevalence of Early Childhood Caries has been noticed in low and middle income countries (World Health Organization, 2019). Early Childhood Caries as researched in 193 United Nations' countries had a prevalence of 23.8% in children under 36 months old and 57.3% in children aged between 36 to 71months (El Tantawi et al., 2018). In African countries such as South Africa, Uganda and Nigeria, the prevalence of early childhood caries are 44.94%, 48.6% and 21.2% respectively (Kimmie-Dhansay et al., 2022; Musinguzi et al., 2019; Olatosi et al., 2015). In a recent study done in Ghana by Peters et al. amongst children aged 3 to 13 years, the prevalence of caries was 40.4% in Accra and 38.9% in rural Kpando (Peters et al., 2022). Across the globe, parental knowledge on appropriate oral hygiene and feeding practices for children below 6 years from various studies has been varying. A recent study in Qatar by Al-Jaber found that majority of the parents had fair knowledge on ECC (Al-Jaber et al., 2022) whereas in India, about 51.8% of the parents had the opinion that a child should first visit a dentist only after he/she has experienced a toothache (Patil et al., 2022). Majority of mothers (88.5%) in study in Egypt had good knowledge (Salama et al., 2020) and in Nigeria, only 38% of the mothers knew that cariogenic bacteria was transmissible to their child. 50.9% of them were of the impression that baby teeth will eventually fall off and therefore needed no treatment

(Olatosi et al., 2020). Despite studies in Ghana proving high prevalence of ECC amongst children, few studies have been conducted to ascertain the level of knowledge of parents on oral health and ECC as well as their attitude towards the oral health of their children and the oral hygiene and feeding practices they employ for their children. The effects of ECC on the general wellbeing of the child are devastating and it increases the risk of carious lesions in the succedaneous (permanent) teeth. ECC causes pain and discomfort to the child and can lead to abscesses thereby compromising the ability of the child to eat and sleep as well as engaging in activities (World Health Organization, 2019). This study therefore aims at assessing parental knowledge and attitude influencing oral hygiene and feeding practices of 24 – 71 month olds.

1.3 Research Questions

This study seeks to address the following research questions:

1. What is the level of knowledge of parents on Early Childhood Caries?
2. What is the attitude of parents towards their children's oral health ?
3. What are the oral hygiene and feeding practices of 24 – 71 month olds?

1.4 Objectives of the Study

1.4.1 General objective

To assess knowledge and attitude towards oral hygiene and feeding practices among parents with 24 to 71 month olds.

1.4.2 Specific objectives

The specific objective of this study includes:

1. To assess the knowledge of parents on Early Childhood Caries
2. To determine parental attitude towards their children's oral health.
3. To identify the oral hygiene and feeding practices of 24- 71 month olds.

1.5 Significance of Study

Few studies in Ghana have reported on knowledge and attitude of parents towards the oral health of their 24-71 month olds. A recent study conducted in 2022 showed a high prevalence of caries, 40.4% in Accra and 38.9% in rural Kpando. (Peters et al., 2022). However, very little have been done in knowing the level of knowledge of parents on oral health influencing the oral hygiene and feeding practices of children which are key factors in Early Childhood Caries development. Meanwhile, the oral health status of children falling within the classification of Early Childhood (0-6years) is highly dependent on their parents as they are the decision makers with regards to the children's health related behaviors. A study to therefore assess the knowledge and attitude of parents on Early Childhood Caries and its influences on the oral hygiene and feeding practices of their children would help identify the oral health knowledge gaps present. This will aid in designing tailored oral health education programs and inculcating them into mother and child healthcare programs. Regular oral health screening and oral health education can also be introduced into primary healthcare, including community-based health interventions by policy makers. Preschoolers may be seen more frequently by primary health care staff for vaccinations and consultation for other systemic conditions as compared to oral

health professionals. Frequent oral health screenings and education for mothers on appropriate feeding and oral hygiene instructions will aid in prevention, early detection, diagnosis and treatment of ECC. The national burden of ECC will decrease, there will be healthier children and the economic burden on family and society will be reduced.

1.6 The Conceptual Framework

Dietary habits and oral hygiene practices have been identified as key factors responsible for the caries experience of children especially habits such as late night feeding/snacking, in between sleep eating, frequent use of bottles containing milk/juice and lack of late night brushing. In Ghana, high numbers of early childhood caries are still being recorded despite these established modifiable factors found in literature (Peters et al., 2022). These high numbers may be due to a lack of knowledge of the parents on these risk factors, hence poor practices or poor practices employed by these parents despite knowledge of these risk factors.

The Knowledge, Attitude and Practice survey model (Du Monde, 2011) proposed by Medecins Du Monde has been adapted for this study. The model proposes that the knowledge of an individual on a related health topic influences his/her attitude towards the health issue of interest and also the practices the individual employs with regards to the health issue.

In this adapted model, the knowledge of the parents on the etiology, risk factors, signs and symptoms, consequences and prevention of Early childhood caries influences their attitude towards their child's oral health as well as the oral hygiene and feeding practices they employ for their children. These practices, whether good or bad influence the oral health and by extension, the general wellbeing of the child.

The knowledge, attitude and practices of parents are all informed by other factors such as socioeconomic status of parents and parents' personal oral hygiene practices and sources of information on oral care such as antenatal clinic, child welfare clinic, oral health screening outreaches, radio/TV health programs, family and friends.

Knowledge of a health behavior according to the KAP model is considered beneficial however, it does not automatically mean that that knowledge will be translated into practice or behavior and as such, we seek to determine the knowledge of parents on ECC and how it influences their practices employed for their dependent children.

This is a diagrammatic representation of the adapted model.

Figure. 2.0 Conceptual Framework

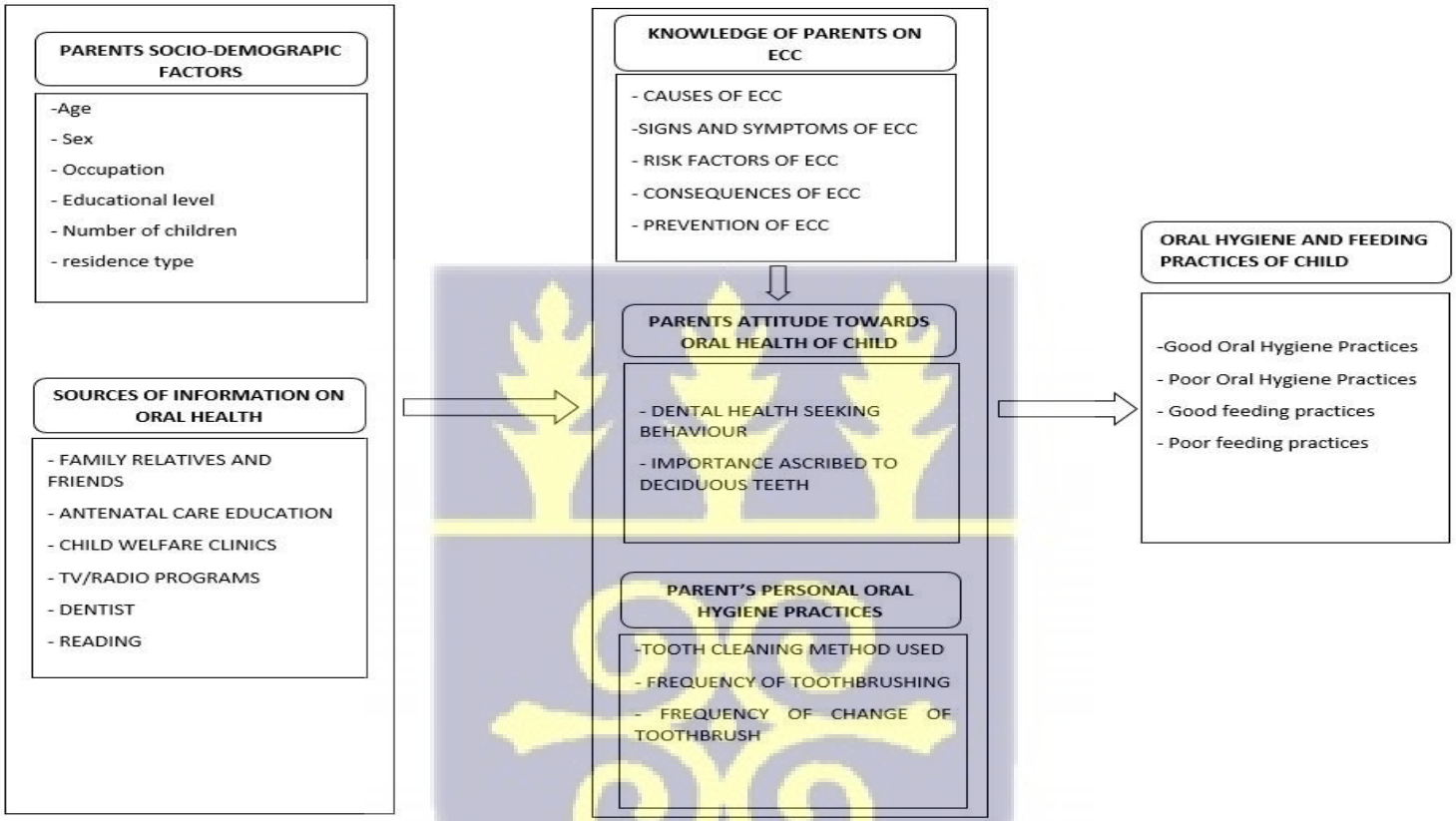

Figure 2: Conceptual framework showing the knowledge and attitude towards oral hygiene and feeding practices among parents with 24-71month olds.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

A review of literature on Early Childhood Caries and its relationship with oral hygiene and feeding practices is presented in this chapter. It will also highlight the knowledge and attitude of parents on early childhood caries as well as the practices employed by parents towards the oral health of their children.

2.2 Overview

The first tooth in a child's mouth appears at about age 6 months and the complete set of primary teeth is reached at about 24-30 months of age (World Health Organization, 2019). Primary teeth aid in feeding, speech formation and guidance of permanent teeth into eruption and ideally should remain through to about age 13years when all primary teeth would have been replaced with their succedaneous ones (adult teeth). However, due to the high prevalence of Early Childhood Caries, many children lose their primary teeth before their stipulated time thereby affecting their feeding, their speech as well as the eruption and alignment of their permanent replacements (Anil & Anand, 2017). A systematic review conducted in South Africa in 2022 showed the pooled prevalence of ECC from twenty-one studies as 44.94% (Kimmie-Dhansay et al., 2022) and for Uganda and Nigeria, similar studies on prevalence of ECC showed a prevalence of 48.6% and 21.2% respectively(Musinguzi et al., 2019; Olatosi et al., 2015). In Ghana in 2022, Peters in his study found caries prevalence as 40.4% in Accra and 38.9% in rural Kpando among 3-13 year olds (Peters et al., 2022). These findings corroborate the claims of increasing prevalence of ECC in LMIC's.

