

**ASSESSMENT OF CAREGIVERS' KNOWLEDGE AND
ATTITUDE TO DENTAL CARIES – RISK FACTORS IN
PRESCHOOL CHILDREN**

BY

ADARAMOLA MICHAEL TOSIN (DEN1502114)

CHUKUMAH ALMA ANWULI

(DEN1502119)

EKHOE-OMORAGBON EFOSA

(DEN1502121)

EMONENA OGHENETEJIRI GLORIA (DEN1502122)

IDAEWOR AIGBE (DEN1502124)

DEPARTMENT OF COMMUNITY DENTISTRY

SCHOOL OF DENTISTRY

COLLEGE OF MEDICAL SCIENCES

UNIVERSITY OF BENIN

BENIN CITY.

JULY, 2023.

**ASSESSMENT OF CAREGIVERS' KNOWLEDGE AND
ATTITUDE TO DENTAL CARIES – RISK FACTORS IN
PRESCHOOL CHILDREN**

BY

ADARAMOLA MICHAEL TOSIN	(DEN1502114)
CHUKUMAH ALMA ANWULI	(DEN1502119)
EKHOE-OMORAGBON EFOSA	(DEN1502121)
EMONENA OGHENETEJIRI GLORIA	(DEN1502122)
IDAEWOR AIGBE	(DEN1502124)

**A PROJECT SUBMITTED TO THE DEPARTMENT OF
COMMUNITY DENTISTRY, SCHOOL OF DENTISTRY,
UNIVERSITY OF BENIN, IN PARTIAL FULFILLMENT FOR
THE AWARD OF BACHELOR OF DENTAL SURGERY (BDS)
DEGREE**

SUPERVISED BY
PROF. SUNNY OKEIGBEMEN
JULY, 2023.

DECLARATION

A declaration that this study is original and will be carried out under the supervision of PROF. SUNNY OKEIGBEMEN and has not been published anywhere else for the certificate of a degree.

ADARAMOLA MICHAEL TOSIN
DEN1502114

CHUKUMAH ALMA ANWULI
DEN1502119

EKHOE-OMORAGBON EFOSA
DEN1502121

EMONENA OGHENETEJIRI GLORIA
DEN1502122

IDAEWOR AIGBE

DEN1502124

CERTIFICATION

This is to certify that this research study titled “ASSESSMENT OF CAREGIVERS’ KNOWLEDGE AND ATTITUDE TO DENTAL CARIES – RISK FACTORS IN PRESCHOOL CHILDREN ” will be carried out by ADARAMOLA MICHAEL TOSIN, CHUKUMAH ALMA, EKHOE-OMORAGBON EFOSA, EMONENA OGHENETEJIRI GLORIA, IDAEWOR AIGBE with matriculation number: DEN1502114, DEN1502119, DEN1502121, DEN1502122 and DEN1502124 under supervision in the Department of Community Dentistry, School of Dentistry, University of Benin as part of the requirements for the award of Bachelor of Dental Surgery (BDS).

PROF. SUNNY OKEIGBEMEN
PROJECT SUPERVISOR.
Department of Community Dentistry,
School of Dentistry,
University of Benin,
Benin City, Edo, Nigeria.

PROF. SUNNY OKEIGBEMEN
PROJECT COORDINATOR.
Department of Community Dentistry,

School of Dentistry,
University of Benin,
Benin city, Edo, Nigeria.

DEDICATION

Our Project is dedicated to Almighty God, who made it possible for us to complete this research work.

We also dedicate this project work to our loving and supportive parents; Mr. and Mrs. Adaramola, Dr. and Mrs. Chukumah, Mr. And Mrs. Ekhoie-omorangbon, Pharm(Dr.) and Pharm. Emonena and Engr. and Mrs. Idaewor.

We also dedicate this work also to all our trainers.

May God bless you all richly.

ACKNOWLEDGMENTS

We would like to express our sincerest appreciation to God Almighty for His wisdom, knowledge, and understanding that guided us throughout the successful completion of this research project.

Undoubtedly, the completion of any research endeavor requires assistance from others. Therefore, we would like to extend our heartfelt thanks to all those who have supported us throughout this journey.

First and foremost, we would like to express our deep gratitude to our project supervisor, Prof. Sunny Okeigbemen whose invaluable guidance and supervision greatly contributed to the successful execution of this project.

In addition, we would like to acknowledge the Head Mistress of University of Benin Teaching Hospital Staff School for giving us access to the caregivers of the preschool children who were the subject of the research.

Furthermore, we would like to extend our profound appreciation to our incredible parents, Mr. and Mrs. Adaramola, Dr. and Mrs. Chukumah, Mr.

And Mrs Ekho-omorangbon, Pharm(Dr.) and Pharm. Emonena and Engr. and Mrs Idaewor for their unwavering support in every aspect – financially, spiritually, morally, and emotionally.

Lastly, we would like to express our gratitude to all our well-wishers for their encouragement and ongoing support.

May God bless each and every one of you abundantly.

TABLE OF CONTENTS

TITLE PAGE.....	i
DECLARATION.....	ii
CERTIFICATION.....	iii
DEDICATION.....	iv
ACKNOWLEDGEMENTS.....	v
TABLE OF CONTENTS.....	vi
ABSTRACT.....	ix

CHAPTER ONE: INTRODUCTION

1.1 Background of the study.....	1
1.2 Statement of the problem.....	1
1.3 Aims and objectives of the study.....	2
1.4 Research questions.....	2
1.5 Justification.....	3

CHAPTER TWO: LITERATURE REVIEW

2.1 Definition of Dental caries.....	5
2.2 Research findings on the knowledge and attitude to dental Caries	6
CHAPTER THREE: METHODOLOGY	
3.1 Study area.....	10
3.2 Study design.....	10
3.3 Study population.....	10
3.4 Sampling techniques.....	10
3.5 Selection criteria	11
3.6 Study duration.....	11
3.7 Research materials.....	11
3.8 Data analysis.....	12
3.9 Ethical considerations.....	12
CHAPTER FOUR: RESULTS	
4.1 Data analysis Findings.....	13
CHAPTER FIVE:	
5.1 Interpretation of Result Findings.....	23
5.1.1 Socio-demographic characteristics.....	23
5.1.2 Assessment of Attitude of Respondents	24
5.1.3 Assessment of Knowledge of Respondents.....	26
5.2 Recommendations.....	29
REFERENCES	31
Appendix	

i.	Informed consent form.....	33
ii.	Certificate of consent.....	37
iii.	Questionnaire.....	38
iv.	Health research ethics committee approval.....	42

LIST OF TABLES

Table 1.....	Socio-demographic characteristics of respondent	14
Table 2.....	Summary of responses to attitude questions	15
Table 3.....	Summary of responses to knowledge questions	16
Table 4.....	Showing the average monthly salary of caregivers	16
Table 5.....	Showing the number of days caregivers go to work	16
Table 6.....	Cross-tabulation of visits to the Dentist and the reason	20
Table 7.....	Showing Fischer's exact test of gender versus knowledge status	20
Table 8.....		21
Table.....		22

LIST OF FIGURES

Fig 1:	Number of caregivers with the number of times their children brush in day....	17
Fig 2:	Number of caregivers who have or have not visited a dentist with their children....	17
Fig 3:	Number of caregivers and their responses (correct/incorrect) to the question of what dental caries is.....	18

Fig 4: Number of caregivers and their responses (correct/incorrect) to the question of what milk teeth are.....19

Fig 5: Number of caregivers and their responses (correct/incorrect) to the question of whether milk teeth should be cared for.....19

Fig 6: Number of caregivers and the ages of their children when they started brushing.....20

ABSTRACT

Dental caries is a common chronic infectious resulting from tooth-adherent cariogenic bacteria, primarily Streptococcus Mutans, which metabolize sugars to produce acid, demineralizing the tooth structure over time.

Dental caries is one of the commonest childhood disease. In general, the prevalence of caries in preschool children seems to be on the decline or the trend has reached a plateau in most of the developed countries, but may be increasing in some developed and several developing countries. A considerable proportion of preschoolers thus are still affected by dental caries.

