

**EVALUATING THE EFFECTIVENESS OF THE TEXAS MEDICAID FIRST  
DENTAL HOME PROGRAM REGARDING PARENTAL KNOWLEDGE AND  
PRACTICE OF ORAL HEALTH CARE FOR CHILDREN**

A Thesis

by

CHARMAINE L. THOMPSON

Submitted to the Office of Graduate and Professional Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Chair of Committee  
Committee Members,

Emet D. Schneiderman  
Ernie S. Lacy  
Ann L. McCann

Head of Department

Van Wilson

May 2015

Major Subject: Education for Health Care Professionals

© Copyright 2015 Charmaine L. Thompson

## **ABSTRACT**

Early childhood caries (ECC) is a problematic disease that has been on the rise in young pre-school age children within the last decade. Children who have untreated dental disease early in life, are at increased risk of having poor oral health throughout their lifetimes. Approximately 70% of dental disease is found in only 20% of the nation's high-risk children. Professional organizations and governing bodies have formed several initiatives in order to help lower the prevalence of ECC in children. One such initiative, early preventive dental visits, i.e. dental home, has proven to be successful; yet, the evidence is limited in documenting its effectiveness.

First Dental Home (FDH) is the state of Texas Medicaid initiative to improve access to care for children. FDH was initiated to improve oral health-care for children aged 6 months to 35 months of age by providing simple, consistent messages regarding proper oral healthcare to the parents/caregivers of the children. Despite the large fiscal budget allocated towards the success of FDH, no studies regarding the program's effectiveness have been published to date. This study aimed to evaluate the effectiveness of the FDH by comparing the knowledge, practice and opinions of participating vs. non-participating parents regarding their young children. A 29-question survey was given to mostly low-income parents who visited qualifying Medicaid clinics in North Texas (Dallas/Fort Worth) and South Texas (Harlingen). A total of 165 parents

completed the survey. Several significant results emerged between the knowledge and practices responses of the parents sampled. On the knowledge section, FDH parents responded correctly more often than the non-FDH parents when asked about the recommended amount of toothpaste recommended for toddlers ( $p=0.023$ ). In addition, 79.6% of FDH parents vs. 21.1% of non-FDH parents knew that tap water is a potential source of fluoride ( $p < 0.001$ ). Regarding oral health practices, 80 % of FDH parents did not let their child go to sleep with anything such as a bottle, sippy cup or pacifier ( $p=0.01$ ). Furthermore, FDH parents scored higher on the overall knowledge score ( $p < 0.001$ ) and practice score ( $p < 0.001$ ). Based on our preliminary findings, FDH visits are having a positive impact on parents by not only increasing their oral healthcare knowledge, but also helping them implement what they have learned.

## **ACKNOWLEDGMENTS**

I would like to thank everyone who was instrumental in helping me complete this project. I am particularly grateful for my committee members Dr. Emet Schneiderman (chair), Dr. Ann McCann, and Dr. Ernie Lacy for their dedication and guidance in allowing this project to come to fruition. Without their patience, I could not have finished this project. I'm particularly grateful for the Texas A&M University Baylor College of Dentistry, particularly Drs. Alton McWhorter, Carolyn Kerins, and Martha Alvarez, for their initial time and investment for getting this project started. Special thanks to Ms. Darla Benson, for helping with the finishing touches of my thesis. Lastly, I want to acknowledge my husband, Greg Thompson, for his love and support throughout this entire journey.

## NOMENCLATURE

AAPD	American Academy of Pediatric Dentistry
AAP	American Academy of Pediatrics
ADA	American Dental Association
CDC	Community Dental Clinic
CHIP	Children's Health Insurance Program
DMFT	Decayed Missing Filled Teeth
ECC	Early Childhood Caries
EPDV	Early Preventive Dental Visits
FDH	First Dental Home
IRB	Institutional Review Board
MS	<i>Streptococcus mutans</i>
OR	Operating Room
S-ECC	Severe Early Childhood Caries

## TABLE OF CONTENTS

	Page
ABSTRACT .....	ii
ACKNOWLEDGMENTS .....	iv
NOMENCLATURE .....	v
TABLE OF CONTENTS .....	vi
LIST OF TABLES .....	vii
LIST OF FIGURES .....	viii
CHAPTER I INTRODUCTION .....	1
CHAPTER II MATERIALS AND METHODS .....	14
Instrument .....	14
Sample .....	15
Survey Procedures .....	16
Analysis .....	19
CHAPTER III RESULTS .....	21
CHAPTER IV DISCUSSION .....	26
CHAPTER V SUMMARY AND CONCLUSION .....	35
Conclusion .....	35
REFERENCES .....	36
APPENDIX .....	41

## LIST OF TABLES

TABLE	Page
1 Statistics: Participant's Survey Site .....	46
2 Statistics: Percentage of FDH vs. Non FDH Participants .....	47
3 Statistics: Age of Participant's Children .....	51
4 Statistics: Sample Distribution .....	53
5 Comparison: Knowledge Questions Answered Correctly .....	54
6 Comparison: Composite Knowledge Score .....	55
7 Comparison: Practice Questions Answered Correctly .....	55
8 Comparison: Practice Composite Score .....	56

## LIST OF FIGURES

FIGURE	Page
1 English vs. Spanish Participants.....	42
2 Ethnicity of Participants .....	43
3 Gender of Participants .....	44
4 Participant's Dental Insurance .....	45
5 Percentage of Participants at Each Survey Site .....	48
6 Percentage of FDH vs. Non FDH Visits .....	49
7 Percentage of Participant's Children by Age .....	50
8 Frequency of Dental Visits .....	52
9 Knowledge Question Comparison: Amount of Toothpaste Recommended .....	57
10 Practice Question Comparison: Do you let your child go the bed with .....	58
11 Corrected Knowledge Question Comparison: Amount of Toothpaste Recommended .....	59
11A Corrected Knowledge Question Comparison: Fluoride Source .....	60
12 Composite Practice Score Comparison:.....	61
13 Composite Knowledge Score Comparison: .....	62



# CHAPTER I

## INTRODUCTION

Early childhood caries (ECC) are particularly problematic in setting the stage for a lifetime of dental disease and poor oral health. This can ultimately affect their quality of life. Therefore, it becomes important, especially in children, to maintain good oral health due to the direct impact on the overall health of the individual. It is commonly known that tooth decay is the most common chronic childhood disease, five times more common than asthma and seven times more common than hay fever (1). Despite this commonality, dental caries in children has not been a high priority for the lay population until the last two decades. Now, among pediatric dentists and pediatricians, the trend is to start early with educating parents on how to establish optimal oral health with their children at an early age in order to decrease the prevalence of ECC. This is in response to the Surgeon General's 2000 report to increase the importance of oral health care in the United States (1). To be effective for children, healthcare providers need to understand and help prevent the disease development along with being able to explain the process in simple terms for parents to understand during early prevention visits. The present study evaluated a strategy for addressing this problem in Texas with the Texas Medicaid First Dental Home program. This program is designed for dental providers to provide a package of dental

preventive services aimed at improving the oral health of children 6 - 35 months of age.

Dental caries is a contagious and infectious process. Dental caries is caused from acidic by-products of essentially two types of microorganisms, *Streptococcus mutans* (MS) and lactobacillus that are present in normal human flora in adults (2). MS has been isolated from human dental decay and is the predominant causative agent of dental caries (3), while the lactobacillus species are more involved with the continuation of the carious disease process (2). The microorganisms associated with severe early childhood caries (rampant decay) have been studied intensively. Two early colonizers, MS and *Streptococcus sanguinus*, are involved with early dental disease in children (4)(5). *S. sanguinis*, a predominant species in oral biofilm, has been usually associated with good dental health (5). Even with rampant decay in children, it has been shown that MS is the initiator of the disease (4). Although children are not born with *S. sanguinis*, it is believed that *S. sanguinis* precedes colonization of MS and is the first bacterial species to colonize an infant's mouth. As far back as 1970, Carlson et al. showed that *S. sanguinis* does not become established before the eruption of the first teeth; however, colonization does occur before the presence of MS (6).

Since both MS and *S. sanguinis* are the early colonizers, it was thought they exhibited an antagonist relationship between each other (7). This antagonistic theory between the organisms was corroborated when it was

demonstrated that early colonization and elevated levels in *S. sanguinis* resulted in significant delay of colonization of MS (7). In contrast, after colonization of MS, the levels of *S. sanguinis* decreased (7). However, a study published in 2008 suggested that the interaction of *S. sanguinis* with MS influences the dental caries status in children (8). This shows that there is more to be learned about this interaction between these bacteria and possibly other bacteria involved in the carious process. Many of the earlier studies involved with isolating the bacteria found in dental caries, were done at a time when isolation and cultivation of oral bacteria was a difficult process. Now, advanced microbial techniques have allowed for more isolation of organisms involved in the carious process and it appears to be a complex, dynamic process. Regardless, it is still believed that MS is the main culprit of dental caries.

It was commonly thought that MS does not colonize in most infants until the eruption of the primary dentition, ranging from about 6 months to 30 months of age (window of infectivity). However, more recent studies have found the bacteria in a small percentage of pre-dentate children as early as two months (9)(10). Although bacteria can be detected before teeth erupt, the general tenet is that cariogenic bacteria require a non-shedding structure (teeth) to adequately colonize (11). The average age of the first tooth to erupt usually occurs around 6 to 7 months, thus, if colonized by the MS bacteria, this becomes the age that children become susceptible to early childhood caries. Moreover, as more teeth

erupt, the more bacterial colonization takes place, which increases the chances of tooth decay.

Since children are not born with the carious MS bacteria and are only heavily colonized with these microbes after eruption of teeth, they have to obtain these organisms from the environment. Children's acquisition of MS occurs either vertically or horizontally. Vertical transmission occurs when a child acquires the bacteria from the mother or caregiver, which has been shown by identical genotypes of MS amongst the child and mother (12)(13). However, not all genotypes of MS in children match their mothers, indicating that other sources exist. In a Brazilian nursery, matching genotypes of MS were among the children (14). Horizontal transmission occurs from members of the same group, most likely siblings or children of the same age at daycare (15). Interestingly enough, infant infection of MS was nine times greater when maternal salivary levels of the organism exceed the necessary threshold (12). This means that mothers with poor oral health and high levels of MS are at a high risk of infecting their children and potentiating their chance of obtaining caries at an early age (16).

Knowing how children acquire MS can help prevent the carious process that leads to tooth decay. This is important because untreated tooth decay has many consequences and complexities not commonly known including excess school absences, pain, malocclusion, and low self-esteem. In some instances it even can be life threatening (17) (18) (19). However, mainstream American

media has not focused on this silent oral epidemic disease because approximately 70% of all dental caries are found in 20% of the nation's children (1)(19). Most of the active decay occurring in the United States is within a small group of people, categorized as a high caries risk group. The high-risk group primarily consists of children who are from a low socioeconomic environment.

Dental decay is a treatable and preventable disease. After understanding the microbial aspect of the disease, it becomes important to figure out who is highly susceptible to the disease. The Caries Risk Assessment Tool provided by the American Academy of Pediatric Dentistry (AAPD) was designed to identify the groups or individuals that were at high risk of developing caries. By simply asking questions about dietary practices, fluoride exposure, oral hygiene practices, utilization of dental services, and mother's carious history, the practitioner can get an indication of the mother's carious baseline potential and thereby determine the risk status of the child (15). It is presumed that the mother's carious risk is directly correlated to her child's carious risk status. However, first identifying children as a high caries risk, does not solve the problem of preventing early childhood decay.

The traditional approach of preventing caries consists of having good oral hygiene, optimizing fluoride exposure (systemic and topical) and, most importantly, eliminating prolonged exposure to simple (fermentable) sugars in diet. All of these are good prevention strategies. However, with the rise in incidence of early childhood caries, it was realized that despite being targeted by

the dental community, members of this high caries risk population were not being made aware of these caries prevention strategies. The rise in caries triggered professional organizations such as the AAPD and the American Academy of Pediatrics (AAP) to generate initiatives to combat caries in young children.

In the early 2000s, the establishment of a “dental home” became a concept to potentially lower the prevalence of early childhood caries, particularly in the high caries risk group. The dental home is modeled after the AAP concept of the medical home, which was defined in 1992. The AAP stated, “Medical care of infants, children and adolescents ideally should be accessible, continuous, comprehensive, family-centered, coordinated, compassionate and culturally effective” (20). Medical homes have become important because there is strong evidence that many people from a low socioeconomic background utilize the hospital emergency room for basic care and as their main healthcare provider (21).