For many countries, oral diseases are a huge health burden and affect people of all ages. Approximately 3.9 billion people worldwide are plagued with oral diseases with the most

prevalent being untreated caries with a global prevalence of 3.5% for all ages combined (Richards, 2013). Caries in milk teeth that have been left unattended to is the 10th most prevalent condition affecting 9% of the world population (Richards, 2013) and its prevalence in low and middle income countries is rapidly increasing alongside changing diet and lifestyle (Phantumvanit et al., 2018).

2.3 Early Childhood Caries

The presence of one or more primary teeth that have been affected by caries or white spots, lost primary teeth due to caries, or restored primary tooth surfaces in a less than six year old child is termed Early Childhood Caries (World Health Organization, 2019).

Early Childhood Caries can be classified into mild, moderate and severe ECC based on the severity of the ECC as proposed by Wyne in 1999 (Goswami, 2020). ECC is termed mild to moderate when there are isolated carious lesions or presence of smooth surface caries in maxillary (upper) incisors with or without caries in the molars (Goswami, 2020). Depending on age of child and stage of diseases, ECC may be classified into moderate-sever and severe. In moderate to severe cases, caries is present on the labial or palatal surfaces of maxillary central incisors with or without caries in the molars wheras, ECC is termed severe if caries affects almost all teeth including the mandibular (lower) incisors (Goswami, 2020).

Dental caries in children under six years is said to progress more rapidly as compared to caries in older children and adults and this has been attributed to the anatomy of the deciduous tooth structure (World Health Organization, 2019). It is therefore important to prevent ECC from forming in the first place.

The etiological factors of caries evidenced in literature are cariogenic microorganisms, fermentable carbohydrates and susceptible tooth surface, all in the presence of time (Anil &

Anand, 2017; Çolak et al., 2013; Goswami, 2020). These factors may be present concurrently to initiate ECC and cause its progression.

However, fortunately, almost all risk factors associated with ECC are modifiable such as dietary and oral hygiene practices as well as dental service utilization (World Health Organization, 2019). Caries is preventable by altering the modifiable factors associated with it.

2.4 Risk factors of Early Childhood Caries

Major risk factors associated with ECC may be classified into microbiological factors, dietary factors and environmental factors (Çolak et al., 2013). However, other contributing factors such as parental literacy, socio-economic status of the family and access to dental care have also been identified (Anil & Anand, 2017) .

Microbiological factors include the level of *Streptococcus mutans* (MS) colonization in the oral cavity of the child. High levels of MS is associated with increased risk of ECC (Pidamale et al., 2012). Damle in 2016 found that a mother's act of sharing spoon with child is significantly associated with the mean MS count of the child ($P < 0.001$). Also, there was evidence of vertical transmission of MS from mother to child as 77.2% of mother-child pairs had very identical MS groups after AP-PCR fingerprinting profile analysis (Damle et al., 2016).

Dietary habits also significantly influence the development of ECC. Frequent consumption of sugary diets, frequent snacking and sending children off to bed with sugary drinks/beverages, predispose the child to early MS colonization (Paglia et al., 2016). In the case control study done by Paglia in 2016, significant differences in the amounts and duration of consumption of sugary drinks and beverages such as tea, fruit juic and soft drinks as well

as consumption of candies and pacifiers dipped in sugar or honey were identified in cases (those with ECC) and controls (those without ECC) (Paglia et al., 2016). The American Association of Pedodontics (AAP) has recommended that infants should not be given juices from bottles or covered cups as this allows them consume juice for long periods throughout the day ('Policy on Early Childhood Caries (ECC)', 2016). Also, they recommend that children between 1 and 6 years old should not be allowed to consume more than 6 ounces (approximately 180mls) per day ('Policy on Early Childhood Caries (ECC)', 2016). Severino et al. in 2021 in her study found out that 93.55% of her sample population who had consumed sugary drinks in the past month had tooth decay or dmft > 0 (Severino et al., 2021) and this was prevalent amongst those who had consumed more than 350mls of sugary drinks in the past month. Olatosi in his study in Nigeria found out that out of the 55 children who were bottle fed at night, 51% of them had ECC as compared to 13% of those who were not bottle fed at night who had ECC (Olatosi et al., 2015). A statistically significant association was found between night time feeding and ECC occurrence (Olatosi & Sote, 2014).

Environmental risk factors of ECC such as oral hygiene factors which includes age of commencement of tooth brushing, the method of teeth cleaning adopted, frequency of tooth brushing and parental supervision of tooth brushing play a significant in influencing caries experience in children. Activities that directly transfer saliva from parent/adult to children such as sharing of spoon, tasting of baby food off the spoon before feeding it to child, cleaning dropped pacifier or toffee by mouth, cleaning baby's mouth with saliva or mouth to mouth kissing increase risk of child developing caries as caries causing bacteria is transferred (Damle et al., 2016; Goswami, 2020). Finally, the properties of one's saliva such as the amounts produced, the consistency of it and its buffering capacity also influences one's risk of caries development. (Kimmie-Dhansay et al., 2022).

Other extra oral factors such as socio-economic status, educational level of parents and access to dental services also play a role in ECC development. Peres found in his study that the children in the most disadvantaged and intermediately disadvantaged areas had 1.96 and 1.45 times higher mean dmfs and 1.53 and 1.43 times higher mean DMFS than the children who lived in the most advantaged areas respectively (Peres et al., 2019). He also noticed that dental visits was the highest contributing factor (30.3%) to the inequalities in primary dental caries experienced in his respondents, followed by sugar consumption (20.7%), then household income (20.0%) and lastly water fluoridation (15.9%) (Peres et al., 2019).

2.5 Knowledge of Parents on Early Childhood Caries.

Children generally do not have the decision making power and therefore do not choose what to eat, when to eat them and how to care for their oral hygiene. Children under six years are highly dependent on their parents for survival and day to day activities including feeding, clothing, oral and personal hygiene. The level of knowledge of their parents therefore on Early Childhood Caries, its causes and how to prevent it directly affects the child and his/her oral health.

Recent study conducted in 2022 in Qatar by Al-Jaber found that majority of the parents had fair knowledge on ECC, 46.1% for female parents and 52.5% for male parents. The gender of the parents was the only variable found to be significantly associated with knowledge on ECC ($p = 0.001$). Mothers had more correct answers than fathers, a significant finding which was similar to that found in a study conducted in Kuwait (Ashkanani & Al-Sane, 2013). Almost 34% of the mothers had good knowledge, while only 8.2% of fathers had good knowledge. For poor knowledge, 20% of mothers and 40% of fathers were found to have poor knowledge on ECC. Questions most parents answered wrongly included those concerning the amount of toothpaste needed for brushing (67%), the appearance of white

lines or white spots on the surfaces of primary teeth as the first signs of tooth decay (52%), and the possibility of transfer of germs that cause tooth decay from mother to child (54%) (Al-Jaber et al., 2022).

Among the study population in a study conducted in India, 51.8% of the parents responded that a child should firstly visit the dentist only after he/she has suffered a toothache, 18.4% felt that should occur after tooth decay and 15.4% responded that the first visit to the dentist should be after the eruption of the first milk tooth. 52.2% of the parents had the opinion that dental caries required treatment. Overall, 23.6% of the parents had good knowledge, attitude and practices based on the scoring criteria employed. 64.9% demonstrated fair knowledge, attitude and practices and 11.5% showed poor knowledge, attitude and practices (Patil et al., 2022).

In a study in the United Arab Emirates on "oral health knowledge, attitude, and practices of Sharjah mothers of preschool children", 58.2% of the mothers were found to have adequate knowledge on oral health. They found that poor knowledge and practices were significantly associated with the education and occupation of the mothers. Thirty-six (36%) of the mothers were not aware of the role of fluoride in toothpaste and only 0.8% of the population could correctly identify all items that could lead to tooth decay (Mahmoud et al., 2017).

BaniHani conducted a study in Jordan in 2020 titled "maternal knowledge on early childhood caries and barriers to seek dental treatment". He found that 82% of the mothers had poor knowledge on the causes and prevention of ECC, 11% had no knowledge and 7% had good knowledge. Fifty-nine (59%) of the mothers disagreed to mothers avoiding sharing of food with their children and 19.2 % responded false to soft drinks being able to cause tooth decay (BaniHani et al., 2021).

Recent study in Egypt conducted on the knowledge, attitude and practices of mothers regarding their primary school children's oral hygiene found that approximately 88.5% of

their participants had good knowledge. Almost 96% of the respondents knew that teeth brushing is protective against caries, 85% and 80% knew that sugary diet and soft drinks are risky for dental caries development respectively. Majority (82.6%) of participants answered that adequate teeth brushing is twice daily and approximately 76% of mothers had knowledge of various forms of toothpaste that could be utilized for their child's oral care (Salama et al., 2020)

In Sale, Morocco, a study conducted by Chala et al. in 2018 on the knowledge, attitude and self-reported practices of mothers towards the oral health of their children reported that 86.3% of mothers had no knowledge of the possibility of medications taken during pregnancy and childhood affecting teeth development in the child. A whopping 95.9% of the mothers did not know that cleaning of teeth should commence at eruption however, 60.9% of the mothers were knowledgeable in the benefits of fluoride in caries prevention (Chala et al., 2018).

In Lagos, Nigeria, a West-African country, a study was conducted to assess maternal knowledge, dental service utilization and self-reported oral hygiene practices in relation to the oral health of preschool children. 299 mothers representing 89.5% of the study population identified correctly that sweets and sugary snacks had the potential of causing dental caries. Most (78.4%) responded that dental caries was preventable however, only 38% thought cariogenic bacteria were transmissible from them to their child. About half (50.9%) of them thought baby teeth will eventually fall off and therefore did not require treatment. (Olatosi et al., 2020)

In Pikine in Senegal, a study conducted to assess mother's oral health literacy and children's oral health status revealed that 56.5% of the mothers had low oral health literacy (OHL) (Dieng et al., 2020).

2.6 Attitude of parents towards the oral health of their children

Few parents (31.2%) in Al-Jaber's study in Qatar had good attitude towards the oral health of their children aged below 6 years, 56.3% and 12.4% of parents were found to have fair and poor attitude toward the oral health of their preschoolers respectively. Majority (96.4%) of the respondents felt the maintenance of the child's oral health was the responsibility of the parents and 61.7% of the parents responded that taking the child for dental check-up should be right after eruption of first tooth. Educational level was found to be significantly associated with attitudes ($p = 0.05$). Parents with higher educational levels (university or higher degrees) had significantly higher percentages of good attitudes, 37% and 30% respectively as opposed to parents with preparatory or less education (18%) (Al-Jaber et al., 2022).

Mahmoud Noura conducted a study in the United Arab Emirates and found that 99% of the Sharjah mothers demonstrated excellent attitude towards their children's oral health despite only 58.2% of them having adequate knowledge on oral health. More than half of the mothers (59.5%) had taken their children to visit the dentist and 44.1% of these mothers reported taking their children to see the dentist every 6 months. A few mothers (39.7%) reported taking their children to see the dentist only when they had problems (Mahmoud et al., 2017).

In Patil's study conducted in India, almost 23% of the parents did not know the importance of the milk teeth and about 49% of them said "milk teeth are important for eating, talking and maintaining the space in mouth until permanent teeth erupts"(Patil et al., 2022). Majority (93.8%) of parents were of the opinion that dental treatments were equally important as other health treatments and only 6.2% thought otherwise (Patil et al., 2022).