A sample size of 100 caregivers of pre-school children of the University of Benin Staff school were used. A stratified questionnaire focusing on the knowledge and attitude to Dental Caries risk factors was filled by all respondents with 51.7% knowing the meaning of Dental Caries and 48.3% not knowing the meaning of Dental Caries.

An understanding of caries risk factors in preschoolers is essential in controlling the prevalence of dental caries in this age group. This is the main objective of our research.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

Dental caries is a common chronic infectious resulting from tooth-adherent cariogenic bacteria, primarily Streptococcus Mutans, which metabolize sugars to produce acid, demineralizing the tooth structure over time. [1]

Dental caries is one of the commonest childhood disease. In general, the prevalence of caries in preschool children seems to be on the decline or the trend has reached a plateau in most of the developed countries, but may be increasing in some developed and several developing countries. A considerable proportion of preschoolers thus are still affected by dental caries. [2]

1.2 STATEMENT OF THE PROBLEM

At preschool age, children still require a lot of care from parents, guardians, and care givers; it is therefore important to fully understand the predisposing factors so as to better manage occurrence, maintain prevention and generally improve the quality of life.

With proper sensitization, a lot of risk factors to early childhood caries are controllable such as feeding habits, nutritional variables to better improve the quality of life of these children. This research is important

because it helps us gain better understanding of the level of caregivers' knowledge on dental caries occurrence in preschool children which would be very effective in drafting out a solution to improve their oral health status.

This study focuses on the caregivers' knowledge and attitude which puts the child at risk to developing dental caries.

1.3 AIMS AND OBJECTIVES

General Objectives:

To assess caregivers' knowledge and attitude towards risk factors to dental caries in pre-school children.

Specific Objectives:

1. To ascertain the knowledge of caregivers towards dental caries - risk factors.
2. To ascertain the attitude of caregivers towards dental caries - risk factors.

1.4 RESEARCH QUESTIONS:

1. What is the depth of knowledge available to caregivers on dental caries risk factors?
2. What preventive measures can be taken by caregivers to prevent the occurrence of dental caries among preschool children?

1.5 JUSTIFICATION:

There is an increase in prevalence and severity of caries in the primary dentition of preschool children, despite the complications resulting from ECC, there is scarcity of studies on the prevalence and risk factors. [3]

In a study done, the prevalence was 23.5% with a total of 353 carious teeth seen in 127 children. The mean dmft was 0.65 ± 1.49 with the second mandibular primary molars were the teeth most affected by caries, accounting for 35.4% of all decayed teeth. Severe ECC prevalence was 2.2%. [4]

The severity of the problem is associated with the attitude and knowledge of caregivers to dental caries risk factors in preschool children and this cannot be overemphasized. In a study done, the following problems/factors have been identified as playing a role [5]:

1. Inadequate knowledge: being the major factor preventing care-givers from favorable oral health behavior.
2. Educational level: It was noted that caregivers with higher education levels showed increased oral health knowledge, understanding and positive attitude.
3. Gender differences: female caregivers being 78.83% with them having a better understanding of oral health.

4. The sources of oral health knowledge among caregivers

In a study, the following was described about caregivers' knowledge and attitude: 91.3% had knowledge of food cariogenicity and the importance of fluoride in caries prevention, 75% of participants exposed their preschool child to a minimum of 3 sugar attacks per day, 44% of children had their teeth brushed by a caregiver other than parent, 37% reported about child's first dental visit before 3 years of age, 24.6% were aware of the right time to start brushing a child's teeth and the ideal time for the first dental visit. Also parents with > 5 children were less likely to limit daily sugar exposures, brush their child's teeth 2-3 times daily or take child to the dentist [6].

Older parents (age > 40 years) were seen to have more knowledge about the risk of untreated dental caries while being more committed to brushing their child's teeth themselves. Younger parents(age < 40 yrs) showed more knowledge on the ideal time for a child's first dental visit however were less likely to brush their child's teeth themselves due to more busy lives [6].

There is an indication that toothache is the main factor for initiation of dental visits with more caregivers thinking that dental treatment is very time-consuming, costly and troublesome (30.02%) [6].

There appears to be a deficiency in the knowledge, attitude and practice of oral health concepts such as the timing for the first dental visit or the

ideal timing to initiate tooth brushing for children[6]. There is a direct link between the the knowledge/attitude of a caregiver and dental caries risk.

CHAPTER TWO

LITERATURE REVIEW

2.1 DEFINITION OF DENTAL CARIES:

Dental caries is the most common childhood disease in the world, which although not life-threatening, is responsible for significant morbidity, acute and chronic complications, tooth loss, malocclusion problems in permanent teeth, serious financial implications and failure to thrive when left untreated.[7]

It is well-documented that caries is a transmissible infectious disease in which pathogenic risk factors prevail over protective factors, producing demineralization of tooth structure. If the disease is allowed to progress, surface cavitation and dental tissue destruction will result [8]

Dental caries is a post-eruptive disease that is characterized by progressive demineralization of tooth substance due to the action of acid produced by oral bacteria through their metabolism of refined carbohydrates. Risk factors for dental caries in preschool children. Caries in preschool children is a major concern worldwide especially in developing countries like Nigeria where its prevalence is 21.2% and mean deft of 0.735. It is due to its multifactorial causative factors such as as:

- i. Attitude and knowledge of caregivers

- ii. Incorrect oral hygiene practices
- iii. Poor oral hygiene
- iv. Educational status of mothers and caregivers
- v. High levels of fermentable carbohydrate diet
- vi. Frequent between-meal snacks
- vii. Frequent use of sweetened medication
- viii. High level of cariogenic micro-organisms such as mutans streptococci, which is usually transmitted to the child's oral cavity by parents or caregivers.

2.2 RESEARCH FINDINGS ON KNOWLEDGE AND ATTITUDE TO DENTAL CARIES:

In a study done across 4 communities in Manitoba, most caregivers believed that primary teeth are important and with correct response to inquiries about knowledge and attitudes toward oral health. The attitudes on the importance of baby teeth and bottle feeding after one year of age, the effect of rotten teeth on childhood health and night-time nursing emerged as variables most associated with the absence/presence of ECC and deft rates.[9]

In India. A total of 609 children in the age group of 3-6 years were examined using def index. To determine dental care seeking attitude, 105 caregivers were interviewed. Results revealed that 52.87% of children in

the age group of 3-3.11 years, 45.1% of children in the age group of 4-4.11 years and 58.55% of children in 5-5.11 age groups suffered from caries. The mean def index was 1.82, 1.57 and 2.21, respectively. Interview of caregivers of children revealed that out of 105 only 12 (11.4%) children had previously been to a general dentist. None of them knew about Paedodontics as a specialty.[10]

A study done in Kuwait about the showed that caregivers had weak knowledge and practice in relation to the oral health of preschool children. Mothers and caregivers with higher education had better knowledge and practices. Education and attitude appeared to be favorable indicators of the caregivers' practices with regard to the oral health of their preschool children. The results revealed that out of the 334 participants, 234 (70%) were between 20 and 40 years of age with a high school diploma or higher degree and had between 2 and 5 children. The mean knowledge score was 4.68 ± 1.87 , the mean attitude score was 4.34 ± 0.88 and the mean practice score was 2.45 ± 0.99 . Major weaknesses were reported in infant oral health-related concepts. Mothers had better knowledge than other caregivers ($p < 0.001$). Higher education was significantly associated with better knowledge ($p = 0.003$) and better practices ($p = 0.017$). In addition, knowledge, attitude and level of education were positively and significantly associated with practices ($p < 0.005$). [11]

Studies done in Malaysia, revealed that most caregivers had a good knowledge of a child's tooth eruption stages, role of fluoride and tooth brushing in caries development. 32% knew that caries can affect infants below 2 years old and about 38% of caretakers knew the right time for using fluoride toothpaste for tooth cleaning, however only 24% knew that fillings in baby teeth were necessary. Concerning the attitude to dental caries, 5 respondents agreed that tooth decay is caused by bacteria transmitted by sharing utensils, while 56 - 71% thought that nighttime and frequent bottle feeding/breast feeding did not cause tooth decay, respectively. About 18% strongly agreed that swallowing of toothpaste can be harmful to a child's health. On oral health practices, 17.6% of the caretakers agreed to having bitten food into small pieces before giving it to the children. About 85% acknowledged giving sweet food to the child and 53% to giving sweetened liquid in bottle. This study revealed that most caretakers had good knowledge but it did not reflect in their attitude and practice. [12]