Since 1992, it has been demonstrated that patients with an established medical home are less likely to use hospital emergency room visits and, thereby, decrease cost (22). With the reduction of health care costs from the establishment of a medical home, it seemed logical for dentistry to undertake a dental home initiative. In 1997, one study examined dental caries-related emergencies and showed the emergency room was the first contact with a dentist for 52% of children who were 3.5 years or younger (18). This alarming

statistic gives a strong indication that many young children would benefit from having a dental home. By establishing a dental home early in life, children will potentially be able to obtain proper preventive and oral health care maintenance. Using this model, pediatric dentists hope that an early dental home will result in fewer visits to the emergency room and fewer complete dental rehabilitation visits in the operating room setting under general anesthesia.

The AAPD encourages parents and providers to help children with the establishment of a dental home at one year of age or the eruption of the first tooth (22). Further, they recommend that a dental home consist of the following:

- a. **Comprehensive oral healthcare** - an oral examination that includes an assessment of general growth, extra- and intra-oral soft tissues, temporomandibular joint (TMJ), occlusion, oral hygiene and periodontal health, intra-oral hard tissue, caries risk and behavior of the child.
- b. **Individualized preventive dental health program** - establishing the frequency of professional preventive services, i.e., prophylactic cleanings, fluoride supplementation, removing plaque, stain and calculus, microbial monitoring, antimicrobial therapy based on the caries risk assessment and parental/child's behavior and involvement.
- c. **Plan for acute trauma** - instructing parents about injury prevention and first-aid measures if injury occurs.

- d. **Anticipatory guidance** - providing age-appropriate practical advice about children's oral health to prepare parents for significant milestones.
- e. **Dietary counseling** - Explaining the role of carbohydrates and refined sugars and dental caries while encouraging healthy snack options.
- f. **Referrals to specialists when needed** - situations may arise that are beyond the scope of the practitioner's expertise. These cases require a consultation with the appropriate specialist.

The dental home provides many opportunities to ascertain a child's oral health status and employ prevention strategies in an attempt to lower the child's risk of dental disease.

Although the AAPD recommends the establishment of first dental home by the age of 12 months, Texas is one of the few states to establish a statewide Medicaid dental home program. Throughout the nation, there are approximately 17 Medicaid statewide programs that reimburse (\$15- \$45) for a basic exam/assessment and fluoride varnish application (23). In Texas, under the ADA code D0145 (oral evaluation and preventive services under the age of three), ADA, the primary provider, is reimbursed for \$144.97 for this umbrella of services for a dental home visit. In fact, with Texas's Dental Home program, children are able to visit the dentist as early as six months. First Dental Home (FDH) is the Texas legislative Medicaid-based dental initiative aimed at



improving the oral healthcare of children from the ages of 6 months to 35 months of age.

FDH provides the training to licensed general and pediatric dentists in the state of Texas to provide a dental home to children who are at a high caries risk. Included in the first dental home is a caries risk assessment, dental prophylaxis, oral hygiene instructions with the primary caregiver, fluoride varnish application, anticipatory guidance, and establishment of a three-month recall schedule, if necessary. The requirement is that at least one parent must be present in the dental exam room and actively involved with the dental team at these appointments. During these visits, the provider's objective is to educate the parents and/or caregivers of these children with simple, consistent messages on how to properly take proper dental care of their children.

The need for a FDH program in Texas becomes compelling when looking at the statistics. In 2007, a study of three- to five-year-old children in Texas found that about 27% had tooth decay or early childhood caries (24). Approximately 8% required urgent dental care due to pain, swelling, infection and bleeding during a dental screening (24). It can cost an average of \$2000 to \$5000 to treat a child with early childhood caries (23). If a child is very young or uncooperative in the dental clinic, this treatment typically has to be done in the operating room under general anesthesia, which contributes to the high cost. The cost of full-mouth dental rehabilitation for children under general anesthesia requires Medicaid or other insurance sources to pay not only for the dental

procedures, but the use of the surgery center and anesthesia must also be factored into the cost equation. A study in 2004 concluded that starting proper oral hygiene practices by the age of one reduced dental cost in comparison to children who had their first visit after the age of one (25).

Texas's Medicaid Program consists of a limited number of about 200 pediatric dentists to cover approximately 1.2 million children (23). Although these numbers are from 2007 and the number of pediatric dentists in Texas has increased, there are still not enough pediatric dentists to cover the increasing population of children enrolled in Medicaid. The Texas FDH initiative assumes that more general dentists will participate given the higher reimbursement rate (23). Allowing general dentists to participate creates greater access to care, establishing more dental homes for children who may not necessarily have had access to a pediatric dentist (23). Several studies have found that most children have their first dental visit by the age of four (26). At age four, high-risk children have acquired bad practices and dietary habits that have been well established in most cases. By establishing early dental homes for children in Texas, it is hoped that educational and preventive regimens provided to the parent will prevent a child from getting early childhood caries and therefore, reduce the overall dental cost of treating young children.

Currently, over 46 states reimburse providers for early preventive dental visits. Research, regarding dental homes and early dental visits, is limited and has generated mixed reviews regarding support of these initiatives. A

systematic review published in 2014 evaluated the effectiveness of four retrospective, cohort studies regarding early preventive dental visits (EPDV). The authors concluded that evidence supporting the effectiveness of EPDVs and the recommended first dental visit at the age of one is weak, and more research is needed to validate the effectiveness of these preventive visits (18). However, they stated that the benefits of EPDVs of children before the age of three years with existing disease or high-caries risk are evident (27).

As early as 2004, it was shown that Medicaid-enrolled children who had early preventive dental visits were more likely to use subsequent preventative services and experience lower dental-related costs (28). Furthermore, another study concluded that more preventive visits were associated with fewer non-preventive dental visits and lower non-preventive dental expenditures; however, having more preventive visits did not reduce the overall dental cost (29). A conference paper examining the cost-effectiveness of early dental visits concluded that preschoolers who were enrolled in Medicaid and had early preventive visits by the age of one were more likely to use subsequent preventive services and incur lower dental-related expenses (30). In contrast, another study suggested that children who had a primary or secondary preventive visit by the age of 18 months had no difference in subsequent dental outcomes when compared to children in older-age categories (31).

The studies aforementioned were conducted in North Carolina, not Texas. Research regarding the effectiveness of the FDH in Texas is extremely

limited and has yet to be published in professional journals. Two graduate theses performed at Texas A&M Health Science Center, Baylor College of Dentistry found significant findings regarding the effectiveness of FDH visits in Texas. McFarland's thesis examined the FDH program in both an urban and rural setting to evaluate the impact of caries severity, age of onset of decay and treatment location by comparing FDH participants to those who have only had traditional Medicaid recalls (19). She found that FDH children who experienced decay before 36 months of age had reduced severity of decay when compared to children who only had traditional recall visits. Koesters in his thesis performed a retrospective chart review from a private practice in south Texas and was able to demonstrate that FDH subjects had a lower caries incidence and decreased number of decayed, missing, filled teeth (DMFT score) compared to the reference group (33).

Despite the inconsistent evidence, it seems logical that early dental home visits are one of the best ways to prevent the increase in early childhood caries. Public insurance such as Medicaid and Children's Health Insurance Program (CHIP) have invested heavily in expenditures for early preventive/dental home visits. Texas in particular has doubled the reimbursement rate for the bundled preventive services as a means to encourage more providers to participate and increase access to care for high-risk children. In order to justify the expense of dental home preventive visits, more research is needed to prove its effectiveness. This study developed a survey questionnaire to evaluate the

effectiveness of dental home visits in Texas regarding parents' attitudes towards oral care for their children. The purpose of this study was to assess the effectiveness of the Texas Medicaid FDH program by comparing the knowledge, practices, and opinions of participating and non-participating parents and so measure the impact of the program

The research questions that this study aimed to answer are as follows:

1. What knowledge do parent have regarding oral healthcare?
2. What are parents' attitudes regarding oral healthcare?
3. What oral home care regime do the parents currently practice?
4. Are there differences between the FDH participating and non-participating groups?

## CHAPTER II

### MATERIALS AND METHODS

#### Instrument

In designing this study, a 29-question survey was developed to capture the oral healthcare knowledge, practice and opinions of parents with young children. Questions 1 to 5 were demographic questions targeting previous dental use and dental-care management of the child. The next section, questions 5 through 15, were all knowledge questions constructed to specifically test the main principles targeted in the First Dental Home (FDH) visits. The next section, questions 16 through 21, focused on obtaining the current dental practices of these parents with their children. The end of the survey contained questions (22 through 26) regarding the parental opinions and/or attitudes toward oral health. The survey concluded with questions 26, 27 and 29 asking the age, race and ethnicity of the parents taking the survey. At the very end of the survey, there was an open-ended section for parents to leave any comments they deemed appropriate regarding the survey.

Upon completion of the survey, a panel of experts from Texas A&M University Baylor College of Dentistry faculty reviewed and edited the survey to improve clarity and efficiency. After approval from the expert panel, a pilot test of the survey was given to five parents at two of the community dental clinics (CDCs) that were going to be used in the full study. The survey was slightly

revised to incorporate grammatical changes that were made in response to the pilot testing. Two bilingual dental professionals from Baylor College of Dentistry translated the English language survey into Spanish.

### Sample

Participants were low-income parents who visited qualifying Medicaid dental clinics or practices with their children ranging from 6 to 35 months; the children were regarded as being at high risk for early childhood caries. The original qualifying clinics in the Dallas/Fort Worth metropolitan area included Texas A&M Baylor College of Dentistry and four Community Dental Clinics (CDCs) (Vickery-Meadows, East-Dallas, DeHaro and Bluit-Flowers). A sixth site, Su Clinica Familiar, from south Texas (Harlingen) was added that was socio-economically and ethnically similar to the DFW sites. At each of these sites, parents were invited to fill out the survey. Those who had participated in FDH were compared to those who were non-participants to evaluate the program's impact on oral health knowledge, practices and attitudes of the parents. Identification of the patient sample selection consisted of using the ADA 0145 code, which is the billing code used for the FDH visits and the ADA 0120, the billing code indicated for a regular periodic exam. The principal investigator (PI) collected a list of patients, the sampling frame, from the various clinics using the above-mentioned ADA codes.

## Survey Procedures

Once the qualified patients were identified, the principle investigator (PI) worked closely with the office/scheduling staff to either identify the patient's next appointment or to schedule an appointment with the patient's parent to administer the survey. For subjects who were not due for an exam/recall visit, parents were called and the purpose of the research project was explained. These parents were offered a \$20.00 incentive to come to the dental clinic to complete the survey. At each survey distribution, the parents were given a survey, with the appropriate language, to be read and filled out. The surveys were collected and placed in a secure survey collection envelope until the data were analyzed. Ultimately, the projected sample size was based upon a power analysis. Expected effect size used here (ES) was based on three related studies. Rothe et al. found a mean increase in oral health knowledge of 13.2% (SD=9%) in parents after being exposed to a 30-minute educational PowerPoint presentation (34). Cotter et al. examined dental hygienists' knowledge about oral cancer and risk factors and obtained a mean knowledge score of 53% (SD = 17%) (35). Similarly, Pettit et al. evaluated oral health knowledge scores of nurses practicing in the hospital setting and obtained mean knowledge scores of 51% (SD=13%) (36). Setting both alpha and beta to 5% and using the ES of 13.2% yielded sample sizes of 15 per group. Similarly, if we are to expect a 15% or greater improvement of the sort of knowledge scores seen Cotter et al. and Pettit et al., but use the highest observed standard deviation of 17%, we



found that samples of 35 per group are needed (34) (36). Combining these analyses, we settled on samples of 25 at each site for a total of 125 subjects.

Initially, the number of subjects projected to be needed was determined by a sample size calculator; it indicated a sample size of 262 should be selected for a population size of 100,000 based on an error rate of  $\pm .05$ . Estimating a 75% response rate, the actual number of parental participants needed for the sample was 349 for each group. Due to the large numbers of participants that were required, other techniques were sought to determine the sample size.