253 mothers in Sale, Morocco, representing 53.3% of a study population believed that deciduous teeth are not necessary and that more care should be taken for adult teeth (Chala et al., 2018) and similarly, in Dieng's study in Senegal, only 45.1% of the mothers reported that oral health is important (Dieng et al., 2020). Chala reported that 45.7% of the mothers

reported a previous children's use of dental services out of which 46.9% of them were in response to emergency dental need. A few (13.7%) of them sought treatment for a toothache (Chala et al., 2018).

Olatosi in his study in Nigeria reported that 78.1% of the mothers had never visited the dentist and the commonest reason reported was due to the absence of toothache (61.4%). Some mothers (37.4%) reported that their child had had a previous experience of toothache however, 52% of these mothers self-prescribed, 21.6% of them used local remedies, 12% sought the help of non-dental health workers, only 12% sought treatment from a dentist and 2.4% of the respondents did nothing (Olatosi et al., 2020).

Salama reported in her study in Egypt that approximately 70% of the mothers had positive attitude towards their primary school child's oral hygiene (Salama et al., 2020).

2.7 Oral hygiene and feeding practices employed by Parents towards their children.

In Al-Jaber's study on knowledge, attitude and practices of parents on early childhood caries conducted in Qatar, it was found that generally, the parents/primary caretakers of children under age 6 years employed good practices towards their children's oral health. About 60.3% of the parents had good practices whereas 33.4% of them employed fair practices and only 6.1% employed poor practices. Majority (96.8%) of respondents agreed that balanced diet was necessary for their child's oral health however, 40.1% of the respondents disagreed to the possibility of breast feeding /bottle feeding during bed-time harming their child's teeth (Al-Jaber et al., 2022)

Mahmoud in his study in United Arab Emirates found that out of 383 mothers, only 20% followed good practices toward their children's oral health. With regards to commencement of cleaning of child's teeth only 19.6% of the mothers started cleaning their child's teeth after

eruption of first milk tooth. More than half (60.1%) of the mothers reported brushing their children's teeth twice a day and 37.3% of mothers changed their chidren's toothbrush every 2-3 months. Some 3.4% of mothers reported changing their child's toothbrush once the bristles fray out. (Mahmoud et al., 2017)

Out of 504 respondents in a study in India, 51% of the parents had not made a previous dental visit with their children whereas 49% of them had had previous visits to the dentists. Only 35.7% of the parents sent their children for regular dental check-up. Patil and his colleagues also found that 70.4% of the parents offered sweets, soft drinks, chocolates and chips to their children (Patil et al., 2022).

About half (57%) of the mothers in a study in Egypt were found to have satisfactory practices towards the oral hygiene of their primary school children (Salama et al., 2020).

In a study conducted in Nigeria, most of the mothers (72.1%) cleaned their preschooler's mouth only once daily, 25.4% of the mothers cleaned their child's teeth two or more times daily and 2.4% of the mothers reported not brushing their child's teeth every day. In a similar study in Senegal, less than half of the parents (46.7%) reported of their children brushing their teeth (Dieng et al., 2020). Significant number of mothers (76.9%) in Olatosi's study reported using toothbrush and toothpaste for their child, 12.6% used cotton wool and the remaining used other tools such as chewing stick, glycerin, salt and others. 83.2% of the mothers cleaned their preschooler's mouth themselves, 11.5% of them reported the child doing it on their own, 0.9% of the children had their mouths cleaned by other relatives and 1.5% of them were helped by nannies. 228 mothers representing 68.3% of the respondents utilized poor practices for the oral hygiene of their child based on the cut off values obtained from good practices (Olatosi et al., 2020).

In Ghana, minimal studies have been conducted on oral hygiene and practices employed by parents for their children however, a study conducted by Ndanu in 2015 on the oral hygiene

practices among 9-15 year olds revealed that almost all the participants (96.6%) brushed in the mornings but only 37.7 % of them brushed at night. More than half (61.6%) of the children reported snacking at school and 46.6% of them also snacked at home. Majority (44.6%) of them had biscuits and cakes, proven to be cariogenic. (Ta et al., 2015). A similar study conducted in 2019 at the Assin –North Municipality of Ghana showed that majority of the children (65.59%) brushed once daily. Snacks found to be consumed most frequently by the children were fresh fruits (91.04%), biscuits (89.61%), sugar containing gum (89.61%), soft drinks (74.19%), tea with sugar (73.83%) and sweets/candy (70.61%) (Karikari, 2019)

2.8 Parents personal oral hygiene practices influencing oral hygiene practices employed towards their children.

A study conducted in rural India in 2020 showed that maximum participants, 85.6% parents and 81.4% children, brushed their teeth once daily. Most mothers and children had similar brushing techniques where 89.4% of the parents and 87.3% of the children brushed their teeth in the horizontal direction. More parents (18) reported to change their toothbrush in more than a year as compared to children (4) (Kumar et al., 2020).

In a study conducted by Olatosi in Nigeria, most mothers (65.3%) reported cleaning their own mouths only once daily with a toothbrush and fluoridated toothpaste (84.4%). Similarly, 76.9% of mothers reported cleaning their child's mouth only once daily with toothbrush and fluoridated toothpaste. Majority (83.2%) of the mothers reported cleaning their child's mouth by themselves (Olatosi et al., 2020).

2.9 Sources of information on oral health.

In the study conducted by BaniHani in Jordan, almost two thirds of the mothers, 363 representing 60.5% had received some dental education. 208 of these mothers representing

57.3% received education mainly through media and 155 (42.7%) by the dentist (BaniHani et al., 2021).

Chala in his study in Morocco found out that the main sources of information on oral health and oral care as reported by mothers attending maternal and child's unit were family members and other mothers. Dentists and pediatricians were reported in less than 10% of the cases (Chala et al., 2018)

Relatives (72.3%) and friends (20.1%) were reported as the major sources of information on their children's oral hygiene by mothers in a study conducted in Egypt. Only 5.1% of them reported radio and T.V as their sources (Salama et al., 2020).

A study in Nigeria found that 58.7% of the mothers had received some form of oral health education in this distribution: 23.1% from the electronic media, 22.1% from a dentist, 9.6% from a doctor or nurse and 1.9% each from printed media and school (Oredugba et al., 2014).

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter expands on the approach and strategies employed to answer the research question. It includes the study design, study site, study population, inclusion and exclusion criteria, sample size calculation, sampling technique and data collection procedure, study variables, data collection tools, data analysis and ethical clearance

3.2 Study Design

A quantitative approach using a descriptive cross-sectional study design was employed in conducting this study. Data on the knowledge and attitude of parents from varying backgrounds towards the oral hygiene and feeding practices of their 24-71month olds was collected within a specific time period. This design enabled the collection of all the information in that specific point in time.

3.3 Study Site

The Korle- Bu Teaching Hospital is the third biggest referral centre in Africa and the leading tertiary hospital in Ghana. It has over 2,000 beds, 21 clinical and diagnostic departments and three Centers of Excellence (*The Korle Bu Way*, n.d.). Korle-Bu is located in the Ablekuma South Metropolitan District in the country's capital. It serves people from near and far. Innhabitants of its immediate environs including Korle-Gonno, Korle-Dudor, Mamprobi, Lartebiokorshie, Jamestown, Chorkor and others utilize the services of Korle-bu as well as clients from all sub metros in the Greater Accra region, other regions of Ghana and some West African Countries such as Burkina-Faso, Togo, Benin and Nigeria (*The Korle Bu Way*, n.d.). This affords a good mixture of clients from varying socio-economic classes and walks

of life. One of the specialist services run by KBTH is the Child Health services. The Child health department runs seven sub units including a Pediatric out patient department (O.P.D). The pediatric O.P.D is divided into the acute care outpatient department and six specialty clinics including neurodevelopmental clinic, asthma clinic, diabetes and endocrine clinic, cardiac clinic and HIV clinic, sickle cell clinic and the neonatal follow up clinic (*Child Health Sub-BMC*, n.d.). The study will be conducted at the Pediatric O.P.D where an average of 1100 children are seen monthly of which about 530 are children between ages 24-71months. This study site has been selected due to the cosmopolitan nature of patients who access it as well as the relatively high numbers that patronize the facility.

3.4 Study Population

Parents together with their children who are visiting the Pediatric out-patient department (O.P.D) of the Korle-bu Teaching Hospital for primary healthcare services were our study population.

3.5 Selection Criteria

3.5.1 Inclusion Criteria.

The study included all parents with 24-71month olds visiting the pediatric out-patient department (O.P.D) of the Korle-Bu teaching hospital for primary healthcare services.

3.5.2 Exclusion Criteria.

The study excluded parents of 24 – 71 month olds who did not live with the children or who were not the primary care givers of the child.

3.7 Sample Size Determination

Yamen's formula was used in determination of sample size. At the paediatric OPD, approximately 530 children aged between 24-71 months visit the clinic for health services

within a month. As the study intended to use a month for the data collection, the study population consisted 530 relatives of children aged between 24-71 months. The Yamen's formula was then appropriate to calculate the sample size given the formula below;

$n = \frac{N}{1+Ne^2}$ (Yamane, 1967).

Where N denotes the study population (i.e 530), e is the expected margin of error (i.e 5%)

The sample size after calculation summed up to 228. The study further adjusted for 5% non-response rate, giving a minimum total sample of 239.

3.7 Sampling Technique

Simple random sampling was employed in this study. Data was collected over an estimated 1 month, a sample frame was generated from the records at the pediatric O.P.D every day. An average daily attendance of 25 was recorded of children aged 24-71 months, thus the study population per day. With a sample size of 239 and a data collection period of 1 month (22 days), an average number of 11 participants was required daily. From the sampling frame, a simple random sampling technique was adopted to sample participants for the study. An opportunity was given to the next participant if a potential participant refused.

3.8 Study Variables

3.8.1 Dependent Variable:

Oral hygiene and feeding practices employed for the 24 – 71 months old children

3.8.2 Independent Variable:

- Socio-Demographic characteristics of parents
- Sources of information on oral health
- Knowledge of Parents on ECC
- Attitude of Parents towards oral health of children

- Parent's personal oral hygiene practices

3.9 Data Collection Tool

A structured questionnaire was employed in this study to collect data from respondents. The questionnaire was divided into 6 parts including sociodemographic characteristics, knowledge of parents on ECC, attitude of parents towards oral health of their children, oral hygiene and feeding practices employed by parents for their children, Parent's personal oral hygiene practices and their sources of information on the oral health of their children. Participants who had challenges reading and writing were assisted by the researcher and research assistants.