In a study done in Hong Kong, 67.7% of caregivers said they did not think carious primary teeth needed to be restored. Among the mothers, 12.6% (43/342) did not know the oral condition of their child. Reportedly, 82% (417/510) and 87.5% (446/510) of the mothers had not received any oral health care information during the ante- or postnatal periods. Nearly all, 97%, of the respondents said that they would like to receive more

information on oral health care. Oral cleansing habits were practiced for 66.2% (441/666) of the children. [13]

In a study done in Brazil on maternal characteristics and caregiving behaviors, maternal oral health-related behaviours had no direct effect on children's dental caries: child dental attendance pattern partially mediates the effect of maternal dental attendance pattern on dental caries (87.8%; $P < 0.05$) and partially mediates the effect of maternal dental anxiety (39.9%; $P < 0.001$). Child frequency of tooth brushing mediates 28.0% ($P < 0.001$) of the effect of maternal frequency of tooth brushing on dental caries. Socioeconomic factors directly influenced children's caries experience, whereas maternal oral health-related behaviours had no direct effect. [14]

CHAPTER THREE

METHODOLOGY

3.1 STUDY AREA

The study was carried out in the University of Benin Teaching Hospital Staff School. It is located in Egor Local Government Area (LGA), Benin City, Edo State which is one of the 36 state in Nigeria located in the South-South geographical zone in the country.

Benin City is situated approximately 25 miles North of the Benin river and situated 200 miles by road east of Lagos. The school has a population of over 1000 students comprising of preschool and school age pupil. It is located at latitude 6.3998° N and longitude 5.6099° E.

3.2 STUDY DESIGN

A cross-sectional study design will be used for this study.

3.3 STUDY POPULATION

This study will be carried out among preschool pupil care-givers from the University of Benin Teaching Hospital Staff School. Participation is voluntary.

3.4 SAMPLING TECHNIQUE

The participants were selected by random sampling.

3.5 SELECTION CRITERIA

Inclusion Criteria:

Care Givers of Preschool Pupil of University of Benin Staff School.

Exclusion Criteria:

Non-care givers for preschool pupils.

3.6 STUDY DURATION

This study will be carried out for a period of 1 month (April - May, 2023).

3.7 RESEARCH MATERIALS

Information on knowledge and attitude of care givers to dental caries in preschool pupil will be obtained using a questionnaire designed for the study. Information on knowledge, attitudes towards caries risk is going to be extracted from the questionnaire.

Section A: Socio-demographic characteristics of the respondents

Section B: Knowledge on caries risk factors

This aims at collecting information on the participant's knowledge on Caries risk assessment.

Some of the questions in this section include; 'are you aware of Caries risk factors?' to which they are to respond 'Yes/No'.

For those who respond 'Yes', a follow up question on 'what do you understand by Caries risk factor?' is asked and for this question, a mixture of correct and incorrect answers are put in the options.

Section C: Attitude towards Caries risk factors

This section aims at finding out the attitude of the respondents towards Caries risk factors

The questionnaire was presented among 100 caregiver's from University of Benin Teaching Hospital, Staff School. The pretest indicates that the questions were simple, easy to understand, and reply.

3.8 DATA ANALYSIS

A statistical package (IBM SPSS version 25) will be used to statistically analyse the data which will be analysed and reported on by using descriptive and inferential statistics, such as frequency tables and relative frequencies, and graphically illustrated by using bar charts. Continuous variables will be summarized, using means and standard deviations. Knowledge was scored by summing up correct responses to knowledge items and expressing as a percentage of the total items. Attitudes were scored in the same way, using the more favorable response as correct.

3.9 ETHICAL CONSIDERATIONS

Ethical clearance will be obtained from the Ethics and Research Committee, University of Benin Teaching Hospital, University of Benin.

Permission was gotten from the Head of Department, Community Dentistry, University of Benin Teaching Hospital.

Verbal informed consent from the respondents will be taken after they had been educated on the purpose of the study and confidentiality of the information assured.

Participants will be informed that they had the right to withdraw from the interview at any time and that withdrawal poses no loss or harm to them.

CHAPTER FOUR

RESULTS

4.1 DATA ANALYSIS FINDINGS:

Table 1: Socio-demographic characteristics of respondents			
Characteristic	Frequency (n)	Percent (%)	Total
Gender			
Male	36	36.4	99
Female	63	63.6	
Age group			
18 - 30 years old	23	23.2	99
31 - 40 years old	45	45.5	
41 - 50 years old	28	28.3	
51 - 60 years old	3	3	
Marital status			
Single	18	18.6	97
Married	73	75.3	
Divorced	2	2.1	
Widowed	4	4.1	
Highest level of education			
Primary	2	2	99
Secondary	7	7.1	
Tertiary	90	88.9	

Table 2: Summary of responses to attitude questions

Q No.	Questions	Responses	Frequency (n)	Percent (%)	Total
9	How many times does your child brush a day?	Once	8	8.4	95
		Twice	57	60	
		Three times	29	30.5	
		More	1	1.1	
10	Do you supervise each brushing?	Yes	66	68.8	96
		No	30	31.3	
11	If not, who supervises each brushing?	Help	2	28.6	7
		Grandparent	3	42.9	
		Aunt	2	28.6	
12	Have they ever been to the dentist with their children?	Yes	23	25.8	89
		No	66	74.2	
13	If yes, what was the visit for?	Checkup	8	36.4	22
		Cleaning	2	9.1	
		Tooth decay	10	45.5	
		Others	2	9.1	
14	Does your child snack at night?	Yes	33	34.7	95
		No	44	46.3	
		I don't know	18	18.9	
15	Do you believe milk teeth should be taken care of?	Yes	94	96.9	97
		No	3	3.1	
16	At what age do you start brushing your child's teeth?	< 3 months	13	14	93
		3-6 months	20	21.5	
		7-11 months	24	25.8	
		1 year	27	29	
		2 years	8	8.6	
		> 3 years	1	1.1	
17	How many children have ever had a hole in their teeth?	None	70	72.9	96
		One	13	13.5	
		Two	10	10.4	
		Three	1	1	
		Five	2	2	
18	Are you afraid of visiting a dentist?	Yes	12	12.4	97
		No	85	87.6	
19	If yes, why?	Pain	4	14	10
		Cost	4	21.5	
		Long waiting time	2	25.8	
20	Do you think visiting the dentist is necessary even without pain?	Yes	74	77.1	96
		No	17	17.7	
		I don't know	5	5.2	

Q No.	Questions	Responses	Frequency (n)	Percent (%)	Total
21	Do you know what dental caries is?	Yes	47	51.7	91
		No	44	48.3	
22	Do you have any missing tooth lost due to caries?	Yes	23	23.7	97
		No	68	70.1	
		I don't know	6	6.2	
23	Do you know what milk teeth is?	Yes	90	96.8	93
		No	3	3.2	
24	Has your child ever had a hole in their teeth?	Yes	23	24.2	95
		No	72	75.8	
25	What kind of toothbrush does your child use?	Soft	68	70.1	97
		Medium	26	26.8	
		Hard	2	2.1	
		Others	1	1	
26	Do you prefer to use herbal toothpaste rather than fluoride containing toothpaste?	Yes	21	21.2	99
		No	71	71.7	
		I don't know	7	7.1	

Salary	Frequency (n)	Percent (%)	Total
Below 30,000	10	11	91
30,000 - 50,000	22	24.2	
50,000 - 100,000	26	28.6	
Above 100,000	33	36.3	

Number of days	Frequency	Percent (%)
Once	3	3.1
Twice	1	1.0
Three times	2	2.1
Four times	2	2.1
Five times	73	75.3
Six times	10	10.3
Everyday	6	6.2
Total	97	100.0