Ultimately, the projected sample size was based upon a power analysis. Expected effect size used here (ES) was based on three related studies. Rothe et al. found a mean increase in oral health knowledge of 13.2% (SD=9%) in parents after being exposed to a 30-minute educational PowerPoint presentation (34). Cotter et al. examined dental hygienists' knowledge about oral cancer and risk factors and obtained a mean knowledge score of 53% (SD = 17%) (35). Similarly, Pettit et al. evaluated oral health knowledge scores of nurses practicing in the hospital setting and obtained mean knowledge scores of 51% (SD=13%) (36). Setting both alpha and beta to 5% and using the ES of 13.2% yielded sample sizes of 15 per group. Similarly, if we are to expect a 15% or greater improvement of the sort of knowledge scores seen Cotter et al. and Pettit et al., but use the highest observed standard deviation of 17%, we found that samples of 35 per group are needed (34) (36). Combining these analyses, we settled on samples of 25 at each site for a total of 125 subjects.

At each site, 25 people were identified and selected from the sampling frame by using SPSS random sampling. This allowed the sample sites to be made into mutually exclusive groups where random sampling from each group helped improve the representativeness of the sample from the respective sites. After collecting surveys from approximately 35 subjects over the course of two months, it became obvious to the PI that this sampling approach would not lead to adequate sub-sample sizes at any of the sites. From this point forward, nonprobability sampling, specifically convenience sampling, was used for this survey. This approach made it possible to obtain an adequate sample number needed in a limited amount of time.

We chose several clinics in different regions of the Dallas/Fort Worth Metroplex that were less affluent areas, making it very probable that the sampling frame represented the targeted population. This study was approved and given an exempt status by the Institutional Review Board of Texas A&M Health Science Center - Baylor College of Dentistry on 02/21/2011 (IRB # 2011-05-EXM).

Preliminary data analysis revealed that more samples of non-FDH subjects were needed to have adequate power. During this time, the principle investigator relocated to South Texas. To obtain the adequate number of subjects, the remaining non-FDH subjects were surveyed at Su Clinica Familiar, a community clinic located in Harlingen, TX, using a convenience sampling method. New patients under 35 months were identified by the front desk staff

and given the appropriate language survey to fill out along with new patients' forms. The surveys were collected by the front desk staff and given to the principle investigator for analysis.

### Analysis

SPSS statistical software, version 21 (IBM, Chicago) was used to analyze the data. The majority of the responses to questions were nominal so that the Chi-square test was used to test for differences in proportions. The questions where the responses were ordinal, for example the age category of the child in Question 2, were analyzed with the Mann-Whitney U test. The alpha level was set to  $p < 0.05$  for determining significance. Overall knowledge and practice scores were calculated for each participant.

To calculate the composite knowledge score, 11 questions designed to test the knowledge of infant oral health were selected from the survey. The knowledge questions were Questions 6 through 15 on the survey. For each knowledge question, the correct response was given a score of one. Incorrect responses were given a score of zero. Questions 5, 6, 13 and 15 had two correct answers; each of the two correct answers was given a score of one. Two questions, Questions 10 and 11, had several correct answers. For these two questions, each answer was treated as separate individual knowledge questions and each correct response was given a score of one. The total knowledge score was calculated for each sample. The highest knowledge score that could be obtained was 20.

The practice questions on the survey were Questions 16 through 21. An overall practice score was generated with the practice questions that contained a correct or incorrect practice recommendation. Out of the six total practice questions, only three questions (Questions 17, 19 and 21) met these criteria and were used to calculate the practice score. The correct practice responses of each question received a score of one, while the incorrect responses were scored as zero. The sum of each question was calculated for all samples to get an overall composite score. The highest composite practice score that could be obtained was three.

## CHAPTER III

### RESULTS

At the end of this study, 165 participants completed the survey. There were 79 Spanish and 86 English-speaking patients (Figure 1). A majority of parents identified as being Hispanic (83.8%, Figure 2) and female (79.5%, Figure 3). Out of the 165 patients, 144 of the subjects were enrolled and insured by Texas Medicaid (Fig 4). Survey administration occurred at six different Community Dental Clinics in which five were located in the Dallas/Fort Worth area. The Dallas/Fort Worth Community Dental Clinics contributed to a total of 44% (73) subjects with Bluit Flowers 4.8% (8), DeHaro, 2.4% (4) East Dallas 14.5% (24), Vickery Meadows 7.3% (12) and Baylor 15.2% (25) respectively (Figure 5 and Table 1). The South Texas Community Dental Clinic, Su Clinica Familiar, was the site from which 55.8% (92) of the subjects were drawn (Figure 5). The majority of the survey respondents reported not having a prior FDH visit for their child. Just under 1/3 (29.7%) had prior FDH visits, whereas the remainder had not had a FDH visit (Figure 6 and Table 2).

Approximately 42% of the parents responded that their child was between 6 to 12 months (Figure 7 and Table 3). About 10% of the children were between the ages of 13 to 18 months (Figure 7 and Table 3). About equal numbers of subjects had children who were 19 to 24 months (15.2%) or 25 to 35 months old (15.2%) (Figure 7 and Table 3). Out of the total sample, about 16% of the

children were 35 months or older (Figure 7 and Table 3). Nearly half of the parents stated that they had either zero or one visit to the dental office with their child (Figure 8). A summary of the demographics is shown in Table 4.

The survey was constructed with questions that were grouped into the following components: knowledge, practice and opinions of the parents of young toddlers. The knowledge questions were aimed at testing how much parents knew about the current dental recommendations for children based on the guidelines of the AAPD. The responses on knowledge questions are shown in (Table 5). There were four knowledge questions that both groups answered correctly over a threshold of 80%.

**Knowledge Question 1:** What is needed for a cavity to occur? Correct Answer: (FDH - 5.7%) and (non-FDH - 82.7%)

**Knowledge Question 6a:** What should you check for in your toddler's mouth? Correct Answer: (FDH - 93.9) and (non-FDH - 96.5)

**Knowledge Question 7c:** Where can your child get fluoride (vitamins) for teeth? Correct Answer: (FDH - 98%) and (non FDH - 90.4%)

**Knowledge Question 11:** At what age should your child have their first dental visit? Correct Answer: (FDH - 100%) and (non-FDH - 92.7%)

Several crucial findings emerged. The FDH parents gave the correct response for the recommended amount of toothpaste for toddlers significantly more often than their non-FDH counterparts ( $p=0.023$ ) (Figure 9). The correct response was a "smear" in which the FDH respondents answered 50% correctly in comparison to the non-FDH respondents at 30%. This question was adjusted because two answers were correct. After the adjustment for the two correct

answers on this question, FDH parents answered 75% correct and the non-FDH scored approximately 50% correct ( $p < 0.001$ , Figure 11).

Fluoride can be acquired from various sources. One question in the survey was aimed at testing if parents knew the potential sources of fluoride. Although the overall question did not yield a statistical difference between the groups, a significant finding was found with regard to parents choosing the tap water response. Significantly, more FDH parents (79.6% vs. 21.1%) knew that fluoride could be obtained from tap water ( $p < 0.001$ , Table 5).

Another significant finding was the composite knowledge scores ranged from 4 to 17, with the FDH group scoring significantly higher than the non-FDH group ( $p < 0.001$ , Table 6, Figure 13). Of the FDH parents, 87.8% received a knowledge score of 12 or better, in comparison to 73.9% of the non-FDH parents (Figure 13). Approximately 6% the non-FDH parents had very low scores ranging from 4 to 8 (Figure 13). Interestingly, none of the FDH parents received a score of less than 9 (Figure 13). The other knowledge questions did not show any significant differences between the two groups.

For most of the knowledge questions, both groups answered most questions above a 60% threshold (Table 5). However, there were two questions in which both groups, as a whole, answered incorrectly, with a threshold of less than 60%.

**Knowledge Question 3:** What is needed for a cavity to occur? Correct Answer: (FDH - 57.4%) and (Non-FDH - 56.4%)

**Knowledge Question 5:** How much toothpaste should you use to brush your child's teeth? Correct Answer: (FDH - 51% vs. non-FDH - 28.9%)  
The practice questions were designed to determine if parents were

actually practicing the recommendations that are stressed at dental home visits.

The results of the individual practice questions generated several significant differences between the FDH and non-FDH parents regarding dental practices with their children (Table 7). A major significant finding was that more FDH parents (80%) did not let their children go to sleep with anything such as a bottle, sippy cup or pacifier ( $p=0.01$ , Figure 9). Only 50% of the non-FDH responded that they did not let their children go to sleep with any type of object (Figure 9). The non-FDH group that allowed their children to sleep with a sleep-soothing object chose the bottle (30%). This vastly differs from the FDH in which only 5% of the sample chose the bottle for sleeping. The maximum practice score that could be obtained was three. FDH parents scored a mean score of 2.77 vs. the non-FDH parents with 2.33 ( $p<0.001$ ). The analysis of the practice score showed 78% of FDH parents scored a three vs. 39% of the non-FDH ( $p<0.01$ , Figure 12). Dramatically more FDH parents obtained the highest practice scores of three in comparison to the non-FDH parents (Figure 12).

It has been recommended by the American Academy of Pediatric Dentistry that a child should have his or her first dental visit as early as six months but no later than the child's first birthday. A marginally significant difference was found between the two groups ( $p=0.051$ ). All of the FDH parents answered the question correctly ( $p=0.01$ ), whereas only 92.7 % of the non-FDH parents did so.



Regarding the opinion questions between the groups, all of the group differences were non-significant. Of the 165 subjects, only two provided comments to the open-ended questions.

## **CHAPTER IV**

### **DISCUSSION**

Since the beginning of the new millennium, it has been established that dental caries is the most common widespread epidemic in the United States. The presence of dental caries is particularly high in susceptible populations such as those that are considered having a low educational-level, low socioeconomic status, or disability. Both the elder population and young children are equally vulnerable to dental caries. Acknowledging this endemic, forced professional organizations and governing bodies to form initiatives targeted to prevent dental decay. Preventive initiatives have been successful in lowering the caries rate in certain groups such as young adolescents, which could partially be due to the increase of sealants placed on permanent teeth (37). However, the incidence of caries in young preschool children in the United States continues to rise (38).

Putting in place regular, preventive visits for young children appears to be a difficult task. This could be due to parents' opinions regarding oral care for themselves and their children. A majority of dentists can relate to the difficulty of explaining the importance of primary (baby) teeth. Many parents feel they should not have to care about baby teeth because they are just going to fall out anyway. It is these views that cause many parents not to take their children to the dentist early, and often, so that by the time they finally decide to go to the dentist, dental decay has already occurred. A study published in 2012

concluded that parents, who had children less than two years of age, perception of their child's oral health is poorly correlated to the child's actual clinical needs, which were often underestimated (39). This means that most parents did not know that their children had unmet dental needs and furthermore, by the time they noticed their child's dental problems, they have exacerbated to the point of requiring treatment with moderate conscious sedation or under general anesthesia in an OR setting.

Parents' poor attitude regarding oral health is one of the many reasons why EPDVs, such as dental homes, are needed and encouraged. Dental home visits give healthcare professionals an opportunity to educate parents on dental decay and allows the practitioners to identify carious risk factors and incipient lesions if they have occurred. Further, dental home visits allow for the practitioner to identify small carious lesions if they are present. Small carious lesions are usually easy to manage and early identification can prevent extensive damage from occurring. In many cases, the early detection and treatment of small carious lesions can preempt the need for expensive treatment requiring moderate conscious sedation or general anesthesia in the OR. Dental homes are not only important for preventing dental decay but potentially serve as a cost-effective way to render dental treatment, should the need occur. This is the rationale behind 46 out of the 50 states opting to reimburse oral healthcare preventive services.

However, gross analysis of Medicaid utilization in the United States revealed less than 37% of children enrolled in Medicaid received any type of dental services (40). Research regarding the effectiveness of dental home visits has been limited. The Texas FDH initiative is unique in that it actually encourages early dental visits from six months of age and every three months until the age of three for high-risk children. In addition, the Texas FDH has put in place a high reimbursement for bundled preventive services in order to get more providers to participate and increase access to dental care. Because the Texas Medicaid Program has allocated a large amount of money for early dental visits, more research is needed to evaluate the effectiveness of FDH. To date, no journal articles have been published regarding the efficacy of the Texas FDH.

However, two graduate theses conducted at the Texas A&M Health Science Center, Baylor College of Dentistry, were able to demonstrate that FDH is causing progressive changes with oral healthcare among young children. McFarland was able to show that FDH patients in Texas are seen almost five months earlier than traditional Medicaid recall patients (32). She was also able to show that for those patients who experienced decay before the age of 36 months, their average dmft score was more than two points lower than the Medicaid patients who did not have the FDH visits (32). Furthermore, with those same patients, she indicated 30% more of the FDH patients could be treated in the dental office, which resulted in a reduction in the use of OR for treatment (32). Similarly, Koesters demonstrated in his thesis that FDH patients from a

single private practice when compared to the non-FDH reference group, had a lower caries incidence and dmft scores (39). Both of the studies indicate that the FDH is making a huge impact in Texas and could result in a huge decrease in caries prevalence and dental treatment expense.