3.10 Data Processing and Analysis

The questionnaire comprised of six parts asking about sociodemographic characteristics, knowledge, attitudes, personal parent practices, practices employed by parents for their children and sources of information of parents. A univariate analysis of background characteristics was conducted and reported in frequencies and percentages. Knowledge on early childhood caries was created as a composite variable from 10 variables. For each variable, there were right answer and wrong answers. For each correct answer, a score of 1 was assigned and 0 if otherwise. Thus, a scale from 0 to 10 was created, 0 being the lowest score and 10 being the highest score. The Shapiro-Wilk test was used to test for normality of the knowledge scores. The test yielded a p-value of 0.00001 signifying the scale was not normally distributed. Therefore, the median [7] was used as the cut off value to distinguish between poor knowledge (scores below the median [0-6]), fair knowledge (score of 7) and good knowledge (scores from 8-10). The same preamble was used to generate a composite variable to measure the oral hygiene and feeding practices of the children as employed by the parents. For this composite variable, 7 variables were used. A score of 1 was assigned to

individuals who had responses depicting good practices and 0 to their counterparts. With this, a scale of 0 to 7 was also generated. The scale was also subjected to the Shapiro-Wilk test for normality and it yielded a p-value of 0.99993 which indicated the distribution of the oral hygiene and feeding practices of the children scale was normally distributed. Thus, the mean value (2.97 approximated to 3.0) was used to categorize the scale into poor child oral hygiene and feeding practices (0-2), fair child oral hygiene and feeding practice (3) and good child oral hygiene and feeding practice (4-7). Parents personal oral hygiene practices was also constructed as a composite variable from four variables; a score of 1 for good practice and 0 for poor practice. A scale of 0-4 was generated to measure parental oral hygiene practices. A Shapiro-Wilk test for normality produced a p-value of 0.16754 indicating the distribution was normally distributed. Hence, the mean of the scale (2.2 approximated to 2.0) was used as a cut-off to categorize the scale into poor oral health practices (0-1), fair oral health practice (2) and good practices (3-4).

Chi-square/Fisher's Exact tests where appropriate were used to determine the relationship between socio-demographic characteristics, child oral hygiene and feeding practices, parents' oral hygiene practices and knowledge on childhood caries. P-values less than 0.05 were considered statistically significant. Multivariate logistic regression was used to determine factors associated with knowledge on early childhood caries. Based on this, a dichotomous variable was created "0" (inadequate knowledge) and "1" (adequate knowledge). The outcome of interest was adequate knowledge. Similarly, a multivariate logistic regression was also used to predict factors associated with child oral hygiene and feeding practices. A dichotomous variable was created "0" (poor child oral hygiene and feeding practices) and "1" (good child oral hygiene and feeding practices) The outcome of interest was good child oral hygiene and feeding practices.

Strengths of association between independent variables and adequate knowledge as well as independent variables and good child oral hygiene and feeding practices were determined using crude odds ratio. Variables with p-value of <0.05 in unadjusted logistic regression model (COR) were considered for inclusion into the multivariate logistic regression analyses, adjusted logistic regression (AOR). P-values less than 0.05 were considered statistically significant.

3.11 Ethical Consideration

The researcher ensured all ethical protocols were followed by seeking ethical approval, obtaining informed consent from participants, ensuring confidentiality and anonymity and proper storage and usage of data collected.

3.11.2 Ethical approval

Ethical approval was obtained from the Institutional Review Board of the Korle-Bu Teaching Hospital (ID NO. KBTH-STC/IRB/000208/2022) and this was shown to the Head of Department of Child Health as well as eligible participants. This gave them the confidence in the study being conducted and put their minds to rest.

3.11.3 Informed consent

Parents were informed of the nature of the study as well as the potential risks and benefits of the study. Written consent was sought after answering all questions they had concerning the study. Questionnaire was then distributed.

3.11.4 Confidentiality and anonymity

No identifying information was gathered during the data collection and all data gathered was kept confidential and not discussed with others.

3.11.5 Right to refuse and withdrawal

Participation in the study was entirely voluntary and participants had the right to refuse answering of any of the questions they were uncomfortable with and they could choose to withdraw from the study at any time they were unwilling to continue without penalty. Refusal to participate did not affect the healthcare or medical care of their children.

3.11.6 Data storage and usage

Participants were assured of the confidentiality of their information and its utilization solely for academic purposes. Data gathered was kept privately and only accessible by the research team.

3.12 Benefits and Risks

This study will help evaluate the current oral hygiene and feeding practices of preschool children adopted by their parents. Essential modifications and gaps in oral health knowledge will be addressed. Furthermore, it will help identify platforms or avenues through which oral health education could be channeled to reach the masses. There were no risks to study participants.

3.13 Compensation

Children whose parents consented to participating in the study were given incentives such as Nataraj pencils, toy cars, toy bikes and toy rings. Also, parents were given brief 2 minutes oral health education talks after filling the questionnaire.

3.14 Conflict of interest

There was no conflict of interest.

3.15 Funding source

The research was funded solely by the researcher.

3.16 Dissemination of findings

The report of this study will be disseminated at public health conferences and to policy makers to incorporate oral health education at antenatal clinics, mother and child welfare clinic and other pediatric health centers. Manuscripts will also be developed from the results of this study and published in journals for usage by other researchers.

3.17 Quality Control

The following measures were put in place to ensure quality and validity of this study and its findings:

- Through the collaboration with a lead member of the department of pediatric dentistry, the questions were set.
- The face validity of the questionnaire was established by experts in the related field by giving a draft of the questions to some authorities in the discipline of pedodontics

to evaluate the relevance and usefulness of the questions to achieving the set study objectives. The questions were then be concluded based on their input.

- The questionnaire was pre-tested among parents at the pediatric dentistry department to assess for answerability, sequence and appropriateness of questions for the main study.
- Regular monitoring by the researcher at the data collection site to address participants concerns with questionnaire was done.
- Only the research team members had access to the data

CHAPTER FOUR

RESULTS

The results of the study will be presented in this chapter. Data obtained from the study participants were analyzed with reference to the study objectives and findings are as below.

4.1 Sociodemographic characteristics

This study involved two hundred and thirty-nine parents/caregivers of children aged 24-71 months and their socio-demographic characteristics are summarized in Table 1 below. Most (81.6%) of the participants were female with more than half (50.2%) aged 30-39 years. Majority were married (77.0%). There was variation in residence type. Regarding education, few (3.4%) had no formal education while the. remaining had attained various levels of education More of the participants were informally employed (47.7%). Participant children were of varying ages between 24 months to 71 months and majority (52.7%)were males (Table 1).

Table 1. Sociodemographic characteristics of participants

Characteristic	Frequency	Percentage
Parent gender		
Female	195	81.6
Male	44	18.4
Parent age (years)	**Mean (SD)= 36.9 (±8.2)**	
< 30	43	18.0
30-39	120	50.2
40-49	62	25.9
40+	14	5.9
Marital status		
Single	35	14.6
Married	184	77.0
Widowed/Divorced/Separated	20	8.4
Residence type		
Apartments/Flats	67	28.0
Compound House	99	41.4

Semi-Detached / Detached Houses	73	30.6
Education		
No formal education	8	3.4
Basic school (up to junior high school)	75	31.4
Senior high school	61	25.5
Tertiary Education (University, Technical/Vocational)	79	33.1
Higher education (Masters, PhD, Post-Doctorate)	16	6.7
Occupation		
Unemployed	37	15.5
Formal sector	88	36.8
Informal sector	114	47.7
Number of children below 6 years		
1	145	60.7
2	82	34.3
3	12	5.0
Child gender		
Female	113	47.3
Male	126	52.7
Child age (months)	**Mean(SD) = 44.7(±14.9)**	
24-35	65	27.2
36-47	69	28.9
48-59	39	16.3
60-71	66	27.6

4.2 Knowledge on early childhood caries

Parents/caregivers' knowledge on childhood caries was also assessed in this study (Table 2). Most (82.4%) of the participants provided the right response on whether decay in baby teeth can affect the adult teeth of children. Additionally, almost all (90.8%) correctly stated sugary food increased the risk of a child developing caries and 90.4% correctly stated tooth brushing helps to prevent tooth decay. However, 84.1% incorrectly reported white spots on the surface of the teeth might be early signs of tooth decay and 94.1% also stated incorrect responses about the best time to give snacks to children. Furthermore, 76.2% incorrectly answered the question about children's toothpaste not necessarily containing fluoride (Table 2). Overall, 46.9% of the participants had poor knowledge on early childhood caries, 41.0% had fair knowledge and only 12.1% had good knowledge (Figure 3).

Table 2 Parental knowledge on childhood caries

Questions	Incorrect n(%)	Correct n(%)
Decay in baby teeth can affect the child's adult teeth	42(17.6)	197(82.4)
White spots/lines on the surface of teeth may be early signs of tooth decay	201 (84.1)	38(15.9)
Sweets/sugary foods increase your child's risk of developing caries	22(9.2)	217(90.8)
The best time to snack is in-between meals	225(94.1)	14(5.9)
Sending children off to bed with a bottle containing beverage (milo, juice) can be harmful to their teeth	52(21.8)	187(78.2)
Germs that cause tooth decay can be transmitted from parent to child by kissing on the lips	54(22.6)	185(77.4)
Germs that cause tooth decay can be transmitted from parent to child by parent chewing food before giving it to child	45(18.8)	194(81.2)
Tooth brushing helps prevent tooth decay	23(9.6)	216(90.4)
Tooth brushing should commence immediately when child's teeth begins erupting	64(26.8)	175(73.2)
Baby's toothpaste must not necessarily contain fluoride	182(76.2)	57(23.8)

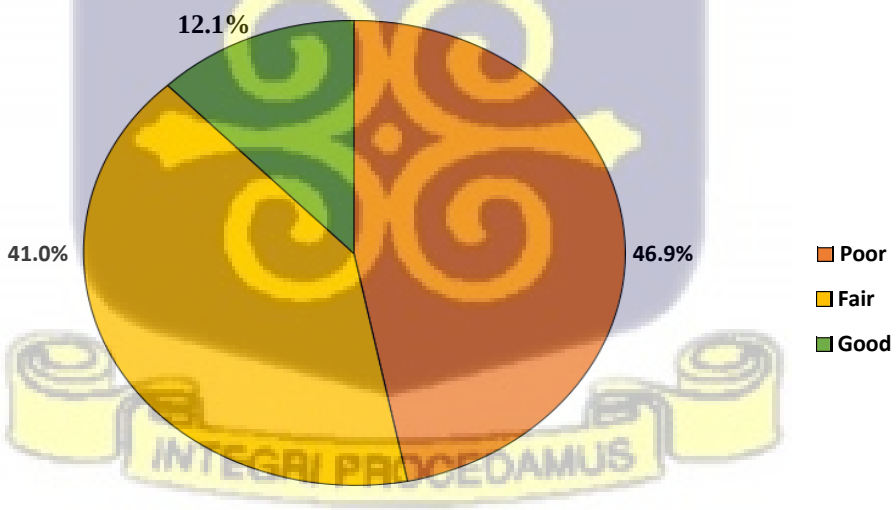

Figure 3: Overall Parental knowledge on childhood caries

4.3 Factors associated with knowledge on early childhood caries

The Pearson's chi-square test was used to assess the association between covariates and knowledge on early childhood caries. Residence type (p=0l025), education (p=0.025), occupation (p=0.011), child oral hygiene and feeding practices (p=0.002) and parental dental practices (p=0.029) were significantly associated with knowledge on early childhood caries. The percentage of good knowledge on early childhood caries was significantly higher among parents who lived in apartments/flats compared to other parents in other residence types. Also, the proportion of parents with good knowledge on early childhood caries was significantly higher among parents with tertiary education compared to other levels of education (Table 3). Furthermore, formally employed parents had high proportion of good knowledge compared to unemployed and informal sector workers. Finally, parents/caregivers with good child oral hygiene and feeding practices and good personal dental practices had higher proportions of good knowledge on childhood dental caries.