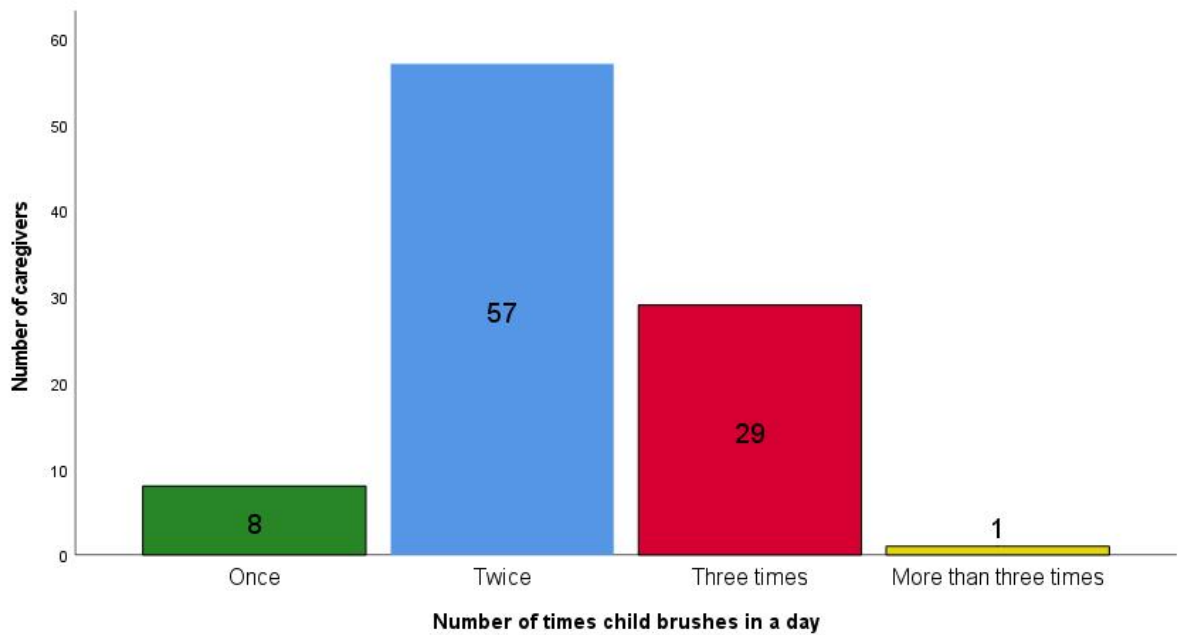


Fig. 1: Number of caregivers with the number of times their children brush in day.

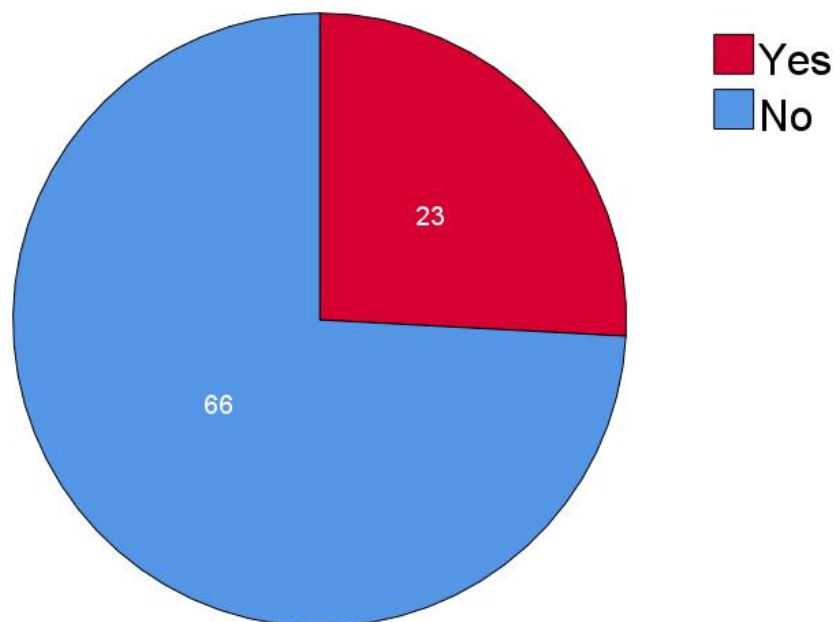


Fig. 2: Number of caregivers who have or have not visited a dentist with their children.

Ever been to a dentist with the children?	Reason for the visit								Total	
	Checkup		Cleaning		Tooth decay		Others			
	N	%	N	%	N	%	N	%	N	%
Yes	8	88.9%	2	66.7%	10	83.3%	2	66.7%	22	81.5%
No	1	11.1%	1	33.3%	2	16.7%	1	33.3%	5	18.5%
Total	9	100.0%	3	100.0%	12	100.0%	3	100.0%	27	100.0%

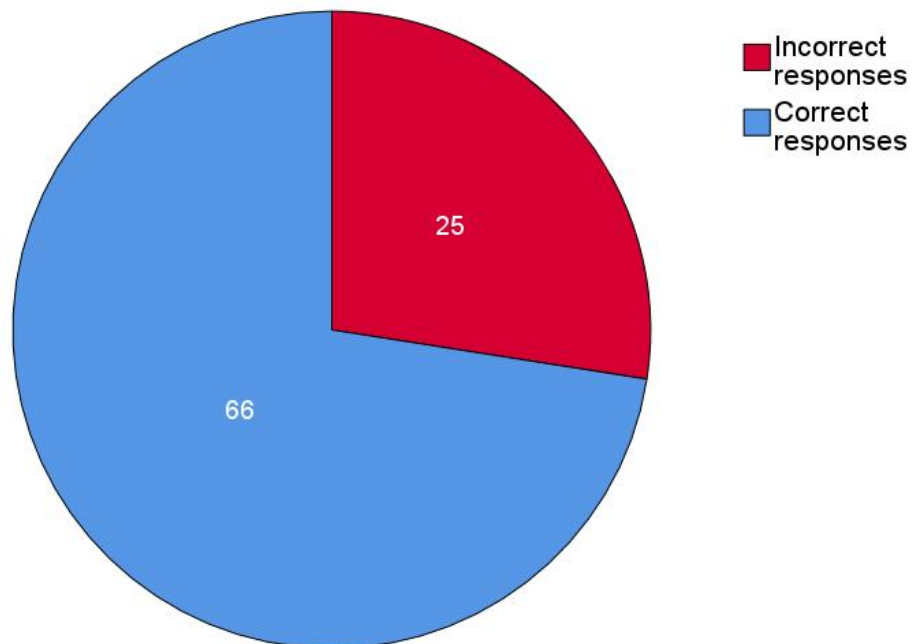


Fig. 3: Number of caregivers and their responses (correct/incorrect) to the question of what dental caries is (Q. 20).

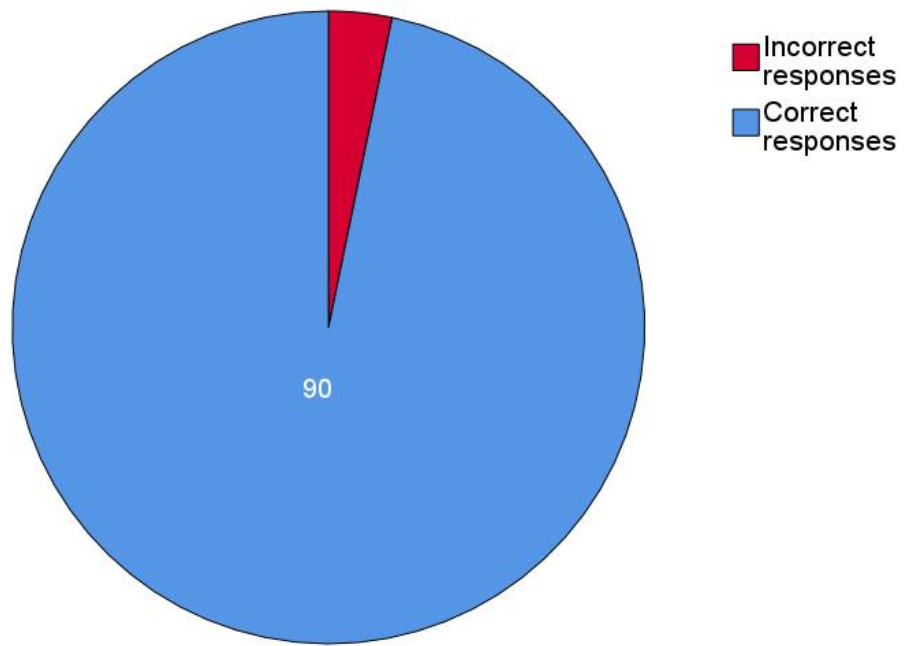


Fig. 4: Number of caregivers and their responses (correct/incorrect) to the question of what milk teeth are (Q. 22).