Consistent with these similar studies, the present study was able to demonstrate that FDH is effective. We were able to show that FDH parents were significantly more aware of the importance of not letting their children go to sleep with anything such as a bottle or sippy cup. Prolonged use of a bottle or sippy cup while asleep, is deleterious and may be the most important factor in the development of early childhood caries (41). The use of nursing-bottle and sippy-cup feeding during sleep intensifies the risk of caries, since the salivary flow and oral clearance decrease during sleep (42). Empirically, whenever a child comes into a dental practice at a young age and the front four maxillary incisors are decayed, it's almost always reported that the child uses a bottle or sippy cup during sleep.

Furthermore, more parents were able to identify tap water as source of fluoride. This is an important finding because fluoride has been instrumental to the prevention, inhibition and reversal of caries (43). The CDC regards community water fluoridation as one of the ten great public health achievements of the 20th century, largely due to the decline of dental caries in the past 60 years (44).

Despite the prevention of caries with fluoride, fluorosis can occur with excess amounts of fluoride ingestion in children (44). To lower the prevalence of fluorosis, the AAPD recommends a smear amount of toothpaste for children less than two and a pea-size amount of toothpaste for children two to five years old (48). In our study, more FDH parents knew that only a smear is needed to brush their child's teeth. Approximately 51% of FDH chose smear vs. 21% of the non-FDH parents. Although the overall proportion of parents getting the questions correct is not overly high, this shows a highly significant difference between the two groups. It should be mentioned that over 80% of our subjects identified their children as being two years old and less, therefore, a smear was the correct response that should have been chosen. However, for this question, a pea-size amount was also an answer choice. Being that our target subjects were between the ages of zero and 36 months, both smear and pea-size could be viewed as the correct answer, which could have attributed to the overall low scoring. By correcting for this by including both smear and pea-size for correct answers, the FDH still scored significantly higher (75% vs. 50%) than the non-FDH parents. These results conclusively show that FDH parents were more likely to recognize the proper amount of toothpaste needed to be beneficial and not harmful to their child.

Individually, most of the knowledge questions did not reveal significant differences between the FDH and non-FDH parents. However, when all of the knowledge questions were grouped together for an overall composite score, the

FDH subjects scored significantly higher. This indicated that parents who have had FDH visits had an overall higher knowledge of dental health. When looking at the graph of the knowledge scores shown on Figure 13, the non-FDH had a normal statistical distribution (unimodal), which was expected. On the other hand, the FDH responses were bimodal with two distinct peaks indicating many FDH parents did really well, while the other half responded similarly to the non-FDH parents. This could be due to the fact that more consistency may be needed with providers to make sure a clear, concise message is delivered to the parents. Another less sanguine interpretation is that there is a subpopulation of parents whom are resistant to learning about improving their children's oral health.

When comparing the recommended oral health practices of the AAPD and AAP, an overall higher practice score was found among the FDH subjects. Over 80% of the FDH parents chose the practice recommendations that are recommended by the AAPD and stressed in FDH home visits. This is important because as we know, it is not only important to know information but you have to implement what you learn in order for it to become effective. Often times having knowledge does not translate into a change in lifestyle. Our results affirm that FDH is having a positive impact on the oral health practices of parents for their children.

In addition, we were able to show with marginal significance that the FDH parents knew that their children were supposed to visit the dentist between six

months of age and the age of one. This is potentially a key finding because many of the published studies found that most children did not visit the dentist until the age of four years (26). As mentioned prior, the early visits allow the healthcare provider to prevent and possibly identify problems before anything major happens that would require extensive treatment.

These two findings are very significant when viewed globally. The fact that US parents have a good understanding of dental knowledge indicates that the preventive programs in place are working. For instance in Kosovo, a developing country in southeast Europe, ECC represents a severe health problem, and dental preventive programs have not been established. As recent as 2014, a study in this country concluded that the highest decayed, missing and filled teeth (dmft) index scores were from children whose mothers have only finished primary or secondary school (45). Furthermore, the study stated that the Kosovian mothers displayed insufficient knowledge regarding dental visits, feeding, oral hygiene maintenance and utilization of fluoride/antimicrobial agents (46). When we compare dental knowledge of US mothers to those in developing nations, it is obvious that as a nation, we are making progress with the overall oral health agenda.

It is possible that we were unable to demonstrate significant differences between the two groups in their responses to the individual knowledge questions because the parents may be getting dental knowledge elsewhere. When comparing the average knowledge score between the two groups, FDH



averaged an approximate score of 70% (14/20) while non-FDH averaged about 63% (12.6/20). This indicated that even though the FDH scored higher, the non-FDH still had a good grasp of knowledge regarding overall oral health. With the invention of search engines and internet sites, information is readily accessible. We live in the time when everything can be “Googled”. It would not be surprising if many of the parents have looked on search engines to find information regarding dental care. Awagu recently showed that more than 60% of parents who bring their children to the pediatric dentist in Dallas search for oral health information on the internet (47). Further, since children are more likely to visit the pediatrician than the dentist, many pediatricians are providing preventative services (46). Most states will reimburse pediatricians for oral counseling and fluoride application (48). Therefore, even though some parents are not having FDH visits, they are still being educated about dental health from the primary physician.

A possible limitation of the study was that the majority of the non-FDH parents were from South Texas (Harlingen) whereas the majority of the FDH parents were from the Dallas/Fort Worth area in North Texas. Because the survey was administered in these two different parts of Texas (Dallas-North and Harlingen-South), one cannot be completely certain that the samples from these two regions represent the same population. Although we targeted the same socioeconomic population, underlying regional subtleties may have been present, which could have led to differences that could have skewed the results.

Also, after analyzing the survey, several questions were ambiguous and contained more than one correct answer. Although we corrected for multiple answers in the resultant analysis, some questions could have confused the parents and caused them to choose an incorrect response.

The present study has demonstrated that parents' practices with regards to their children's oral health can be improved with FDH. What remains to be shown definitively is that this improved parental knowledge translates into decreases in the incidence of ECCs. Future investigations that focus on this latter question will have the greatest impact if they calculate Number Needed to Treat (NNT), that is, how many parent-child units need to receive FDH to prevent one new carious lesion, or to prevent one child from needing to go to the OR for extensive restorative treatment. Such information will allow the rigorous comparison of costs to society for early FDH visits vs. later restorative and OR costs. Such economic models could also incorporate missed school or work (by parents) due to toothache and dental/hospital visits. Based on our findings and the preliminary evidence concerning ECC reductions (32, 33) and knowing that a FDH appointment costs \$144.07 vs. an average OR session of \$2000, we anticipate that FDH will be.

## **CHAPTER V**

### **SUMMARY AND CONCLUSION**

#### Conclusion

Overall, the Texas FDH is making a difference. This study is only a first step towards demonstrating how the first dental home visits are making a difference for parents and their children who are at high risk of dental decay. Still, more research is needed to prove it is efficacious, thus justifying the large amount of money allocated in the Medicaid budget for FDHs.

## REFERENCES

1. U. S. Surgeon General. Oral Health in America: A Report of the Surgeon General. Accessed 02/14/2015. Available at [www.surgeongeneral.gov/library/reports/oralhealth/index.html](http://www.surgeongeneral.gov/library/reports/oralhealth/index.html).
2. Tanzer JM, Livingston J, Thompson AM. The microbiology of primary dental caries in humans. *J Dent Educ* 2001; 65: 1028-1037.
3. Loesche WJ, Rowan J, Straffon LH, Loos PJ. Association of *Streptococcus mutans* with human dental decay. *Infect Immun* 1975; 11: 1252-1260.
4. Berkowitz R. Etiology of nursing caries: a microbiologic perspective. *J Public Health Dent* 1996; 56(1): 51-59.
5. Becker MR, Paster B, Leys EI, Moeschberger ML, Kenyon SG, Galvin JL, Bosches SK, Dewhirst Fe, Griffen AI. Molecular analysis of bacterial species associated with childhood caries. *J Clin Microbiol* 2002; 40(3): 1001-1009.
6. Carlsson J, Grahnen H, Jonsson G, Wikner S. Establishment of *Streptococcus sanguis* in the mouth of infants. *Arch Oral Biol* 1970; 15: 1145-1148.
7. Caufield PW, Dasanayake AP, Li Y, Pan Y, Hsu J, Hardin JM. Natural history of *Streptococcus sanguinis* in the oral cavity of infants: evidence for a discrete window of infectivity. *Infect Immun* 2000; 68: 4018-4023.
8. Y Ge, Caufield PW, Fisch GS, Li Y. *Streptococcus mutans* and *Streptococcus sanguinis* colonization correlated with caries experience in children. *Caries Res* 2008; 42(6): 444-448.
9. Flono FM, Klein MI, Pereira AC, Goncalves BR. Time of initial acquisition of mutans Streptococci by human infants. *J Clin Pediatr Dent* 2004; 28(4): 303-8.
10. Tankkunnasombut S, Youcharoen K, Nisultisak W, Vichayanrat S, Tiranathangal S. Early colonization of mutans Streptococci in 2- to 36-month-old Thai children. *Pediatr Dent* 2009; 31(1): 47-51.

11. Berkowitz RJ. Mutans streptococci: acquisition and transmission. *Pediatr Dent* 206; 28(2): 106-9.
12. Berkowitz RJ, Turner J, Green P. Maternal salivary levels of Streptococci mutans and primary oral infection of infants. *Arch Oral Biol* 1981; 26(2): 147-149.
13. Berkowitz RJ, Jones P. Mouth-to-mouth transmission of the bacterium *Streptococcus mutans* between mother and child. *Arch Oral Biol* 1985; 30(4): 377-379.
14. Graner-Mattos RO, Li Y, Caufield PW, Duncan M, Smith DJ. Genotypic diversity of mutans of *Streptococcus* in Brazilian nursery children suggest horizontal transmission. *J Clin Microbiol* 2001; 39(6): 2313-2316.
15. American Academy of Pediatric Dentistry Reference Manual. Guideline on periodicity of examination, preventive dental service, anticipatory guidance/counseling and oral treatment for infants, children, and adolescents. 2014; 36 (special issue): 118-126.
16. Ramos-Gomez FJ, Weintraub JA, Gansky SA, Hoover CI, Featherstone JD. Bacterial, behavioral, and environmental factors associated with early childhood caries. *J Clin Pediatr Dent* 2002; 26 (2): 165-173.
17. Blumenshine SL, Vann WF, Gizlice Z, Lee JY. Children's school performance: impact of general and oral health. *J Public Health Dent* 2008; 68 (2): 82-7.
18. Sheller B, Williams BJ, Lombardi SM. Diagnosis and treatment of dental caries-related emergencies in children's hospital. *Pediatr Dent* 1997; 19 (8): 470-5.
19. Benjamin RM. Oral health: the silent epidemic. *Public Health Rep* 2010; 125 (2): 158-159.
20. American Academy of Pediatrics Ad Hoc Task Force on the Definition of the Medical Home. The medical home. *Pediatrics* 1992; 90 (5): 774.
21. American Academy on Pediatric Dentistry Reference Manual. Guideline on perinatal oral health care. 2014; 36 (special issue): 135-140.
22. American Academy of Pediatric Dentistry Reference Manual. Guideline on caries-risk assessment and management for infants, children, and adolescents. 2014; 36 (special issue): 127-134.