A logistic regression model was used to predict factors associated with knowledge on early childhood caries (Table 3). The model predicted child oral hygiene and feeding practices and parental dental practices to be significant factors associated with knowledge on early childhood caries. Parents with fair (AOR: 2.07; 95% CI= 1.07-3.98, p=0.030) and good (AOR: 2.68; 95% CI= 1.26-5.73, p=0.011) oral hygiene and feeding practices for their children were more likely to have adequate knowledge on early childhood caries compared to those with poor oral hygiene and feeding practices for their children. Furthermore, parents/caregivers with good dental practices were almost three times more likely to have adequate knowledge on early childhood caries compared to those with poor dental practices. (AOR: 2.76; 95% CI= 1.11-6.84, p=0.028

Table 3: Factors associated with knowledge on early childhood caries among parents/caregivers

	Knowledge on early childhood caries				Unadjusted Model	Adjusted Model
	Poor n(%)	Fair n(%)	Good n(%)	p-value-X^2	COR(95% CI) p-value	AOR (95% CI) p-value
Parent gender						
Female	96(85.7)	79(80.6)	20(69.0)	0.110	1	
Male	16(14.3)	19(19.4)	9(31.0)		1.69(0.86-3.33)0.126	
Parent age (years)						
< 30	20(17.9)	18(18.4)	5(17.2)		1	
30-39	52(46.4)	50(51.0)	18(62.1)	0.815	1.14(0.56-2.29)0.719	
40-49	33(29.5)	24(24.5)	5(17.2)		0.76(0.034-1.67) 0.500	
40+	7(6.3)	6(6.1)	1(3.4)		0.87(0.26-2.91)0.821	
Marital status						
Single	15(13.4)	12(12.2)	8(27.6)		1	
Married	84(75.0)	79(80.6)	21(72.4)	0.087	0.89(0.43-1.85)0.761	
Widowed/Divorced/Separated	13(11.6)	7(7.1)	0(0.0)		0.40(0.13-1.26) 0.119	
Residence type						
Apartments/Flats	29(25.9)	25(25.5)	13(44.8)		1	
Compound House	55(49.1)	34(34.7)	10(34.5)	0.025*	0.61(0.33-1.14)0.123	
Semi-Detached / Detached Houses	28(25.0)	39(39.8)	6(20.7)		1.22(0.62-2.41)0.554	
Education						
No formal education	7(6.3)	1(1.0)	0(0.0)		1	1
Basic school	41(36.6)	31(31.6)	3(10.3)		5.80(0.67-49.76) 0.109	5.48(0.48-61.83) 0.169
Senior high school	27(24.1)	27(27.6)	7(24.1)	0.027*	8.81(1.02-76.42)0.048*	9.51(0.83-108.51) 0.070
Tertiary Education	31(27.7)	33(33.7)	15(51.7)		10.84(1.26-92.85) 0.030*	9.52(0.86-105.19) 0.066
Higher education	6(5.4)	6(6.1)	4(13.8)		11.67(1.13-120.13) 0.039*	10.22(0.79-132.69) 0.075
Occupation						
Unemployed	17(15.2)	18(18.4)	2(6.9)		1	
Formal sector	32(28.6)	38(38.8)	18(62.1)	0.011*	1.49(0.68-3.24)0.319	

Informal sector	63(56.2)	42(42.9)	9(31.0)		0.69(0.33-1.45)0.326	
Number of children < 6 years						
1	71(63.4)	58(59.2)	16(55.2)	0.854	1	
2	36(32.1)	34(34.7)	12(41.4)		1.22(0.71-2.11) 0.464	
3	5(4.5)	6(6.1)	1(3.4)		1.34(0.41-4.44) 0.629	
Child gender						
Female	48(42.9)	53(54.1)	12(41.4)	0.212	1	
Male	64(57.1)	45(45.9)	17(58.6)		0.72(0.43-1.19) 0.200	
Child age (months)						
24-35	27(24.1)	27(27.6)	11(37.9)		1	
36-47	37(33.0)	24(24.5)	8(27.6)	0.470	0.61(0.31-1.21) 0.164	
48-59	21(18.7)	15(15.3)	3(10.3)		0.61(0.27-1.36) 0.225	
60-71	27(24.1)	32(32.7)	7(24.1)		1.02(0.51-2.06) 0.942	
Child oral hygiene and feeding practices						
Poor	53(47.3)	22(22.5)	8(27.6)	0.002*	1	1
Fair	34(30.4)	40(40.8)	8(27.6)		2.49(1.33-4.67) 0.004*	2.07(1.07-3.98) 0.030*
Good	25(22.3)	36(36.7)	13(44.8)		3.46(1.79-6.69) <0.0001*	2.68(1.26-5.73) 0.011*
Parental dental practices						
Poor	22(19.6)	8(8.2)	1(3.4)		1	1
Fair	41(36.6)	34(34.7)	9(31.0)	0.029*	2.56(1.05-6.22) 0.038*	2.27(0.93-5.58) 0.071
Good	49(43.7)	56(57.1)	19(65.5)		3.74(1.59-8.81) 0.003*	2.76(1.11-6.84) 0.028*

4.4 Parental attitude towards children's oral health

Most parents (63.2%) disagreed to the statement "adult teeth are more important than baby teeth" (Table 4) however, 62.3% agreed it was not necessary to treat baby teeth when they develop cavities because they will fall out anyways. About 26.4% of parents indicated otherwise in this question and 9.2% were not sure. Many (89.1%) of the parents indicated that their children had not visited the dentist before while only 10.9% reported ever sending their children to the dentist. Among those whose children have ever visited the dentist, the common reasons for dental visits were routine dental check-up (40.0%), dental emergencies (24.0%) and toothache (16.0%). Furthermore, only 8.4% of the parents/caregivers reported their children ever complaining of toothache. Out of this proportion, 33.3% visited a dentist when their child complained, 42.9% did nothing about the children's toothache and 9.5% got medication from a pharmacy whilst another 9.5% used local remedies.

Table 4: Attitude of parents/caregivers toward the oral health of their children

Statement	Frequency	Percentage
Adult teeth are more important than baby teeth.		
Agree	69	28.9
Disagree	151	63.2
Not Sure	19	7.9
It is not necessary to fill or treat baby teeth when they develop cavities because they will fall out anyways		
Agree	149	62.3
Disagree	63	26.4
Neutral	5	2.1
Not Sure	22	9.2
Has your child visited the dentist before?		
No	213	89.1
Yes	26	10.9
If yes, for what reason did your child visit the dentist?		
Dental emergencies including falls and swellings	6	24.0
Routine dental check-up	10	40.0
Toothache	4	16.0
Other dental problems	5	20.0

Has your child complained of toothache before?		
No	219	91.6
Yes	20	8.4
If yes, what did you do when your child complained of toothache?		
Got medications from a pharmacy	2	9.5
Nothing	9	42.9
Used herbal medication	1	4.8
Used other local remedies	2	9.5
Visited a dentist	7	33.3

4.5 Oral hygiene and feeding practices of children

This study also assessed the oral hygiene and feeding practices of children in this study (Table 5). Only 25.9% of the parents/caregivers reported cleaning their child's teeth every night and only 5.4% correctly responded that their children had snacks at meal times during the day. Majority (75.5%) of parents did not commence tooth brushing for their children immediately their first tooth erupted and 73.2% of parents gave their children more than the recommended less than 180mls of sugary drinks/juices per day. However, majority of parents (88.7%) reported changing their children's toothbrush in 3 months or less and 70.3% of parents did not send their children off to bed with a beverage or snack. Overall, only 31% of parents practiced good oral hygiene and feeding practices for their children (Figure 4).

Table 5: The Oral Hygiene And Feeding Practices Of 24- 71 Month Olds.

	Frequency	Percentage
How often do you clean your child's teeth at night?		
Every night	**62**	**25.9**
Never	31	13
Once a while	85	35.6
Some nights	61	25.5
What do you use in cleaning your child's teeth?		
Children's toothbrush and adult's toothpaste	101	42.4
Children's toothbrush and children's toothpaste	**133**	**55.6**
Others, eg; charcoal and toothbrush, wet towel with or without toothpaste	5	2.0
How often do you change your child's toothbrush if he/she uses one?		
Every 3 months	**97**	**40.6**
Every 6 months	20	8.4
Less than 3 months	**115**	**48.1**
More than 6 months	6	2.5
At what age did you start brushing your child's teeth?		
After age 1 year	94	39.3
After eruption of first baby tooth	**58**	**24.3**
Before age 1 year	86	36
Not yet	1	0.4
At what times does your child snack during the day?		
At bed time.	5	2.1
At meal times	**13**	**5.4**
In-between meals	221	92.5
How much juice/sugary drinks does your child consume in a day?		
Approximately 250 mls (eg. 1 box of Kalypo)	120	50.2
Less than 180mls (eg. less than 1 box of juvita)	**50**	**20.9**
More than 250 mls (eg. more than 1 box of Kalypo)	55	23
None	14	5.9
Did you in the past or currently send your child off to bed with a beverage/snack (eg Milo, cerelac, milk) ?		
No	**168**	**70.3**
Yes	71	29.7

Correct answers are highlighted.

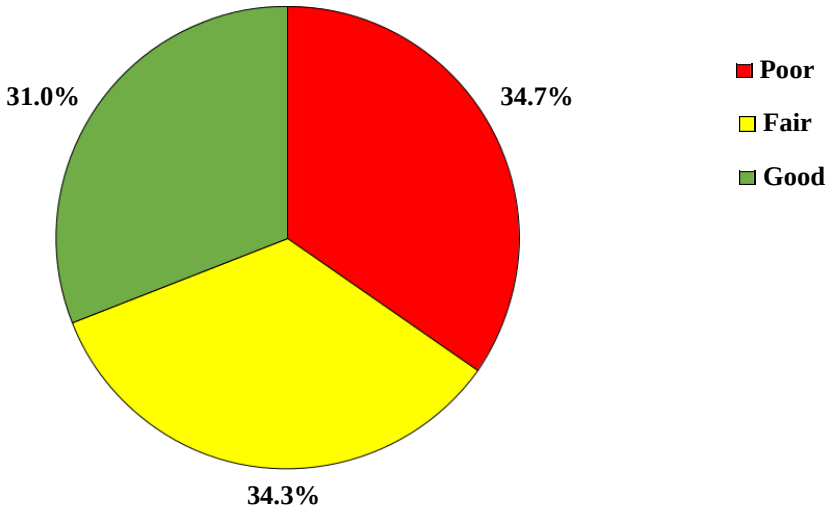

Figure 4: Overall Oral hygiene and feeding practices of children

4.6 Factors associated with Oral hygiene and feeding practices of children

Pearson's chi-square test was used to assess the association between independent variables and oral hygiene and feeding practices of children. Parental age (p=0.010), marital status (p=0.014), residence type (p=0.002), knowledge on early childhood caries (p=0.002) and parental dental practices (p<0.0001) were significantly associated with good oral hygiene and feeding practices of children.