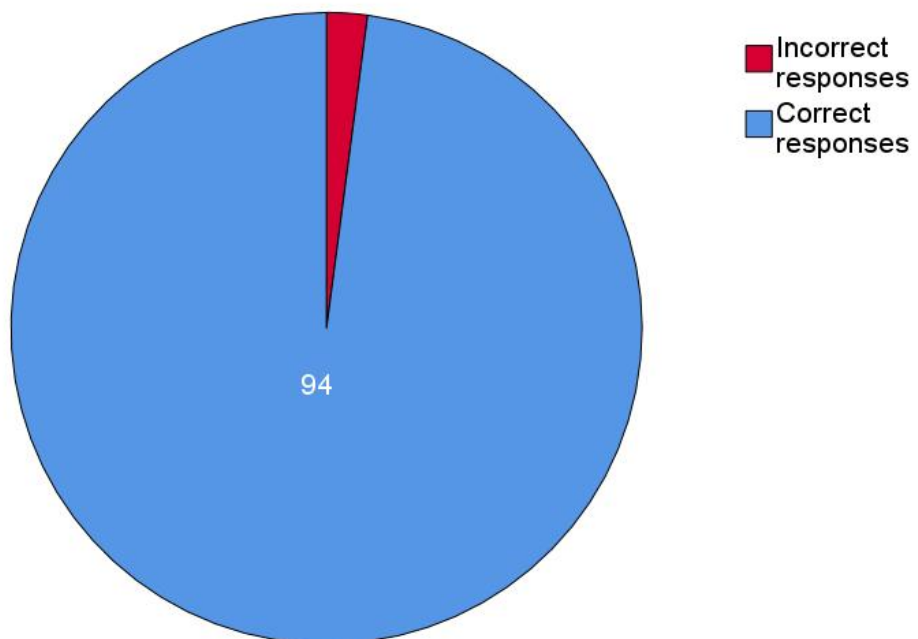


Fig. 5: Number of caregivers and their responses (correct/incorrect) to the question of whether milk teeth should be cared for (Q. 15).

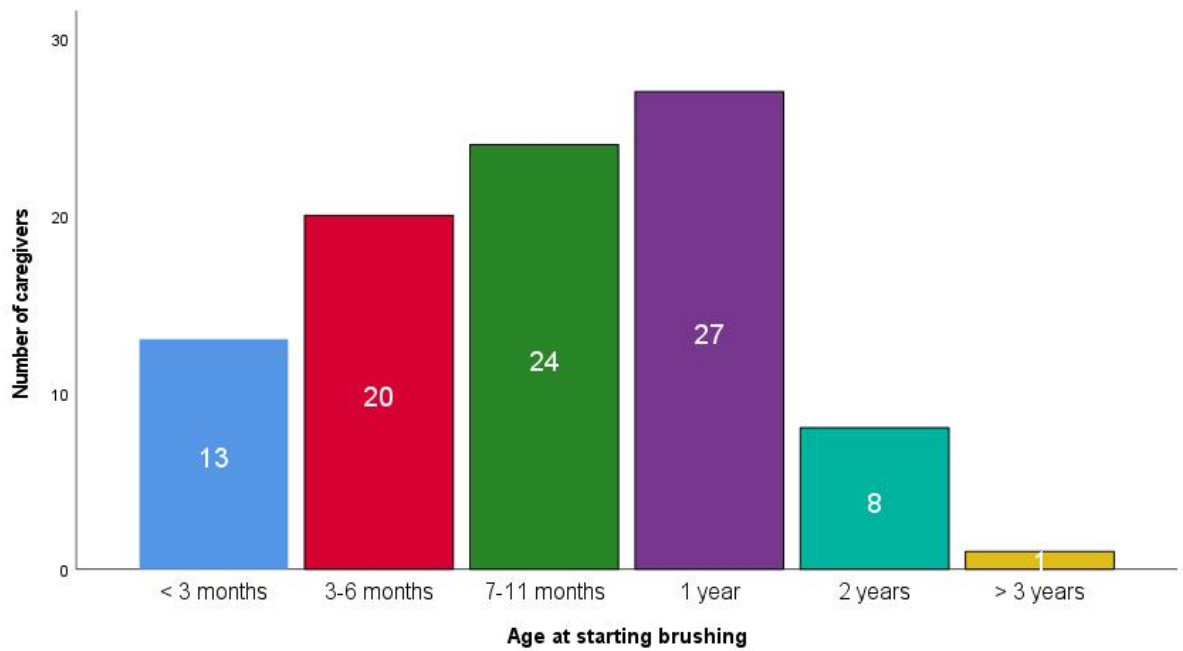


Fig. 6: Number of caregivers and the ages of their child when they start brushing of teeth (Q. 16).

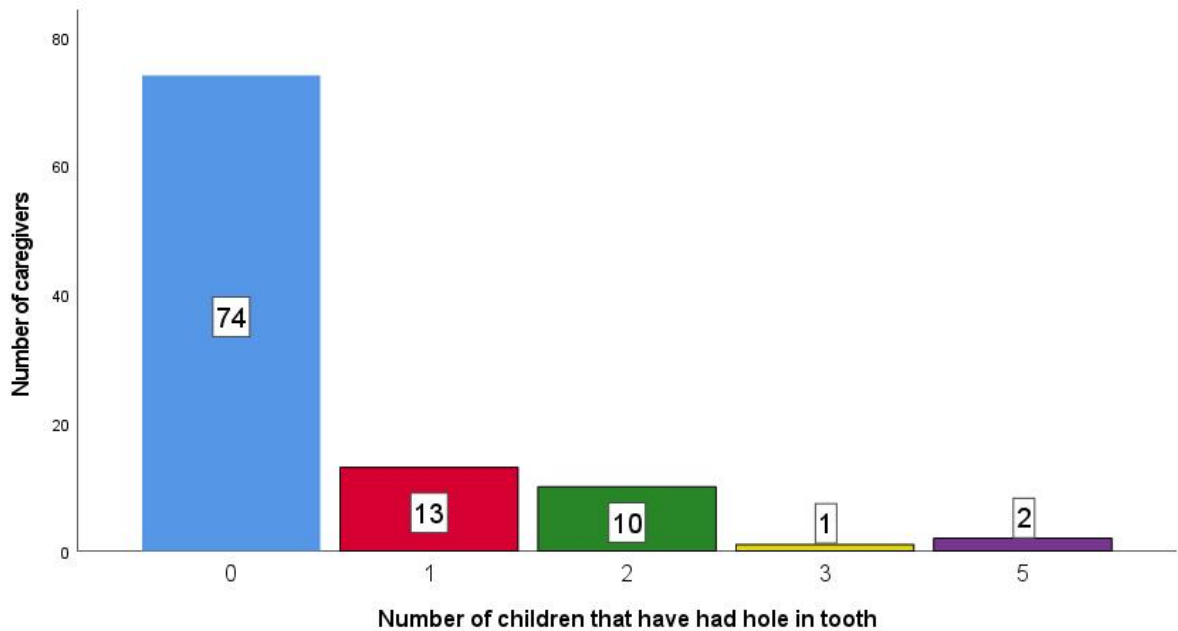


Fig. 7: Number of caregivers and the number of the children that have had a hole in tooth (Q. 17).