23. Health and Human Service Commission. FREW Medical and Dental Strategic Initiatives. October 2007. Available at [www.hhsc.state.tx.us/about\\_hhsc/Advisorycommittee/docs/Briefing%20Paper-First%20Dental%20Hoje.doc](http://www.hhsc.state.tx.us/about_hhsc/Advisorycommittee/docs/Briefing%20Paper-First%20Dental%20Hoje.doc).
24. First Dental Home. Texas Department of State Health Services. First Dental Home Training- PDF. Accessed 02/14/2015. Available at: <http://www.dshs.state.tx.us/dental/pdf/FDH-training.doc>.
25. Savage M, et al. Early preventive dental visits: effects on subsequent utilization and costs. *Pediatrics* October 2004; 418-423.
26. Malik-Kotru G, Kirchner L, Kisby L. An analysis of the first dental visit in a federally qualified health center in a socio economically deprived area. *J Clin Dent* 2009; 33: 263-268.
27. Bhaskar V, McGraw K, Divaris K. The importance of preventive dental visits from a young age: systematic review and current perspectives. *Clin Cosmet Investig Dent* 2014; 6: 21-27.
28. Savage MF, Lee JY, Kotch AB, Vann WF. Early preventive dental visits: effects on subsequent utilization and cost. *Pediatrics* 2004; 114(4): 414-423.
29. Sen B, Blackburn J, Morrissey MA, Kilgor ML, Becker DJ, Caldwell C, Menachem N. Effectiveness of preventive dental visits on reducing non-preventive dental visits and expenditures. *Pediatrics* 2013; 131(61): 1107-1113.
30. Lee JY, Bowens TJ, Savage MF, Vann WF. Examining the cost-effectiveness of early dental visits. *Pediatr Dent* 2006; 28: 102-107.
31. Beil H, Rozier RG, Preisser JS, Stearn SC, Lee JY. Effect of early preventive dental visits on subsequent dental treatment and expenditures. *Med Care* 2012; 50(9): 749-756.
32. McFarland T, Kerins C, Viswanathan K, Schneiderman E. Five-Year Effectiveness Texas First Dental Home Program. Thesis, Texas A&M University, College Station. August 2014.
33. Koesters JF. Effectiveness of an early childhood caries-risk assessment and prevention program in Texas after 3 years. A retrospective chart review. Thesis, Texas A&M University Health Science Center, College Station. August 2011.

34. Rothe V, Kebriael A, Pitner S, Balluff M, Salama F. Effectiveness of a presentation on infant oral health care for parents. *Int J Pediatr Dent* 2010; 20 (1): 37-42.
35. Cotter JC, McCann AL, Schneiderman ED, De Wald JP, Campbell PR. Factors affecting the performance of oral cancer screening by Texas dental hygienist. *J Dent Hyg* 2011; 85(4): 326-34.
36. Pettit SL, McCann AL, Schneiderman ED, Farren EA, Campbell PR. Dimension of oral care management in Texas hospitals. *J Dent Hyg* 2012; 86(2): 91-103
37. Tomar SL, Reeves AF. Changes in the oral health of U.S. children and adolescents and dental public health infrastructure since the release of the Healthy People 2010 objectives. *Acad Pediatr* 2009; 9 (6):388-395.
38. Dye BA, Tan S, Smith V. Trends in oral health status: United States, 1988-1994 and 1999-2004. *Vital Health Stat* 11 2007; 248 :1-92.
39. Divaris K, Vann WF, Baker AD, Lee JY. Examining the accuracy of caregivers' assessment of young children's oral health status. *J Am Dent Assoc* 2012; 143(11): 1237-1247.
40. United States Government Accountability Office. Oral Health: Efforts underway to improve children's access to dental service, but sustained attention needed to address ongoing concerns. Publication No. GAO-11-96. United States Accountability Office, Washington D.C. 2010. Available at <http://www.gao.gov/assets/320/312818.pdf>.
41. Reisine S, Douglass JM. Psychosocial and behavioral issues in early childhood caries. *Community Dent Oral Epidemiol* 1998; 26: 45-48.
42. Berkowitz R. Cause treatment and prevention of early childhood caries: a microbiologic perspective. *J Can Dent Assoc* 2003; 69(5): 304-307.
43. American Academy of Pediatric Dentistry. Guidelines on fluoride therapy. *Pediatr Dent* 2008; 30: 121-5.
44. CDC. MMWR Morb Mortal Wkly Report. 2008; 57(27): 737-741.
45. Beqzati A, Bytyci A, Mega K, Latifi-Xhemajli B, Bensha A. Mothers' behaviors and knowledge related to caries experience of their children. *Oral Health Prev* 2014; 2:133-140.

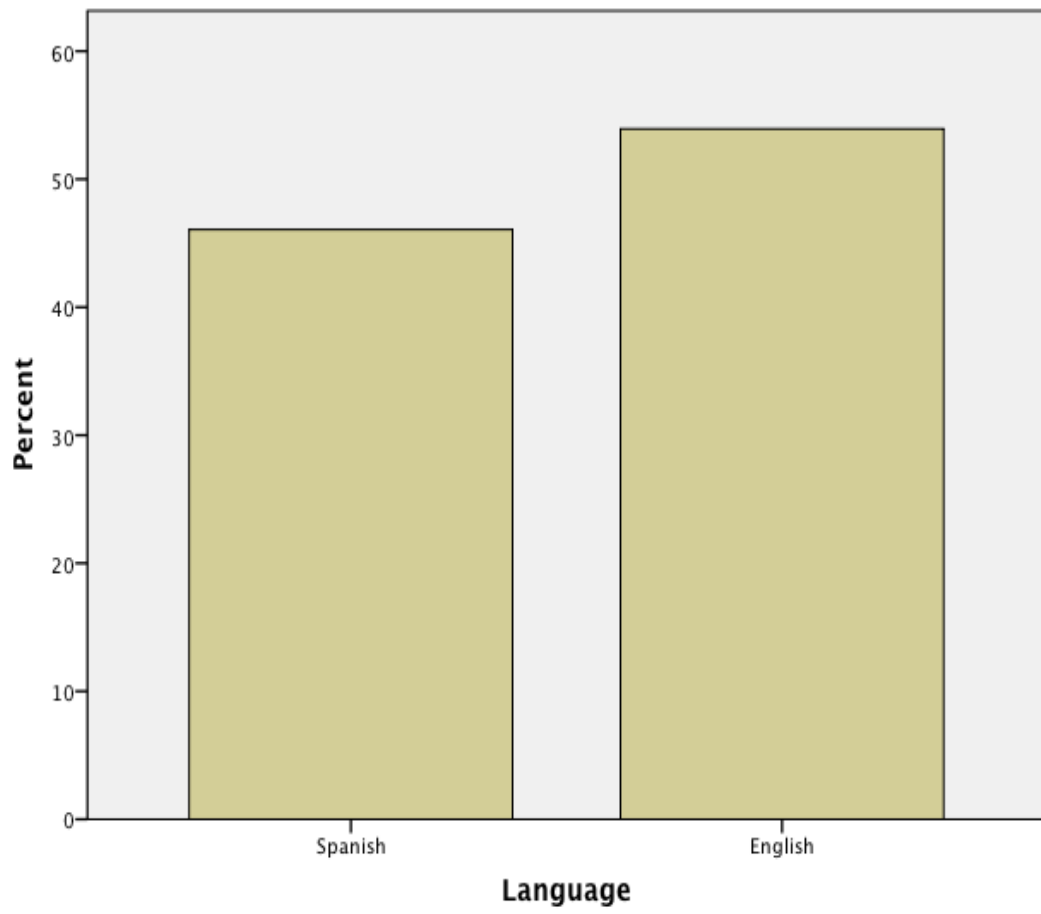
46. Achembong LN, Kranz AM, Rozier RG. Office-based preventive dental program and statewide trends in dental caries. *Pediatrics* 2014; 133(4): 827-834.
47. Awagu SC. The use of the internet to access oral health-related information by parents of pediatric dental patients. Thesis, Texas A&M University Health Science Center, College Station. December 2011.
48. Kranz AM, Rozier RG, Preisser JS, Stearns SC, Weinberger M, Lee JY. Comparing medical and dental providers of oral health services on early dental caries experience. *Am J Public Health* 2014; 104(7): e92-e99.