The percentage of good oral hygiene and feeding practices of children was significantly higher among parents aged 30-39 years compared to parents in other age groups. Additionally, the proportion of good oral hygiene and feeding practices of children was significantly higher among married participants (Table 6). Furthermore, participants residing in apartments/flats had high proportion of good oral hygiene and feeding practices compared to parents in other residence types. Finally, parents/caregivers with fair knowledge on Early childhood caries and

good dental practices had higher proportions of good childhood oral hygiene and feeding habits.

A logistic regression model was used to predict factors associated with good oral hygiene and feeding practices of children (Table 6). The model predicted child's age, knowledge on childhood dental caries and parental dental practices to be significant factors associated with good childhood oral hygiene and feeding practices. Parents with children aged 48-59 months were 10% less likely to practice good oral hygiene and feeding practices for their children compared to parents with younger children (AOR: 0.90; 95% CI= 0.16-0.96, p=0.041). However, parents with fair knowledge on early childhood dental caries were 2.56 times more likely to practice good oral hygiene and feeding practices for their children compared to those with poor knowledge (AOR: 2.56; 95% CI= 1.26-5.17, p=0.009). Parents who have had their children visit the dentist before were three times more likely to practice good oral hygiene and feeding practices for their children compared to their counterparts (AOR: 3.22, 95% CI: 1.00-10.36, p= 0.050). Furthermore, parents/caregivers with good dental practices were almost seven times more likely to practice good oral hygiene and feeding practices for their children compared to those with poor personal dental practices (AOR: 6.84; 95% CI= 2.76-16.90, p<0.0001).

Table 6: Factors associated with Oral hygiene and feeding practices of children

	Oral hygiene and feeding practices of children				Unadjusted Model	Adjusted Model
	Poor n(%)	Fair n(%)	Good n(%)	p-value-X^2	COR(95% CI) p-value	AOR (95% CI) p-value
Parent gender						
Female	66(79.5)	69(84.1)	60(81.1)	0.738	1	
Male	17(20.5)	13(15.8)	14(18.9)		0.1(0.41-1.60) 0.548	
Parent age (years)						
< 30	14(16.9)	13(15.9)	16(21.6)		1	1
30-39	32(38.6)	50(61.0)	38(51.4)	0.010*	1.33(0.62-2.83) 0.463	1.37(0.56-3.35) 0.488
40-49	33(39.8)	12(14.6)	17(23.0)		0.42(0.19-0.95) 0.038*	0.45(0.17-1.15) 0.095
40+	4(4.8)	7(8.5)	3(4.1)		1.20(0.32-4.54) 0.781	1.25(0.27-5.71) 0.772
Marital status						
Single	14(16.9)	6(7.3)	15(20.3)	0.014*	1	
Married	57(68.7)	71(86.6)	56(75.7)		1.48(0.70-3.13) 0.299	
Widowed/Divorced/Separated	12(14.5)	3(6.1)	20(4.1)		0.44(0.14-1.37) 0.157	
Residence type						
Apartments/Flats	16(19.3)	20(24.4)	31(41.9)		1	1
Compound House	45(54.2)	29(35.4)	18(24.3)	0.002*	0.38(0.19-0.75) 0.005*	0.53(0.25-1.11) 0.095
Semi-Detached / Detached Houses	22(26.5)	33(40.2)	18(24.3)		0.73(0.34-1.54) 0.407	0.79(0.33-1.90) 0.601
Education						
No formal education	4(8.2)	2(2.4)	2(2.7)		1	
Basic school	31(37.3)	23(28.1)	21(28.4)		1.42(0.32-6.13) 0.639	
Senior high school	25(30.1)	23(28.1)	13(17.6)	0.213	1.44(0.33-6.32) 0.629	
Tertiary Education	19(22.9)	29(35.4)	31(41.9)		3.15(0.72-13.89) 0.128	
Higher education	4(4.8)	5(6.1)	7(9.5)		2.74(0.50-18.02) 0.230	
Occupation						
Unemployed	12(14.5)	15(18.3)	10(13.5)		1	
Formal sector	24(28.9)	30(36.6_	34(45.9)	0.196	1.28(0.56-2.95) 0.562	
Informal sector	47(56.3)	37(45.1)	30(40.5)		0.68(0.31-1.50) 0.343	
Number of children < 6 years						
1	56(67.5)	47(57.3)	42(56.8)	0.626	1	
2	24(28.9)	30(36.6)	28(37.8)		1.52(0.85-2.72) 0.159	
3	3(3.6)	5(6.1)	4(5.4)		1.89(0.49-7.29) 0.357	

Child gender						
Female	32(38.5)	44(53.7)	37(50.0)	0.129	1	
Male	51(61.4)	38(46.3)	37(50.0)		0.58(0.34-1.00) 0.050	
Child age (months)						
24-35	16(19.3)	25(30.5)	24(32.4)		1	1
36-47	29(34.9)	20(24.4)	20(27.0)		0.45(0.21-0.95) 0.035*	0.47(0.20-1.09) 0.081
48-59	17(20.5)	9(11.0)	13(17.6)	0.168	0.45(0.18-0.98) 0.047	0.90(0.16-0.96) 0.041*
60-71	21(25.3)	28(34.1)	17(23.0)		0.70(0.32-1.50) 0.362	0.73(0.29-1.80) 0.494
Adult teeth are more important than baby teeth.						
Agree	27(32.5)	26(31.7)	16(21.6)	0.499	0.91(0.32-2.59) 0.865	
Disagree	49(59.0)	49(59.8)	53(71.6)		1.51(0.58-3.93) 0.850	
Not Sure					1	
It is not necessary to fill or treat baby teeth when they develop cavities because they will fall out anyways						
Agree	48(57.8)	55(67.1)	46(62.2)		1.40(9.22-8.70) 0.716	
Disagree	24(28.9)	18(22.0)	21(28.4)	0.844	1.08(0.17-6.98) 0.933	
Neutral	2(2.4)	1(1.2)	2(2.7)		1	
Not Sure	9(10.8)	8(9.8)	5(6.8)		0.96(0.13-7.00) 0.970	
Has your child visited the dentist before?						
No	80(96.4)	73(89.0)	60(81.1)	0.090	1	1
Yes	3(3.6)	9(11.0)	14(18.9)		4.61(1.33-15.89) 0.015*	3.22(1.00-10.36) 0.050*
Has your child complained of toothache before?				0.469		
No	74(89.2)	75(91.5)	70(94.6)		1	
Yes	9(10.8)	7(8.5)	4(5.4)		0.62(0.24-1.58) 0.318	
Knowledge on childhood dental caries						
Poor	53(63.9)	34(41.5)	25(33.8)	0.002*	1	1
Fair	22(26.6)	40(48.8)	36(48.6)		3.10(1.70-5.67) <0.0001	2.56(1.26-5.17) 0.009*
Good	8(9.6)	8(9.8)	13(17.6)		2.35(0.96-5.78) 0.061	1.27(0.47-3.44) 0.626
Parental dental practices						

Poor	20(24.1)	7(8.5)	4(5.4)	<0.0001*	1	1
Fair	38(45.8)	35(42.7)	11(14.9)		2.20(0.94-5.17) 0.070	2.10(0.89-5.00) 0.091
Good	25(30.1)	40(48.8)	59(79.7)		7.2(3.05-16.99) <0.0001	6.84(2.76-16.90) <0.0001*

4.7 Parents' personal oral hygiene practices

The oral hygiene practices of parents/caregivers in this study are summarized in Table 7 below. Some (44.3%) of the parents reported cleaning their teeth every night and almost all parents (95%) used toothbrush and fluoridated toothpaste in brushing their teeth. 30.1% had ever visited a dentist. Overall, half (51.9%) had good oral hygiene practices and only 13% had poor oral hygiene practice (Figure 5).

Table 7: Parents' Personal Oral Hygiene Practices

	Frequency	Percentage
How often do you clean your teeth at night?		
Every night	**106**	**44.4**
Never	18	7.5
Once a while	49	20.5
Some nights	66	27.6
What do you use in cleaning your teeth?		
Chewing stick or chewing sponge	1	0.4
Other: charcoal and toothbrush	1	0.4
Toothbrush and fluoridated toothpaste (eg. Pepsodent, Close-up, Colgate, Oral B, Aqua-fresh, Charlie, etc)	**227**	**95**
Toothbrush and non-fluoridated toothpaste (eg. Longrich, Euthymol, etc)	10	4.2
How often do you change your toothbrush if you use one?		
Every 3 months	**127**	**53.1**
Every 6 months	40	16.7
Less than 3 months	**66**	**27.6**
More than 6 months	6	2.5
Have you visited the dentist before?		
No	165	69.6
Yes	**72**	**30.4**
If yes, for what reason		
Dental emergencies including falls and swellings	23	32.4
other dental problems	4	5.6
Routine Dental Check-up	23	32.4
Toothache	21	29.6

Correct answers are highlighted

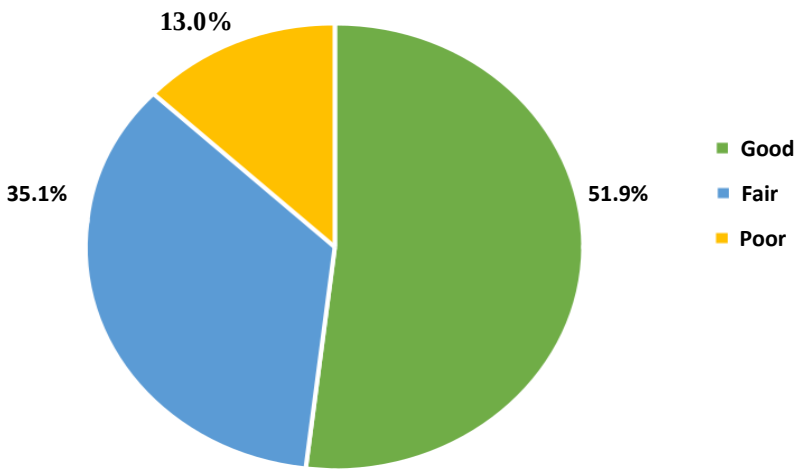

Figure 5: Overall parents' oral hygiene practices

4.8 Sources of information on child's oral care.

Various sources of information regarding children's oral health (Table 8; Figure 6) were reported. The most common sources of information outlined by the parents/caregivers in this study were family and friends (40.6%), TV/radio (37.2%) and reading (10.5%). Others included child welfare clinic (5.9%) and from a dentist (2.9%).