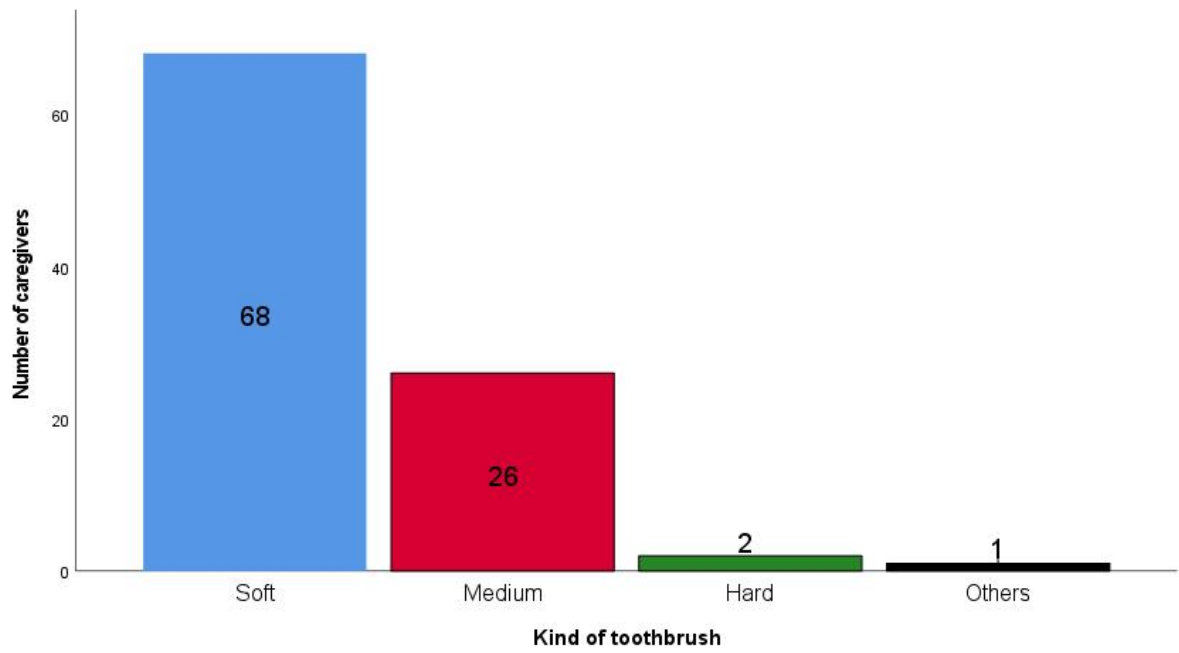


Fig. 8: Number of caregivers and the kinds of toothbrush their child uses (Q. 24).

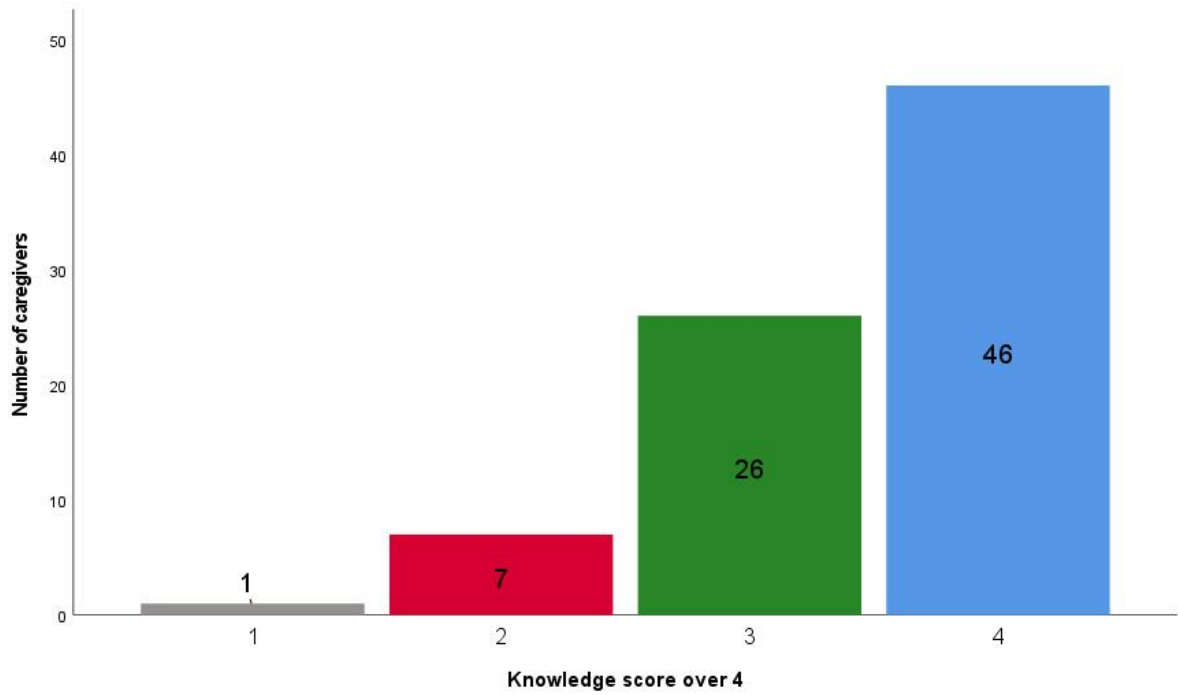


Fig. 9: Number of caregivers and their knowledge scores out of four knowledge questions.

Socio-demogarpic characteristic		Crosstabulation		P value
Gender		Know	Do not know	
	Male	21	10	0.17
	Female	25	24	

Chapter Five

DISCUSSION

5.1 INTERPRETATION OF FINDINGS:

Our study presents a comprehensive analysis of the knowledge and attitude of caregivers of pre-school children to dental caries.

5.1.1 SOCIODEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Approximately 63.6% of caregivers that answered the questionnaire are females while the remaining 36.4% are males.

Approximately 45.5% of caregivers fall within the age group of 31-40 years, 28.3 % within age group of 41-50 years and 23.2% within age group 18-30years.

Approximately 75.3% of caregivers are married, 18.6% are single, 2.1% are divorced and 4.1% of caregivers are widowed.

Approximately 88.9% of caregivers have tertiary education, 7.1% of caregivers have secondary education while 2% of caregivers have primary education. From our study, caregivers with higher education had better knowledge on oral practices with this being a favourable indicator of the caregiver's practice with regards the oral health of their preschool children.

Approximately 36.3% of caregivers earn above 100,000 a month while 28.6% earn between 50,000-100,000 naira monthly. 24.2% earn between 30,000 Naira to 50,000 Naira monthly. 11% of caregivers earn below 30,000 Naira monthly.

Approximately 75.3% of caregivers attend work 5 times a week, 10.3% of caregivers attend work 6 times a week, 6.2% of caregivers attend work 7 times a week, 2.1% of caregivers attend work 3 times a week, 2.1% of caregivers attend work 4 times a week, 3.1% of caregivers attend work once a week, 1% of caregivers attend work twice a week.

5.1.2 ASSESSMENT OF ATTITUDE OF RESPONDENTS:

Approximately 60% of caregivers brush their children's teeth twice daily. About 30.5% of caregivers brush their children's teeth 3 times daily. About 8.4% of caregivers brush their children's teeth once daily. About 1.1% of caregivers brush their children's teeth more than three times daily. From our study, majority of caregivers brush their children's teeth twice daily and this infers good oral health attitude and practices with attendant preventive effects on the development of dental caries.

Approximately 68.8% of caregivers supervise the brushing. 31.3% do not supervise the brushing. From our study, majority of caregivers directly supervise the brushing of their children. This is indicative of good oral health practice and attitude.

Approximately 74.2% of caregivers have not been to the dentist with their children. 25.8% have been to the dentist with their children. This finding from our study is indicative of poor oral health practice even though there is adequate knowledge (51.7% of caregivers know what dental caries is. 48.3% of caregivers do not know what dental caries is) and indication of good attitude (Approximately 87.6% of caregivers are not afraid of visiting the dentist. 12.4% of caregivers are afraid of visiting the dentist). Out of the 25.8% of caregivers that have been to the dentist, 45.5% presented because of tooth decay. 36.4% presented for routine dental check-up. 9.1% presented for cleaning. 9.1% presented for other reasons. Approximately 46.3% of caregivers acknowledged that their children do not snack at night. 34.7% caregivers acknowledged that their children snack at night. 18.8% could not ascertain if their children snack at night.

Approximately 96.9% of caregivers believe that milk teeth should be taken care of, while 3.1% believe that milk teeth should not be taken care of. From our study, most care givers believe that milk teeth are important. With this attitude being one of the variables most associated with absence or presence of early childhood caries.