## APPENDIX

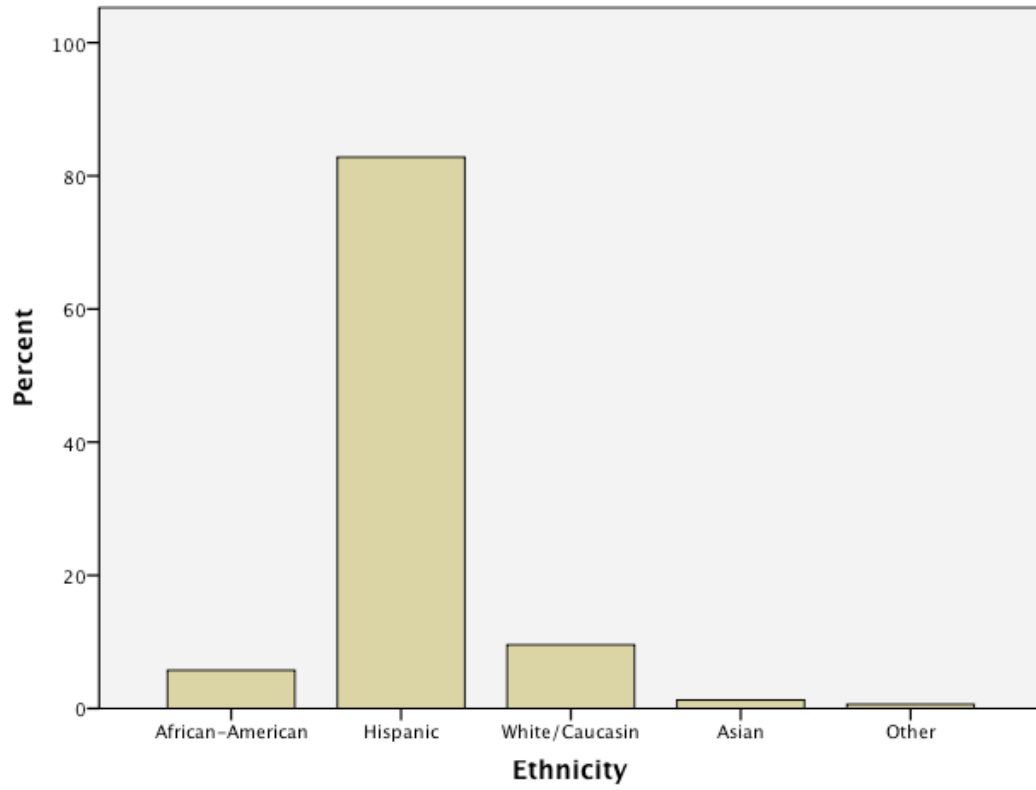
**Figure 1**

**English vs. Spanish Participants**



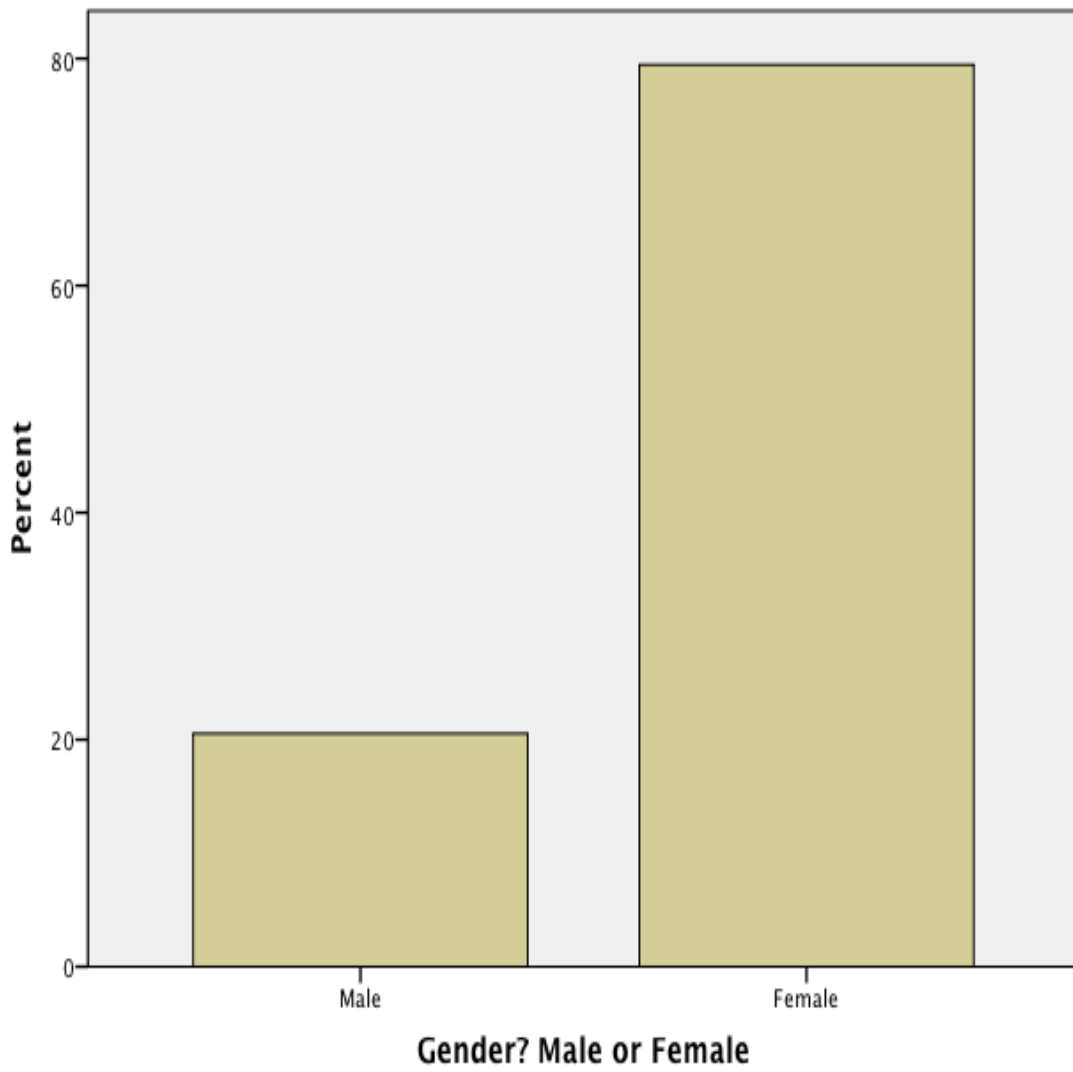
**Figure 2**

**Ethnicity of Participants**



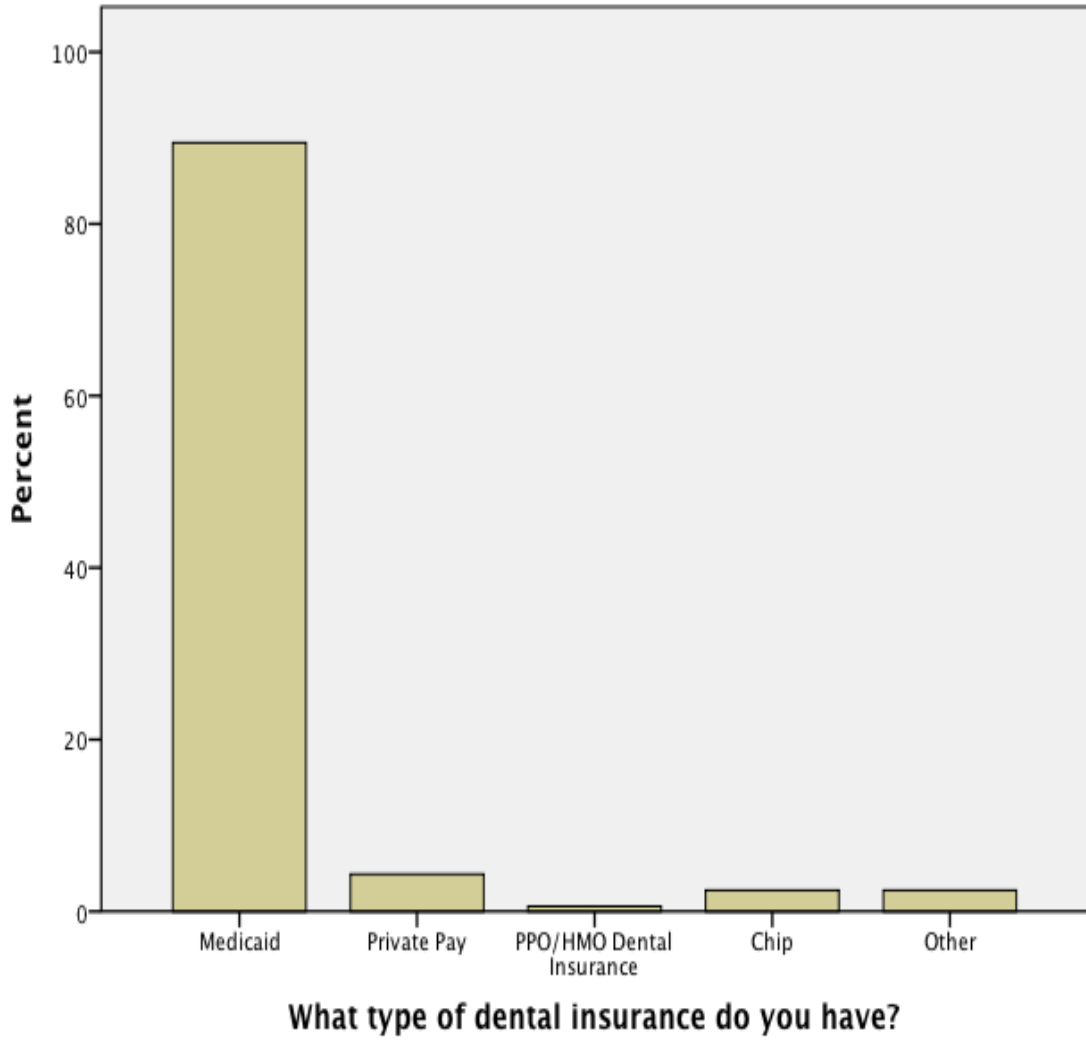
**Figure 3**

**Gender of Participants**



**Figure 4**

**Participant's Dental Insurance**



**Table 1**

**Statistics: Participant's Survey Site**

Survey Site	Frequency	Percent
Bluitt-Flowers	8	4.8
DeHaro	4	2.4
East Dallas	24	14.5
Vickery Meadows	12	7.3
Baylor	25	15.2
Su Clinica Familiar	92	55.8
Total	165	100.0

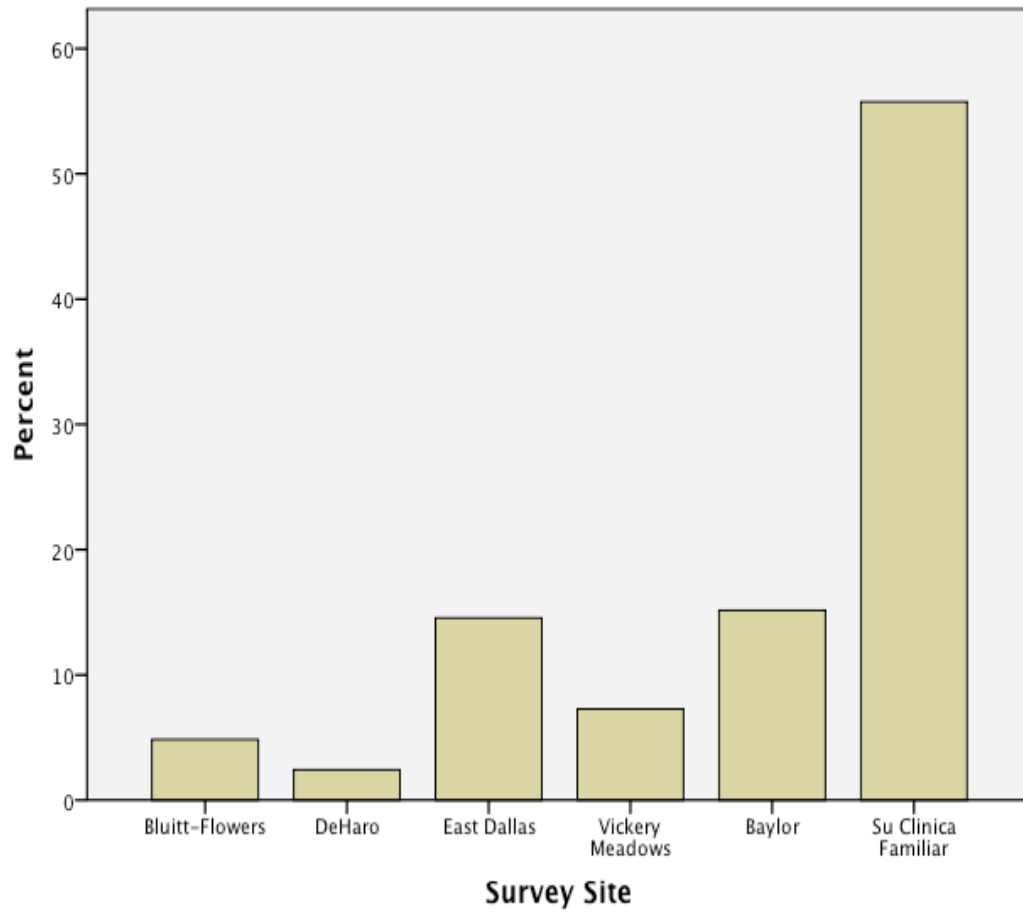
**Table 2**

**Statistics: Percentage of FDH vs. Non FDH Participants**

Is this a First Dental Home Visit?	Frequency	Percent
No First Dental Home	116	70.3
First Dental Home	49	29.7
Total	165	100.0

**Figure 5**

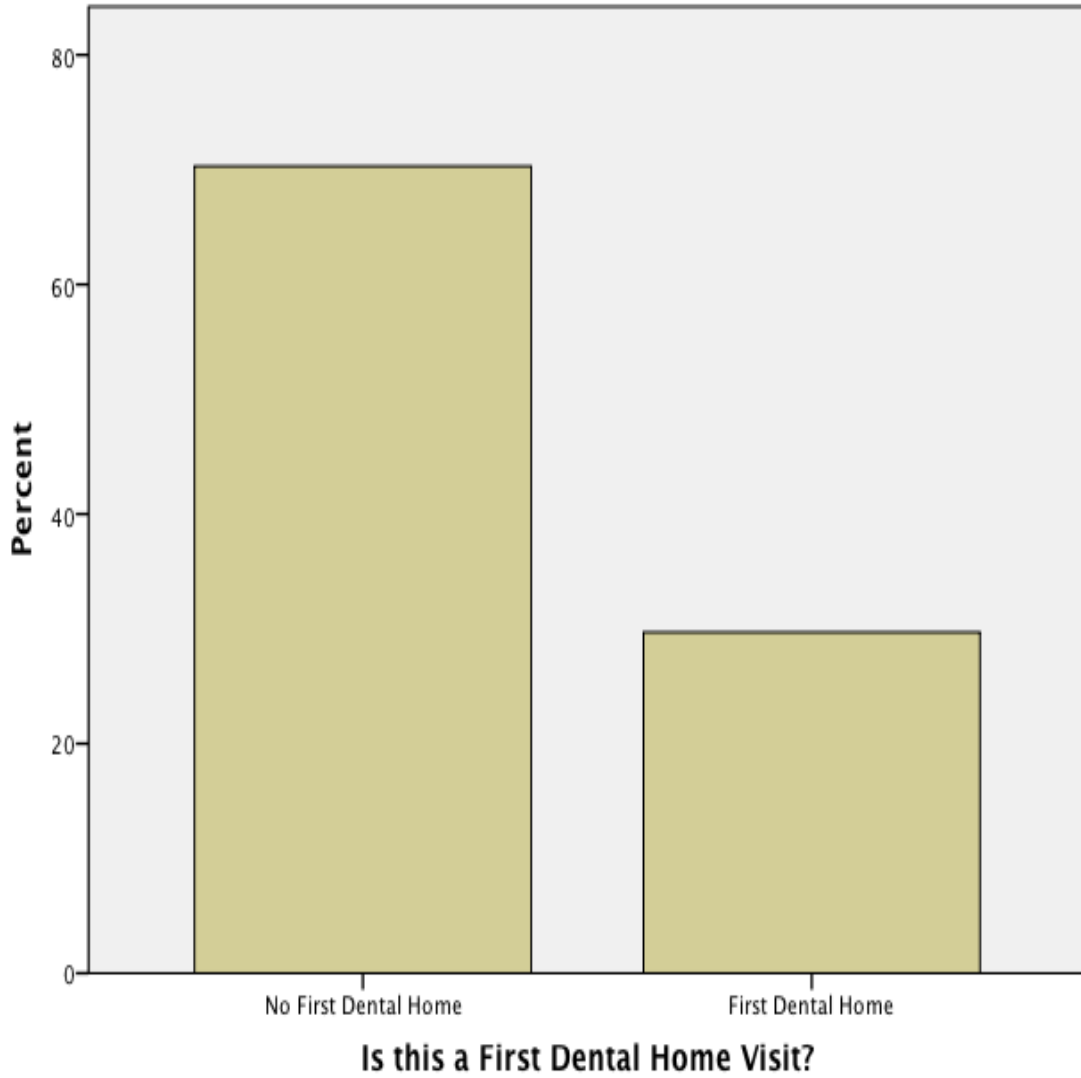
**Percentage of Participants at Each Survey Site**