Table 8: Sources of information concerning child oral care

Sources	Frequency	Percentage (%)
Antenatal care clinic	7	2.9%
Child welfare clinic (weighing)	14	5.9%
Dentist	7	2.9%
Family, relatives and friends	97	40.6%
Reading	25	10.5%
T.V/Radio programs	89	37.2%
Total	239	100.0%

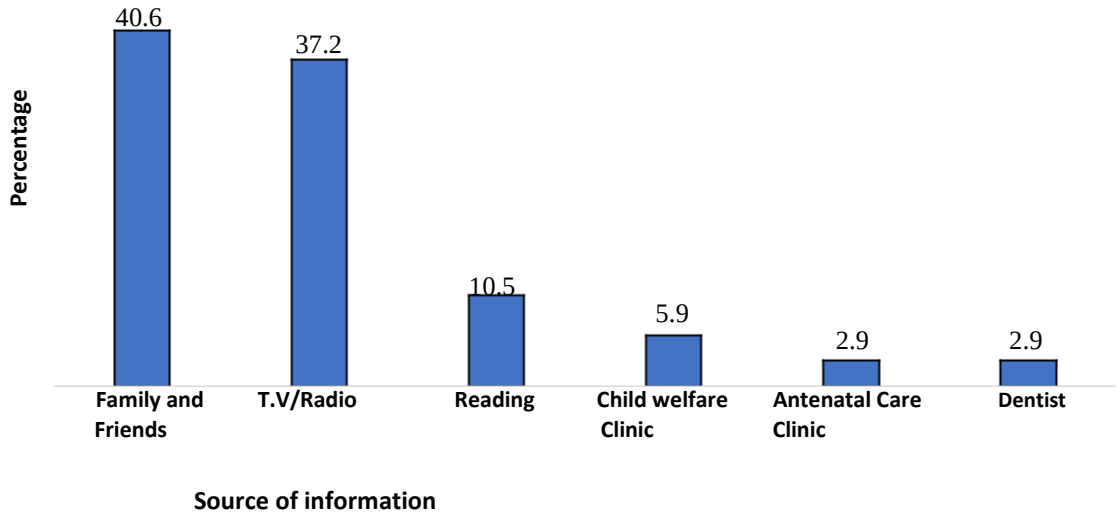

Figure 6: Sources of information about child's oral care

CHAPTER FIVE

DISCUSSION

5.1. Introduction:

In 2016, a WHO Global Consultation with oral health experts was held under the theme "Public Health Intervention against Early Childhood Caries". The objective was to advance public health interventions that were especially applicable in low- and middle-income countries (Phantumvanit et al., 2018). The conference reached a consensus that initiatives that aimed at modifying deleterious behaviors amongst children should focus on families and communities. This is because children under 6 lack proper manual dexterity and have no autonomy over certain things including their oral hygiene and feeding practices. Also children tend to pick up habits including health habits from home. In light of this, this study aimed at assessing the knowledge of Ghanaian parents on ECC, their attitude towards the oral health of their children as well as identifying the current oral hygiene and feeding practices they employ for their 24-71month olds. This is in hope of informing appropriate health regulatory bodies on the way forward in reducing the ECC burden in Ghana.

5.2. Knowledge of Parents on Early Childhood Caries:

It was found in this study that majority of parents had poor knowledge on ECC. This is similar to findings in a study conducted in Pikine, Senegal which reported more than half of their respondents demonstrating low oral health literacy (Dieng et al., 2020) The high percentage of parents with low knowledge in these studies could be a result of low educational status of the participants. About 60.3% of participants in this current study had senior high school education

or lower and 68.3% of mothers in the Senegal study also had low educational level (primary school and lower).

Residence type, education and occupation were significantly associated with knowledge of Early Childhood Caries, similar to what Mahmoud and Bani-Hani reported in their studies. In both studies, oral health knowledge was significantly associated with education and occupation of the mothers (BaniHani et al., 2021; Mahmoud et al., 2017). It has been established in pediatric dental literature that socioeconomic status/backgrounds of children influenced their risk of developing ECC (Anil & Anand, 2017; Kim Seow, 2012; Peres et al., 2019) thus children from higher socioeconomic class have lower risks and vice-versa. From this study, it was noticed that parents who had tertiary education, lived in apartments/flats and worked in the formal sector demonstrated good knowledge on ECC, a factor reported to reduce risk of ECC in children (Dieng et al., 2020; Ntombela & Mndzebele, 2015). These finding are thus in keeping with literature.

Knowledge strengths among parents included knowledge on possibility of caries in baby teeth affecting adult teeth, increased risk of development of tooth decay associated with sugary foods, the role of tooth brushing in prevention of tooth decay, the harm of night-time feeding to the teeth, and the transfer of tooth decay causing germs (*Streptococcus mutans*) from parents to children through kissing on lips and chewing of food before giving it to child. Most of these findings are comparable to those found in other studies where majority of the participants in a study in Kuwait were knowledgeable about the cariogenicity of sugary foods(Ashkanani & Al-Sane, 2013) and about half of parents in a study in Qatar knew germs that cause tooth decay can be transmitted from mother to her child (Al-Jaber et al., 2022). Contrary findings were noted in a study in Jordan where over 60% of the mothers believed that sharing food with their

children was acceptable (BaniHani et al., 2021). This may be due to different areas of knowledge highlighted in oral health education programs in these different regions.

Areas with weak knowledge demonstrated by parents in this study included the identification of white spots/lines on surface of teeth as possible early signs of caries, the best time to snack and the necessity of baby toothpaste containing fluoride. Similar to these findings are the studies in Qatar by Al-Jaber and in Jordan by Bani-Hani where averagely half of parents did not know the appearance of white lines or white spots on the surfaces of the teeth are the first signs of tooth decay nor the role of fluoride in caries prevention respectively (Al-Jaber et al., 2022; BaniHani et al., 2021). This disparity in knowledge may be attributed to areas of priority highlighted during oral health education.

5.3. Attitude of parents towards the oral health of their children:

Majority of parents in this study disagreed to the statement "adult teeth are more important than baby teeth" a similar finding in India where about half of parents knew the importance of milk teeth (Patil et al., 2022) and in Jordan where majority of mothers were of the opinion that primary teeth were as important as the permanent teeth (BaniHani et al., 2021). However, significant number of parents in this study agreed that it was not necessary to fill or treat baby teeth when they develop cavities because they will fall out anyways. In Nigeria in 2020, a similar study conducted found similar results where almost half of the parents in the study were of the opinion that deciduous teeth did not require treatment since they will eventually fall off (Olatosi et al., 2020). Similar findings may be due to the similarities in geographical and sociocultural characteristics of the two locations.

According to the AAPD, it is recommended that a child first visits the dentist after 6 months from eruption of first deciduous tooth and not later than 1 year of age (World Health Organization, 2019) however, in this study, majority of parents reported that their child had never been to the dentist. Similar to this finding is a study conducted in Nigeria where most mothers reported never sending their children to the dentist (Olatosi et al., 2020). Even in cases where parents reported that their child had ever complained of toothache in this study, only a third visited the dentist for professional care and even less was reported in the study conducted in Nigeria (Olatosi et al., 2020). Chala also found in his study in Morroco that a considerable number of mothers preferred other options to taking their child to visit the dentist even when the child had an emergency need (Chala et al., 2018). This can be attributed to the generalized less patronage of dental services in developing countries due to the less importance placed on it as corroborated by Olatosi (Olatosi et al., 2020) as well as the actual/presumed cost of dental treatments (Adusei, 2018; BaniHani et al., 2021; Chala et al., 2018).

5.4. Oral hygiene and feeding practices employed by Parents towards their children:

From the findings of this study, parents were found to be evenly distributed across poor, fair and good oral hygiene and feeding practice categories, similar to the findings in a study conducted in United Arab Emirates where only 20% of parents were found to follow good oral hygiene and feeding practices for their children (Mahmoud et al., 2017). Mahmoud also reported only few parents commencing cleaning of their children's teeth after eruption of the first milk tooth, a similar finding to what was recorded in this study. Only about a quater of mothers reported cleaning their child's teeth every night with the remaining cleaning sometimes, once a while or never. Similarly, Olatosi found that only quater of the mothers

cleaned their child's teeth two or more times daily (Olatosi et al., 2020). Previous studies in Ghana among older children (9-15 years and 9-19 years) in 2015 and 2019 showed that majority of children brushed only once daily. This shows that much gains haven't been made in the area of tooth brushing habits of children in Ghana. Though more than half of parents in this study reported using children's toothbrush and children's toothpaste for their children, a significant number of parents reported using children's toothbrush and adult's toothpaste for their 24-71month olds. Other studies conducted does not specify use of children's toothpaste or adult's toothpaste hence difficult to compare to other studies. However, this trend noticed may be due to the cost of children's toothpaste in comparison to the adult toothpaste especially taking into consideration their amounts.

From the findings of this study, parents personal dental practices were also noticed to be significantly associated with their child's oral hygiene and feeding practices. This is similar to findings in other studies (Kumar et al., 2020; Olatosi et al., 2020). This goes to prove that parents cannot employ better oral hygiene regimen for their children other than what they know and personally practice. Children therefore grow, adopting health behaviors established from childhood at home which have great impacts on their health, hence the target of the WHO to initiate health behavior changes at the family level.

5.5. Sources of information on oral health.

Majority of parents in this study stated family and friends and T.V/Radio as their main sources of information about child oral care. Similarly, majority of parents in Egypt and Morroco sited family and friends as their major source of information on child oral care (Chala et al., 2018; Salama et al., 2020). In Jordan and in Nigeria, 57.3% and 23.1% respectively also reported media as their major source of information (BaniHani et al., 2021; Oredugba et al., 2014). These trends go on to reaffirm how highly esteemed traditional values are held independent of their scientific backing or relevance and thus the role of family and community in effecting behavioral change. Also, the translation of current generations to computer literates and media friendly is affirmed here and these avenues can be explored to largely reach the population with oral health education and promotion contents.

5.6. Application of the KAP model to findings of the study:

The results of this study are linked to the Knowledge, Attitude and Practice model by highlighting the importance of the knowledge in shaping attitudes and practices related to oral hygiene and feeding practices for children. The KAP model adapted for this study proposes that the level of knowledge of an individual directly influences his/her attitude and thus, the practices the individual employs concerning the health issue of interest (Du Monde,2011). Results from this study implied that parents with fair knowledge of ECC as well as parents who had had their children visit the dentist before had significantly higher chances of employing good child oral hygiene and feeding practices. Parents with fair knowledge on early childhood dental caries were 2.56 times more likely to practice good oral hygiene and feeding practices for their children compared to those with poor knowledge (AOR: 2.56; 95% CI= 1.26-5.17,

p=0.009) and parents who have had their children visit the dentist before were 3 times more likely to practice good oral hygiene and feeding practices for their children compared to their counterparts (AOR: 3.22, 95% CI: 1.00-10.36, p= 0.050). These findings reaffirms the theory of the KAP model proposed by Medicins Du Monde.