Approximately 29% of caregivers started brushing their children's teeth by 1 year old. 25.8% of caregivers started brushing their children's teeth by 7 – 11 months. 21.5% of caregivers started brushing their children's

teeth between 3 – 6 months. 14% of caregivers started brushing their children's teeth less than 3 months. 8.6% of caregivers started brushing their children's teeth at 2 years. 1.1% of caregivers started brushing their children's teeth greater than 3 years.

Approximately 70% of caregivers claim that none of their children has ever had a hole in their teeth. 13% of caregivers claim that at least 1 of their children has had a hole in their teeth. 10% % of caregivers claim that at least 2 of their children has had a hole in their teeth. 2% % of caregivers claim that at least 5 of their children has had a hole in their teeth. 1% of caregivers claim that at least 3 of their children has had a hole in their teeth. From our study, most caregivers are aware of the oral condition of their children. This is evidence of good oral attitude which has a link to early intervention in stopping caries progression.

5.1.3 ASSESSMENT OF KNOWLEDGE OF RESPONDENTS

Approximately 51.7% of caregivers know what dental caries is. 48.3% of caregivers do not know what dental caries is. Approximately 70.1% of caregivers do not have a missing tooth as a result of dental caries, while 23.7% have a missing tooth as a result of dental caries. 6.2% of caregivers are not aware.

Approximately 96.8% of caregivers know what milk teeth is, while 3.1% of caregivers do not know what milk teeth is. Approximately 75.8% of

caregivers claim that none of their children has had a hole in their teeth, while 24.2% of caregivers acknowledge that their children has had a hole in their teeth.

Approximately 70.1% of caregivers use a soft bristle tooth brush for their children, 26.8% use a medium bristle toothbrush, 2.1% use hard bristle toothbrush, 1% use other unspecified forms of cleaning aids. From our study most caregivers have good oral practices as they use a soft bristle toothbrush for their children, although this is not indicative of knowledge of the role of bristle type to oral health.

Approximately 71.7% of caregivers do not prefer to use herbal toothpaste over fluoride containing toothpaste, while 21.2% prefer to use herbal toothpaste over fluoride containing toothpaste. 7.1% of caregivers do not know. From our study most caregivers prefer to use fluoride containing toothpaste over others which would infer their children also use it and therefore have protective factors over dental caries.

Approximately 87.6% of caregivers are not afraid of visiting the dentist. 12.4% of caregivers are afraid of visiting the dentist. 77.1% of caregivers think it is necessary to visit the dentist even without pain. 17.7% of caregivers do not think it is necessary to visit the dentist even without pain. 5.2% of caregivers are unaware of visiting a dentist with or without pain. From our study, majority of caregivers do not have a negative attitude to dental attendance and believe it is important to visit the dentist

with or without pain. This shows good oral attitude and knowledge on the importance of visiting a dentist.

Approximately 25.8% of caregivers do not like to visit the dentist because of the long waiting time. 21.5% of caregivers do not like to visit the dentist because of the cost. 14% of caregivers do not like to visit the dentist because of pain.

5.2 RECOMMENDATIONS:

1. It is crucial to increase awareness about dental caries, including knowledge and attitudes, among preschool children.
2. The focus should be on preventive, therapeutic, and rehabilitative measures for early childhood caries in preschool children. Caregivers should be educated and sensitized about this oral health issue.
3. It is important to emphasize the significance of regular dental clinic visits, regardless of the presence of dental caries or pain. Ideally, these visits should occur at least twice a year.
4. In order to compare this study with previous research, more extensive research needs to be conducted in the country.
5. The government should allocate additional resources for materials and equipment in dental clinics to ensure effective treatment for preschool children.

6. Caregivers of preschool children should be educated about the dangers of frequent nighttime snacking and discouraged from participating in this practice.

REFERENCES

1. Rathee M, Sapra A. *Dental Caries*. [Updated 2022 Jun 12]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan.
2. M Simratvir *Evaluation of caries experience in 3-6-year-old children, and dental attitudes amongst the caregivers in the Ludhiana city*
3. O O Olatosi, V Inem, O O Sofola, P Prakash: The prevalence of early childhood caries and its associated risk factors among preschool children referred to a tertiary care institution. *Nigerian Journal of Clinical Practice* 18(4):493-501
4. O I Iyun, O O Denloye, O O Bankole, B O Popoola: Prevalence and pattern of early childhood caries in Ibadan, Nigeria. *Afr J Med Med Sci*. 2014 Sep;43(3):239-44
5. Hsiu-Yueh Liu, Jung-Ren Chen, [...], and Shun-Te Huang: Caregivers' oral health knowledge, attitude and behavior toward their children with disabilities. *J Dent Sci*. 2017 Dec; 12(4): 388–395.
6. F Ashkanani, M Alsane: Knowledge, Attitudes and Practices of Caregivers in Relation to Oral Health of Preschool Children. *Med Princ Pract* 2013;22:167–172171
7. Olatosi OO, Inem V, Sofola OO, Prakash P, Sote EO. The prevalence of early childhood caries and its associated risk factors among preschool

children referred to a tertiary care institution. *Niger J Clin Pract* 2015;18:493-501.

8. Francisco Ramos-Gomez, Yasmi O Crystal, Man Wai Ng, Norman Tinanoff, John D Featherstone. Caries risk assessment, prevention, and management in pediatric dental care. *Gen Dent* 58 (6), 505-17, 2010

9. Robert J. Schroth, Douglas J. Brothwell & Michael E.K. Moffatt (2007) Caregiver knowledge and attitudes of preschool oral health and early childhood caries (ECC), *International Journal of Circumpolar Health*, 66:2, 153-167, DOI: 10.3402/ijch.v66i2.18247

10. Simratvir M, Moghe G A, Thomas A M, Singh N, Chopra S. Evaluation of caries experience in 3-6-year-old children, and dental attitudes amongst the caregivers in the Ludhiana city. *J Indian Soc Pedod Prev Dent* 2009;27:164-9

11. F Ashkanani, M Alsane: Knowledge, Attitudes and Practices of Caregivers in Relation to Oral Health of Preschool Children. *Med Princ Pract* 2013;22:167–172171

12. Mani S A, Aziz A A, John J, Ismail N M. Knowledge, attitude and practice of oral health promoting factors among caretakers of children attending day-care centers in Kubang Kerian, Malaysia: A preliminary study. *J Indian Soc Pedod Prev Dent* 2010;28:78-83

13. Goettems, ML, Nascimento, GG, Peres, MA, et al. Influence of maternal characteristics and caregiving behaviours on children's caries

experience: An intergenerational approach. *Community Dent Oral Epidemiol.* 2018; 46: 435– 441. <https://doi.org/10.1111/cdoe.12406>

14. Goettems, ML, Nascimento, GG, Peres, MA, et al. Influence of maternal characteristics and caregiving behaviours on children's caries experience: An intergenerational approach. *Community Dent Oral Epidemiol.* 2018; 46: 435– 441. <https://doi.org/10.1111/cdoe.12406>

APPENDIX I

INFORMED CONSENT FORM:

TITLE OF RESEARCH: ASSESSMENT OF CAREGIVERS' KNOWLEDGE AND ATTITUDE TO DENTAL CARIES – RISK FACTORS IN PRESCHOOL CHILDREN.

PURPOSE OF RESEARCH

- 1) To assess the level of caregivers knowledge on caries risk factors affecting preschool children which is very sacrosanct in effective management
- 2) The attitude of caregivers to predisposing risk factors of preschool children to dental caries and their behavioral adaptation during occurrence of dental caries.

PROCEDURES INVOLVED IN THE STUDY: In this study, caregivers will be asked questions regarding their knowledge, attitude of Caries risk factors affecting preschool children and their behavioral adaptation during occurrence of dental Caries

CONFIDENTIALITY: All data collected will be treated with utmost confidentiality. Participants who volunteer to take part in the study will be given a unique study number and data will be collected without including the names of participants taking part in the study. Participants' information will be stored safely, secured by codes in computers using only the study identification number. All those handling data will not at any time reveal respondents' identity.

FINANCIAL COMPENSATION: There shall be no payment for participation in this study.