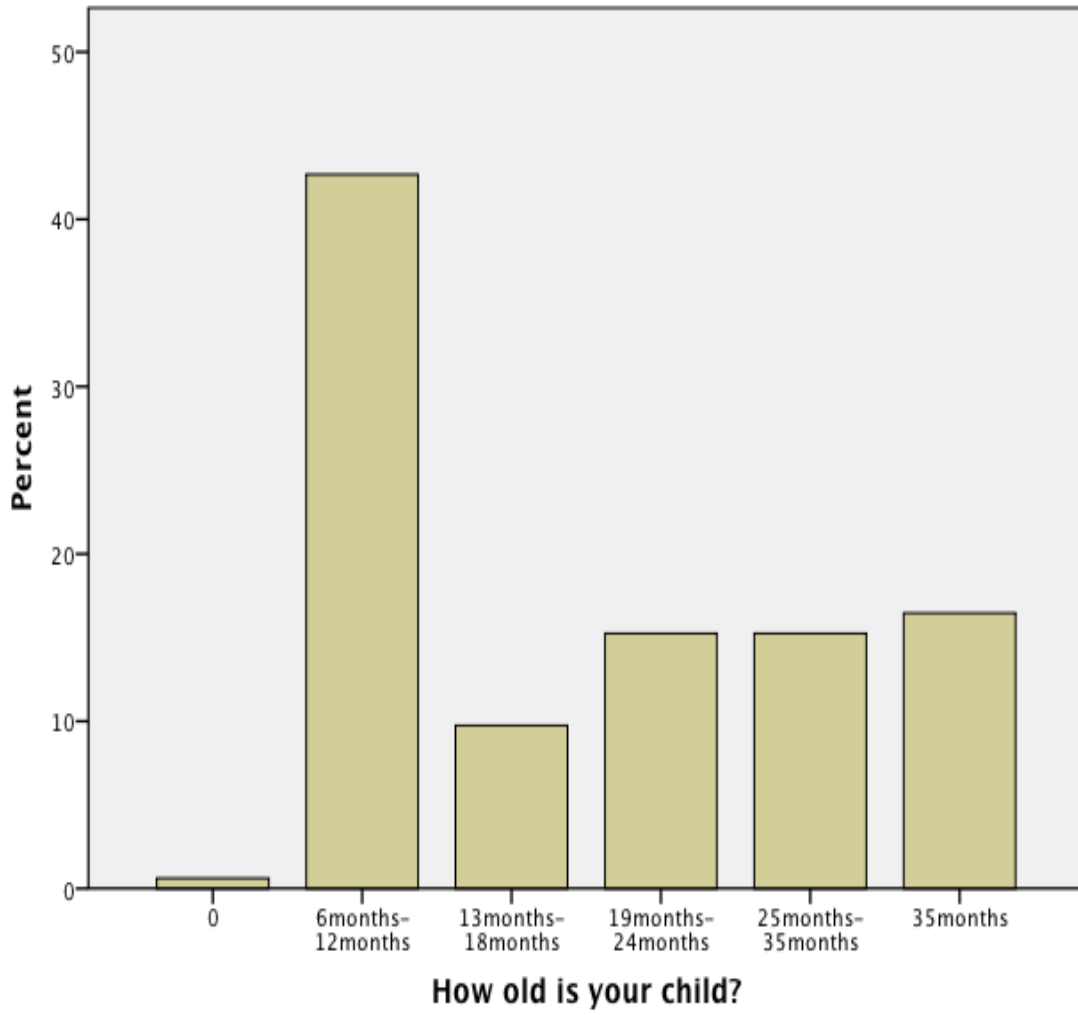
**Figure 6**

**Percentage of FDH vs. Non FDH Visits**



**Figure 7**

**Percentage of Participant's Children by Age**



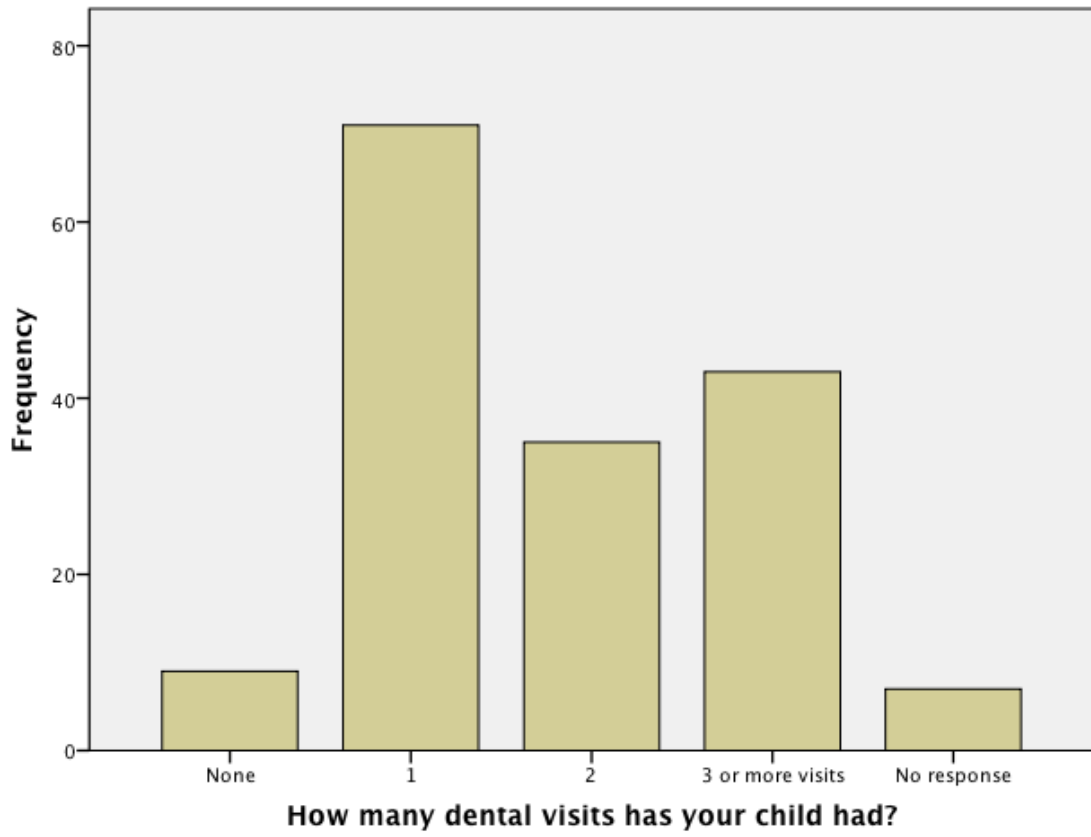
**Table 3**

**Statistics: Age of Participant's Children**

How old is your child?	Frequency	Percent
0 months - 5 months	1	.6
6 months - 12 months	70	42.4
13 months - 18 months	16	9.7
19 months - 24 months	25	15.2
25 months - 35 months	25	15.2
35 months	27	16.4
Total	164	99.4
Missing	1	.6
Total	165	100.0

**Figure 8**

**Frequency of Dental Visits**



**Table 4****Statistics: Sample Distribution**

	<b>Bluitt</b>	<b>DeHaro</b>	<b>East Dallas</b>	<b>Vickery Meadows</b>	<b>Baylor</b>	<b>Su Clinica</b>	<b>All Sites</b>
<b>Sample Size</b>	8	4	24	12	25	91	165
<b>Age of child (Median /IQR)</b>	4 (3)	2 (2)	3 (2)	4 (2)	4 (2)	1 (1)	2 (3)
<b>% Females</b>	8 (100%)	4 (100%)	22 (91%)	10 (83%)	14 (60%)	62 (77%)	151 (91%)
<b>% Spanish-Speaking</b>	4 (62%)	4 (100%)	21 (91%)	12 (100%)	12 (48%)	76 (90%)	129 (78%)
<b>Age of Parent (Median /IQR)</b>	33.6 (16)	28 (10)	30.5 (11)	33 (8)	27 (12)	23 (6)	25 (12)
<b># of Dental Visits (Median /IQR)</b>	3 (0)	2.3 (2)	2 (4)	3 (4)	2 (2)	1 (0)	2 (2)
<b>%FDH</b>	8 (100%)	4 (100%)	24 (100%)	12 (100%)	0 (0%)	1 (1.1%)	49 (29.7%)

**Table 5****Comparison: Knowledge Questions Answered Correctly**

	<b>FDH</b>	<b>Non-FDH</b>	<b>X<sup>2</sup></b>	<b>p-value</b>
<b>Knowledge question #1</b> <b>Topic:</b> Tooth brushing frequency	85.7%	82.7%	0.221	p=.414
<b>Knowledge question #2</b> <b>Topic:</b> Snack frequency	75.5%	76.6%	0.021	p=.517
<b>Knowledge question #3</b> <b>Topic:</b> Causes of Cavities	57.4%	56.4%	0.016	p=.521
<b>Knowledge question #4</b> <b>Topic:</b> Purpose of baby teeth	79.6%	89.0%	2.492	p=.094
<b>Knowledge question #5</b> <b>Topic:</b> Amount of toothpaste	51.0%	28.9%	7.284	<b>p=.006</b>
<b>Knowledge question #6</b> <b>Topic:</b> Examining child's mouth				
<b>6A-</b> Don't need to check	93.9%	96.5%	0.570	p=.353
<b>6B-</b> Black/Brown Spots	69.4%	75.4%	0.646	p=.269
<b>6C-</b> White spots	61.2%	58.8%	0.086	p=.455
<b>6D-</b> Swelling /gum boils	69.4%	65.8%	0.200	p=.398
<b>6E-</b> Bleeding gums	63.3%	64.0%	0.009	p=.531
<b>Knowledge question #7</b> <b>Topic:</b> Source of fluoride				
<b>7A-</b> Tap Water	79.6%	21.1%	49.527	<b>p&lt;.001</b>
<b>7B-</b> Toothpaste	63.3%	60.5%	0.108	p=.441
<b>7C-</b> Well Water	98.0%	90.4%	2.909	p=.076
<b>7D-</b> Bottle Water	87.8%	79.8%	1.474	p=.161
<b>7E-</b> The Dentist	63.3%	48.2%	3.102	p=.055
<b>Knowledge question #8</b> <b>Topic:</b> Types of good snacks	88.9%	77.3%	2.235	p=.103
<b>Knowledge question #9</b> <b>Topic:</b> Dental visits frequency	75.0%	70.9%	0.278	p=.373
<b>Knowledge question #10</b> <b>Topic:</b> Age to wean of bottle	70.8%	69.4%	0.34	p=.505
<b>Knowledge question #11</b> <b>Topic:</b> Age of first dental visit	100%	92.7%	3.677	p=.051

**Table 6**

**Comparison: Composite Knowledge Score**

	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>p-value</b>
<b>Non-FDH</b>	4.00	17.00	12.634	2.38	<b>p&lt;0.001</b>
<b>FDH</b>	9.00	17.00	14.04	2.15	

**Table 7**

**Comparison: Practice Questions Answered Correctly**

	<b>FDH</b>	<b>Non-FDH</b>	<b><math>\chi^2</math></b>	<b>p-value</b>
<b>Practice Question #1</b> <b>Topic:</b> Child's brushing	98%	88.4%	3.929	<b>p=0.038</b>
<b>Practice Question #2</b> <b>Topic:</b> Going to sleep with....	81.6%	51.9%	12.583	<b>p&lt;0.001</b>
<b>Practice Question #3</b> <b>Topic:</b> Examining child's mouth	98%	92.9%	1.681	p=0.181