5.7. Limitations of the Study:

This study has some methodological and empirical limitations. Firstly, the study relied solely on self-reported measures, which may be subject to bias and social desirability effects. This means that participants may have given responses that are socially desirable or may not reflect their true behaviors, leading to inaccurate results. Additionally, the study used a cross-sectional design, which limits the ability to establish causal relationships between variables. Future longitudinal studies that follow participants over time may provide stronger evidence for the directionality of the relationships observed in this study. Secondly, the study was conducted in a single geographic location with a relatively small sample size, which may limit the generalizability of the findings to other populations and settings. These limitations suggest that further research should be conducted to provide a more comprehensive understanding of a more representative sample.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS:

6.1. SUMMARY AND CONCLUSION:

Parents/caregivers exhibited fair to poor knowledge on childhood caries, poor attitude towards the oral health of their children and poor overall child oral hygiene and feeding practices. Factors that were found to be associated with knowledge on early childhood caries included residency type, education, occupation, child oral hygiene and feeding practices, and parental personal dental practices. Some factors identified to be associated with the oral hygiene and feeding practices employed by parents for children in this study were parental age, marital status, residence type, knowledge on childhood caries, and parental personal dental practices Sources of information on childhood oral care were majorly family/friends, T.V/Radio.

6.2. RECOMMENDATIONS:

1. Champion oral health education and oral health promotion contents on electronic media avenues by stakeholders such as the Ministry of Health of Ghana as well as the Ghana Health Service and the Pediatric Society of Ghana.
2. The Ministry of Health and Ghana Health Service should incorporate first dental visits between 6 months of eruption of first baby tooth and before 1 year of age into already established child welfare and vaccination clinics/appointments.

3. The National Health Insurance Authority should provide substantial subsidies on cost of child oral healthcare on the National Health Insurance Scheme (NHIS) just like other child health programs.
4. The government should introduce policies such as percentage tax waives on child toothpastes so as to reduce the consumer cost and encourage purchase and use.
5. Further studies should be conducted at other sites so as to compare levels of knowledge, attitude and practices across the country.

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APPENDICES

Appendix A: Informed Consent and Voluntary Agreement Form

Protocol Number:
Principal investigator: Dr Theodora Ewura Esi Eghan, School of Public Health, University of Ghana.
Contact: +233501384389 Email: ewuraesieghan.ee@gmail.com

Dear Sir/Madam,

My name is Theodora Ewura Esi Eghan,a student pursuing a master of Public Health (MPH) programme at the University of Ghana School of Public Health. I am conducting a study on the topic **"KNOWLEDGE AND ATTITUDE TOWARDS ORAL HYGIENE AND FEEDING PRACTICES AMONG PARENTS WITH 24-71MONTH OLDS VISITING THE KORLE-BU TEACHING HOSPITAL.".** The prevalence of Early Childhood caries has been on the increase especially amongst children in the Greater Accra region. Children below 6 years of age being affected highly depend on their parents for their oral care and feeding. As such, this study is aimed at assessing the knowledge, attitude and practices of parents towards their child's oral health and this information will help us identify what is needed in order to improve children's oral health and decrease their risk of developing caries. As a parent of a child between 24 - 71 months accessing health care at the pediatric O.P.D, you have been randomly selected to participate in this study. The study seeks to understand your perception on certain dietary and oral hygiene practices and what you do in caring for your child's oral health.
I would be grateful if you could kindly complete and return this survey. Participation is entirely voluntary and information gathered will be handled with absolute confidentiality nd anonymousity.
Instructions for completing the survey:
Completion of the survey should take approximately 10 minutes. Tracking of data is by numbers only. Your name will not be recorded in any of the data files in association with this survey. For further enquiries, kindly contact principal investigator on +233501384389. Thank you.

DECLARATION OF CONSENT

I acknowledge that I have read or have had the purpose and contents of the participants' information sheet read and satisfactorily explained to me. I fully understand the contents

and any potential implications as well as my right to change my mind (i.e. withdraw from the research) even after I have signed this form.

I voluntarily agree to be part of this research.

Initials of Participant……. ID Code …….

Participants' Signature ……

Date: …….

Appendix B: Data Collection Tool

QUESTIONNAIRE ON KNOWLEDGE AND ATTITUDE TOWARDS ORAL HYGIENE AND FEEDING PRACTICES AMONG PARENTS WITH 24-71MONTH OLDS VISITING THE KORLE-BU TEACHING HOSPITAL..

Date:

Participant Code:

PARENT'S DEMOGRAPHICS:

1. Gender
    a) Male
    b) Female

2. Age (As at last birthday in years) ……

3. Marital status
    a) Single
    b) Married
    c) Co-habiting
    d) Divorced/separated
    e) Widowed

4. Residence type
    a) Kiosks/Containers
    b) Compound House
    c) Apartments/Flats
    d) Semi-Detached / Detached Houses

5. Educational level
    a) No formal education
    b) Basic education (up to junior high school or lower
    c) Senior high school

d) Tertiary Education (University, Technical/Vocational, …)
e) Higher education (Masters, PHD, Post-Doctorate)

6. Occupation
   a) Formal sector
   b) Informal sector
   c) unemployed

7. Number of children below 6 years …….

CHILD'S DEMOGRAPHICS.

8. Gender
   a) Male
   b) Female

9. Age (As at last birthday in months) ……

PARENTAL KNOWLEDGE ON EARLY CHILDHOOD CARIES.

Kindly indicate by circling the extent to which you agree or disagree with the following statements.

11. Decay in baby teeth can affect the child's adult teeth
    a) Agree
    b) Disagree
    c) Not sure

12. White spots/lines on the surface of teeth may be early signs of tooth decay
    a) Agree
    b) Disagree
    c) Not sure

10. Sweets/sugary foods increase your child's risk of developing caries
    a) Agree
    b) Disagree
    c) Not sure

13. The best time to snack is in-between meals
    a) Agree
    b) Disagree

c) Not sure

14. Sending children off to bed with a bottle containing beverage (milo, juice) can be harmful to their teeth
    a) Agree
    b) Disagree
    c) Not sure

15. Germs that cause tooth decay can be transmitted from parent to child by kissing on the lips
    a) Agree
    b) Disagree
    c) Not Sure

16. Germs that cause tooth decay can be transmitted from parent to child by parent chewing food before giving it to child
    a) Agree
    b) Disagree
    c) Not Sure

17. Tooth brushing helps prevent tooth decay
    a) Agree
    b) Disagree
    c) Not sure

18. Tooth brushing should commence immediately when child's teeth begins erupting
    a) Agree
    b) Disagree
    c) Not sure

19. Baby's toothpaste must not necessarily contain fluoride?
    a) Agree
    b) Disagree
    c) Not sure

ATTITUDE OF PARENTS TOWARDS THE ORAL HEALTH OF THEIR CHILDREN.

Kindly indicate by circling the option most suitable.

20. Adult teeth are more important than baby teeth.
    a) Agree
    b) Disagree
    c) Not sure

21. It is not necessary to fill or treat baby teeth when they develop cavities because they will fall out anyways
    a) Agree
    b) Disagree
    c) Not sure

22. Has your child visited the dentist before?
    a) Yes
    b) No

23. If yes, for what reason did your child visit the dentist?
    a) Toothache
    b) Routine dental check-up
    c) Dental emergencies including falls and swellings
    d) Other dental problems

24. Has your child complained of toothache before?
    a) Yes
    b) No

25. If yes, what did you do when your child complained of toothache?
    a) Nothing
    b) Visited a dentist
    c) Got medications from a pharmacy
    d) Used herbal medication
    e) Used other local remedies

ORAL HYGIENE AND FEEDING PRACTICES OF CHILDREN

Please circle the option that best describes what you do.

26. How often do you clean your child's teeth at night?
    a) Every night
    b) Some nights
    c) Once a while
    d) Never

27. What do you use in cleaning your child's teeth?
    a) Children's toothbrush and children's toothpaste
    b) Children's toothbrush and adult's toothpaste
    c) Chewing stick or chewing sponge
    d) Wet towel with or without toothpaste

e) Other, specify …….

28. How often do you change your child's toothbrush if he/she uses one?
    a) Every 3 months
    b) Less than 3 months
    c) Every 6 months
    d) More than 6 months

29. At what age did you start brushing your child's teeth?
    a) After eruption of 1st baby tooth
    b) Before age 1 year
    c) After age 1 year
    d) Not yet

30. At what times does your child snack during the day?
    a) At meal times
    b) In-between meals
    c) At bed time.

31. How much juice/sugary drinks does your child take during the day?
    a) None
    b) Less than 180mls (eg. less than1 box of juvita)
    c) Approximately 250mls (eg. 1 box of kalypo)
    d) More than 250mls (eg. more than 1 box of kalypo)

32. Did your child in the past/currently go to bed with a beverage/snack (eg Milo, cerelac, milk)

    a) Yes
    b) No

33. If yes, how often?
    a) Every night
    b) Some nights
    c) Once a while

PARENTS' PERSONAL ORAL HYGIENE PRACTICES

Please circle the option that best describes what you do

34. How often do you clean your teeth at night?
    a) Every night
    b) Some nights
    c) Once a while
    d) Never

35. What do you use in cleaning your teeth?

    a) Toothbrush and non-fluoridated toothpaste (eg. Longrich, Euthymol, etc)
    b) Toothbrush and fluoridated toothpaste (eg pepsodent, close-up, colgate, oral B, aqua fresh, Charlie, etc)
    c) Chewing stick or chewing sponge
    d) Other, specify …….

36. How often do you change your toothbrush if you use one?
    e) Less than 3 months
    f) Every 3 months
    g) Every 6 months
    h) More than 6 months

37. Have you visited the dentist before?
    a) Yes
    b) No

38. If yes, for what reason?
    a) Toothache
    b) Routine dental check-up
    c) Dental emergencies including falls and swellings
    d) Other dental problems

SOURCES OF INFORMATION CONCERNING CHILD'S ORAL CARE.

Kindly circle which applies to you.

39. From where did you learn appropriate oral hygiene and feeding practices for your child?
    a) Family relatives and friends
    b) Antenatal care clinic
    c) Child welfare clinic (weighing)
    d) T.V/Radio programs
    e) Dentist
    f) Reading

Appendix C: Ethical Clearance form KBTH-IRB

In case of reply the number
And the date of this
Letter should be quoted
My Ref. No. KBTH/MD/C8123
Your Ref. No.....

KORLE BU TEACHING HOSPITAL
P. O. BOX KB 77,
KORLE BU, ACCRA.

Tel: +233 302 667759/673034-6
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13th March, 2023

THEODORA EWURA ESI EGHAN
SCHOOL OF PUBLIC HEALTH
COLLEGE OF HEALTH SCIENCES
UNIVERSITY OF GHANA, LEGON

INSTITUTIONAL APPROVAL: KORLE BU TEACHING HOSPITAL-SCIENTIFIC AND TECHNICAL COMMITTEE/INSTITUTIONAL REVIEW BOARD (KBTH-STC/IRB/000208/2022

Following approval of your study entitled "Parental Knowledge and Attitude Influencing Oral Hygiene and Feeding Pratices of 24 – 71 Month Olds Visiting the Korle-Bu Teaching Hospital-Paediatric O.P.D" by the Korle Bu Teaching Hospital-Scientific and Technical Committee/Institutional Review Board.

I am pleased to inform you that institutional approval has been granted for the conduct of your study in Korle Bu Teaching Hospital.

Please contact the Heads of Departments to discuss the commencement date of the study.

Please note that, this institutional approval is rendered invalid if the terms of the Institutional Reviewed Board/Scientific and Technical Committee approval are violated.

Sincere regards

Dr. Harry Akoto
Ag. Director of Medical Affairs
For: Chief Executive