VOLUNTARY PARTICIPATION: Your participation in this study is entirely voluntary and if you desire to withdraw out of this study at any time, no punitive measures will be meted out against you on account of your withdrawal. Your refusal to participate or withdrawal from the study will not involve any negative consequences or loss of benefit to which you are otherwise entitled to.

RISK: It is not expected that any harm will come to you because of your participation in this study. The study does not entail any activity that would result in harm to you.

BENEFIT: The study will help to educate and enlighten nursing student regarding preventive dental services and help them influence their attitude positively.

FINANCIAL SPONSORSHIP: This research is self-sponsored.

NAME AND AFFILIATION OF INVESTIGATORS:

ADARAMOLA MICHAEL TOSIN

CHUKUMAH ALMA ANWULI

EKHOE-OMORAGBON EFOSA

EMONENA OGHENETEJIRI GLORIA

IDAEWOR AIGBE

Department of Preventive Dentistry,

School of Dentistry,

University of Benin

PMB 1114

Benin City.

Edo State.

Email: Idaeworabel@gmail.com

Phone number: +2348167993673

If you have agreed to be a part of this study, please sign below. Thank you.

APPENDIX II

CERTIFICATE OF CONSENT

I have read the above information (or the content of the form has been read and explained to me). I have had the opportunity to ask questions on the procedure, purpose and requirement for this study which were explained to me in detail.

(A) I voluntarily consent to take part in this research ().

(B) I do not consent in this research ().

Name of Participant.....

Signature of Participant

Thumb print (if applicable)

Date of signed consent

Signature of researcher

Signature of researcher

APPENDIX III

QUESTIONNAIRE

QUESTIONNAIRE DESIGN ON THE ASSESSMENT OF CAREGIVERS' KNOWLEDGE AND ATTITUDE TO DENTAL CARIES – RISK FACTORS IN PRESCHOOL CHILDREN

Dear Respondent,

We are final-year dental students from the University of Benin, Nigeria, conducting a research study on assessing knowledge and attitudes toward factors contributing to dental caries. Participation is voluntary, and any information provided will be kept confidential and solely used for this research study. We kindly request your participation in answering all the questions.

Please, ✓ tick the appropriate response or fill in the necessary information wherever necessary.

I agree to participate in this survey []

Date: _____

KINDLY ANSWER ALL QUESTIONS TO THE BEST OF YOUR KNOWLEDGE.

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENT.

1. Age of the caregiver 18-30 31-40 41-50 51-60 61-70 >70
2. Male Female Others _____
3. Marital status of the caregiver? Single Married Divorced
Widowed
4. Tribe of the caregiver? Igbo Yoruba Hausa Bini Others
5. Education of the caregiver? Primary Secondary Tertiary
6. Average monthly salary of the caregiver? Below 30,000
30,000-50,000 50,000-100,000 Above 100,000
7. How many days a week do you go to work? 1 2 3 4 5 6
7
8. How many children do you have? 1 2 3 4 5 Others (Please specify) _____

SECTION B: ASSESSMENT OF ATTITUDE OF CAREGIVERS.

9. How many times does your child brush a day? Never 1 2
3 >3
10. Do you supervise each brushing? Yes No

11. If not, who supervises? House help Grandparent Aunty Uncle
Neighbor

12. Have they ever been to the dentist with their children? Yes No

13. If yes, what was the visit for? Checkup Cleaning Tooth decay
Others

14. Does your child snack at night? Yes No I don't know

15. Do you believe milk teeth should be taken care of? Yes No

16. At what age do you start brushing your child's teeth? < 3months
3-6month 7-12months 1 Year 2 Years 3 Years >3Years

17. How many children have ever had a hole in their teeth?

1 2 3 4 5 Others _____

18.. Are you afraid of visiting a dentist? Yes No

19.. If yes, Why?

Pain Cost Long waiting time Poor patient care

Others _____

20. Do you think visiting the dentist is necessary even without pain?

Yes No I don't know

SECTION C: ASSESSMENT OF KNOWLEDGE OF CAREGIVERS.

21. Do you know what dental caries is? (Tick as many boxes as
applicable) Hole in teeth Swollen gum Post eruptive disease of the

teeth characterized by breakdown of hard tissue due to acid produced by bacteria I don't know

22. Do you have any missing tooth lost due to caries? Yes No I don't know

23. Do you know what milk teeth is? (Tick as many boxes as applicable)

Baby teeth Primary teeth Adult teeth Wisdom teeth

24. Has your child ever had a hole in their teeth? Yes No

25. What kind of toothbrush does your child use?

Soft Medium Hard Others

26. Do you prefer to use herbal toothpaste rather than fluoride containing toothpaste? Yes No I don't know

APPENDIX V



UNIVERSITY OF BENIN TEACHING HOSPITAL

P.M.B. 1111 BENIN CITY NIGERIA

Telephone: 052-600418
Telex: 41120 NG
Website: ubth.org

CHAIRMAN, BOARD OF MANAGEMENT:

CHIEF ADEDOJA ADEWOLU, MFR

CHIEF MEDICAL DIRECTOR:

PROF. DARLINGTON E. OBASEKI

*MBBS (Benin), FMCPath
E-mail: darlobaseki@gmail.com*

DIRECTOR OF ADMINISTRATION:

M.O. JIMOH-KADIR

B. Sc. (Hons) FJPM, Dip. Theo. AHAN

HEALTH RESEARCH ETHICS COMMITTEE APPROVAL

PROTOCOL NUMBER: ADM/E 22/A/VOL.VII/14830194

PROPOSAL TITLE: "ASSESSMENT OF CAREGIVERS' KNOWLEDGE AND ATTITUDE TO DENTAL CARIES-RISK FACTORS IN PRESCHOOL CHILDREN"

PRINCIPAL INVESTIGATOR(S): ADRAMOLA M.T., CHUKMAH A.A., EKHOE-OMORAGBON E., ENONENA O.G., IDAEWOR A.

DEPARTMENT/INSTITUTION: COMMUNITY DENTISTRY, DEPARTMENT OF PREVENTIVE DENTISTRY, SCHOOL OF DENTISTRY, UNIVERSITY OF BENIN, BENIN CITY, NIGERIA

DATE CONSIDERED APRIL 17TH, 2023

DECISION OF THE COMMITTEE: APPROVED

THIS APPROVAL DATES 17/04/2023 TO 16/04/2024. IF THERE IS DELAY IN STARTING THE RESEARCH, PLEASE INFORM THE HREC SO THAT THE DATES OF APPROVAL CAN BE ADJUSTED ACCORDINGLY

REMARK:

CHAIRMAN: PROF. (MRS) A.N. OFILI

SIGNATURE & DATE *A.N. 17/04/2023*

SUPERVISOR (S): PROF SUNNY OKIEGBEMEN

DECLARATION BY INVESTIGATOR(S):

PROTOCOL NUMBER (please quote in all enquiries)

Note that no participant accrual or activity related to this research may be conducted outside of these dates. All informed consent forms used in this study must carry the HREC assigned number and duration of HREC approval of the study. In multiyear research, endeavor to submit your annual re-port to the HREC early in order to obtain renewal of your approval and avoid disruption of your research. No changes are permitted in the research without prior approval by the HREC except in circumstances outlined in the Code. The HREC reserves the right to conduct compliance visit your research site without previous notification.

Signature & Date *sh 28/04/23*

APPENDIX 6

UNIVERSITY OF BENIN TEACHING HOSPITAL,

BENIN CITY

DEPARTMENT OF PREVENTIVE DENTISTRY

INTERNAL MEMORANDUM

To: The Head, UBTH Staff School, Benin City	From: Prof. Sunny A. Okeigbemen Research Coordinator, Dept of Preventive Dentistry Date: 25/5/2023
---	--

REQUEST FOR PERMISSION

The undergraduate student research topic titled "Assessment of caregivers knowledge and attitude to dental caries risk factors in pre -school children" has been allocated to be conducted by a group dental students (led by Aigbe Idaewor) in your institution.

The research proposal has been approved by the Ethics and research committee of the Hospital.

This is to request your permission and necessary assistance.

Thank you



Professor Sunny A. Okeigbemen

Research Coordinator