**Table 8**

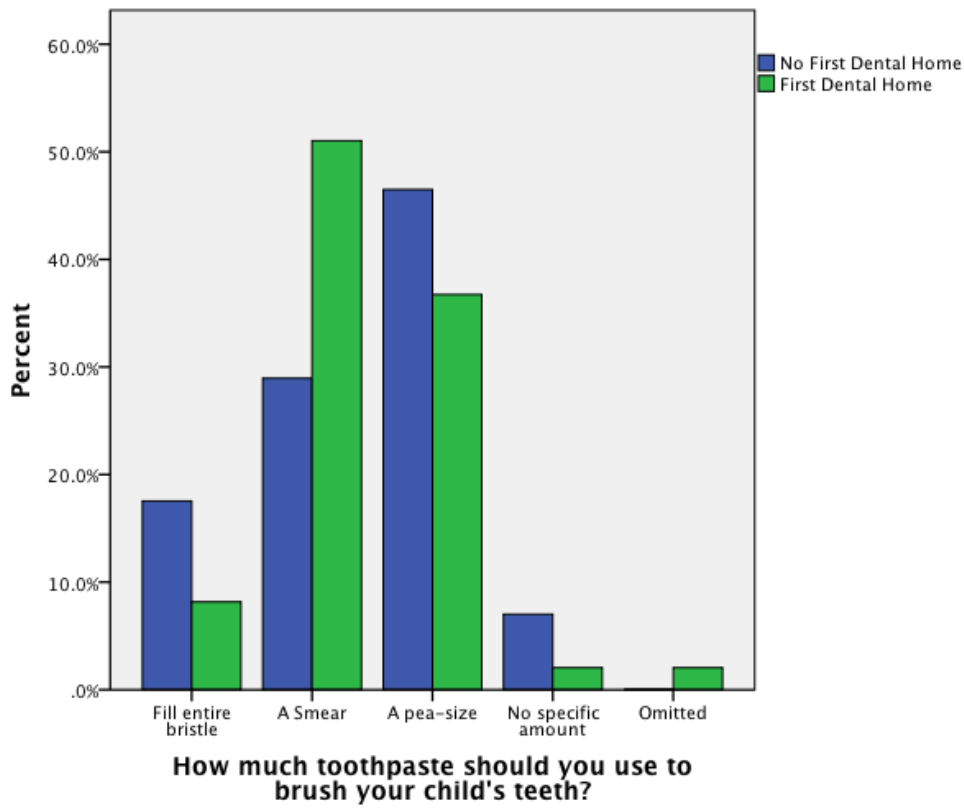
**Comparison: Practice Composite Score**

	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>p-value</b>
<b>Non-FDH</b>	1.00	3.00	2.33	.58	<b>p=0.010</b>
<b>FDH</b>	1.00	3.00	2.77	.46	



**Figure 9**

**Knowledge Question Comparison:  
Amount of Toothpaste Recommended**



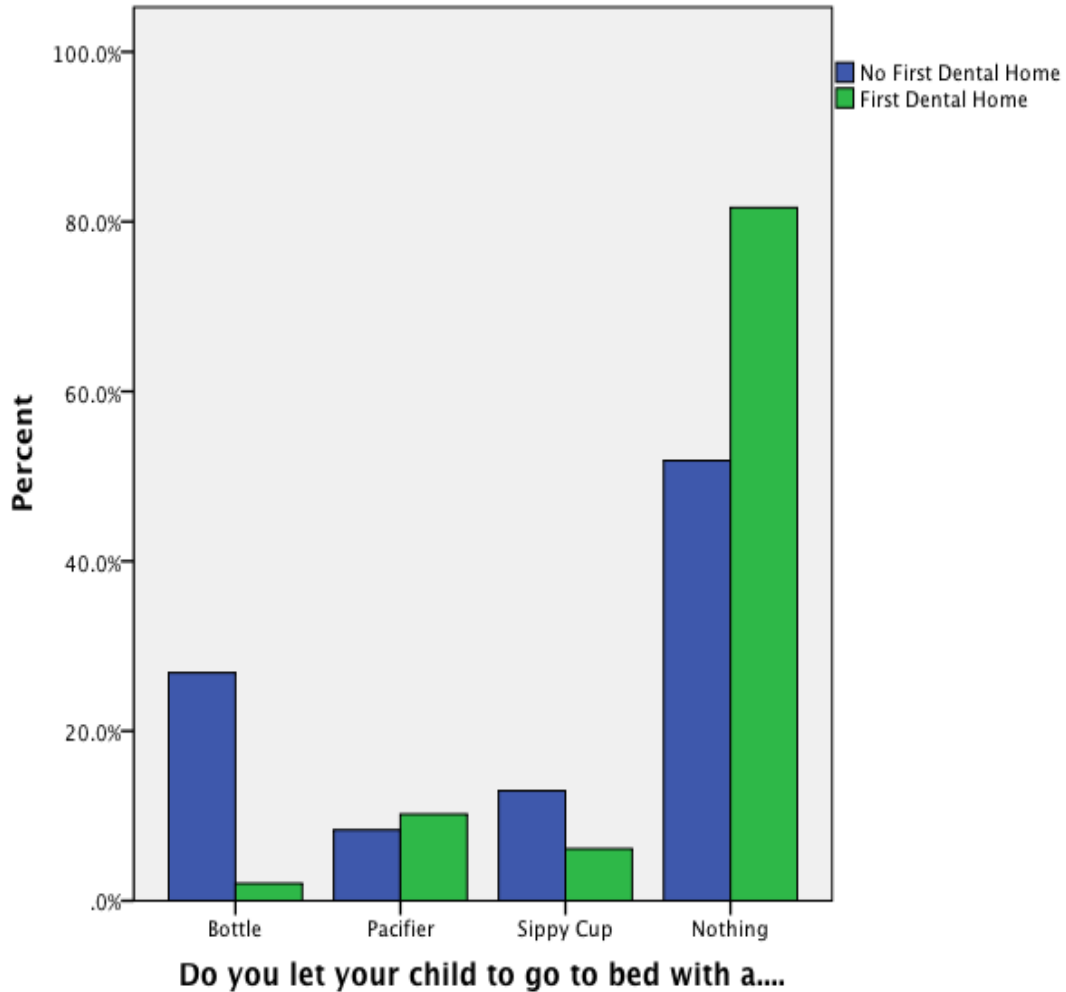
**Question #9:** This question pertains to how much toothpaste a parent should use to brush their children’s teeth. For the age range of 1-3 is it recommended that parent use a smear amount of toothpaste

More FDH parents answered the correct answer regarding the correct amount of toothpaste that should be used (p=.023)

A significantly higher proportion of the FDH respondents answered the question correctly (smear) than the non-FDH parents (p<0.001).

**Figure 10**

**Practice Question Comparison:  
Do you let your child go the bed with...**

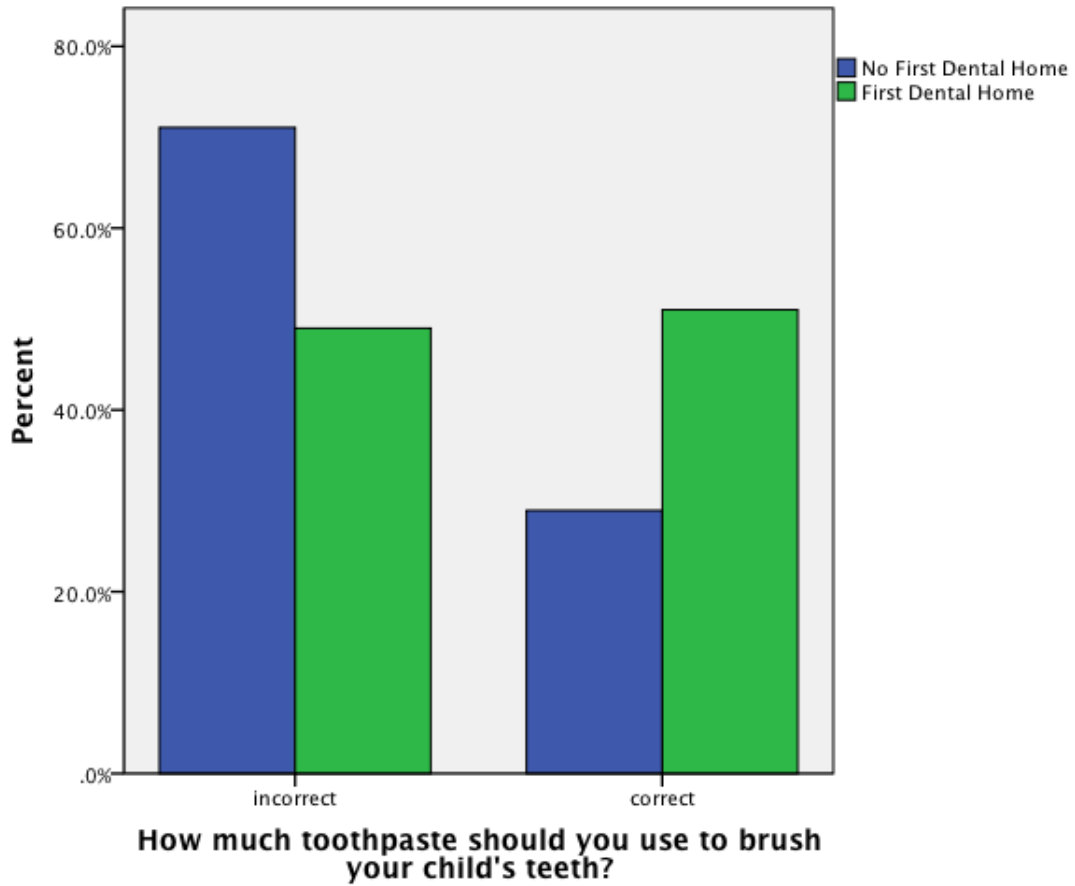


**Question #19-** In regards to whether are not parents let their children go to sleep with anything such as a bottle, pacifier, or sippy cup

- Significantly more FDH respondents did not let their children go to sleep with anything (p=0.001).

**Figure 11**

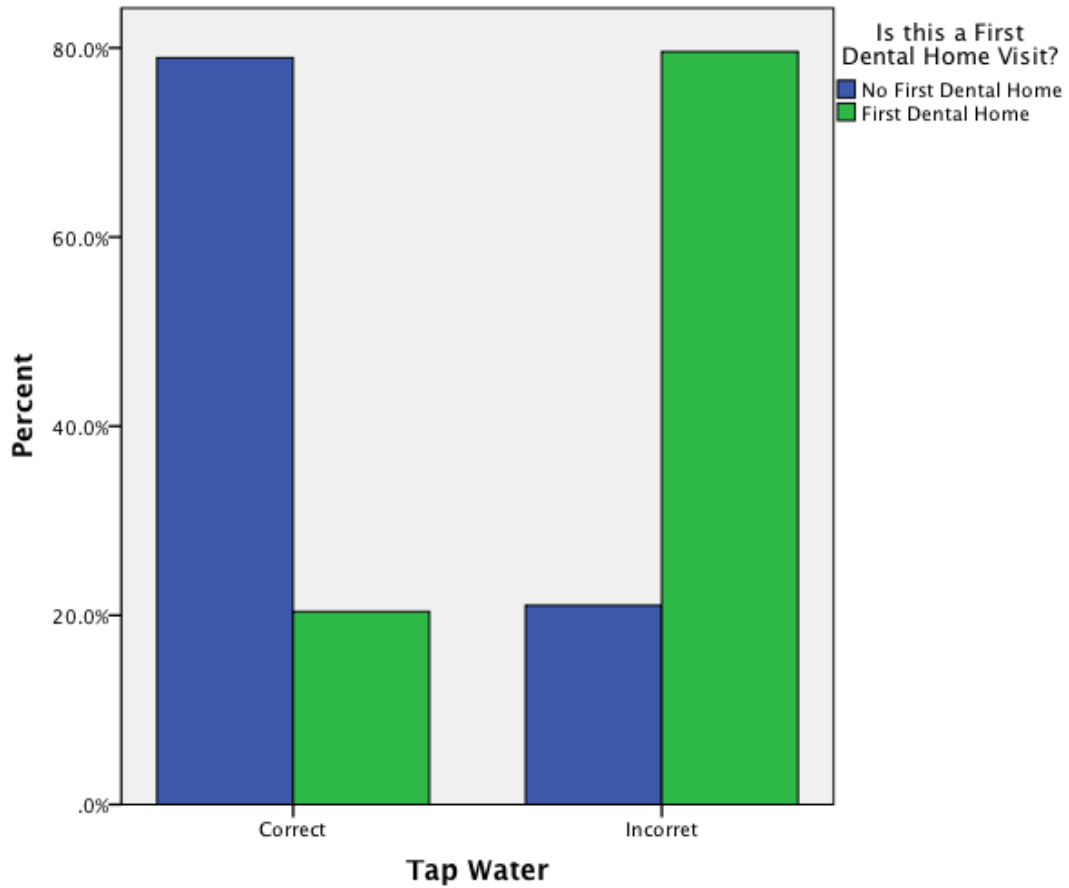
**Corrected Knowledge Question Comparison:  
Amount of Toothpaste Recommended**



A significantly higher proportion of the FDH respondents answered the question correctly (smear) than the non-FDH parents ( $p < 0.001$ ).

**Figure 11-A**

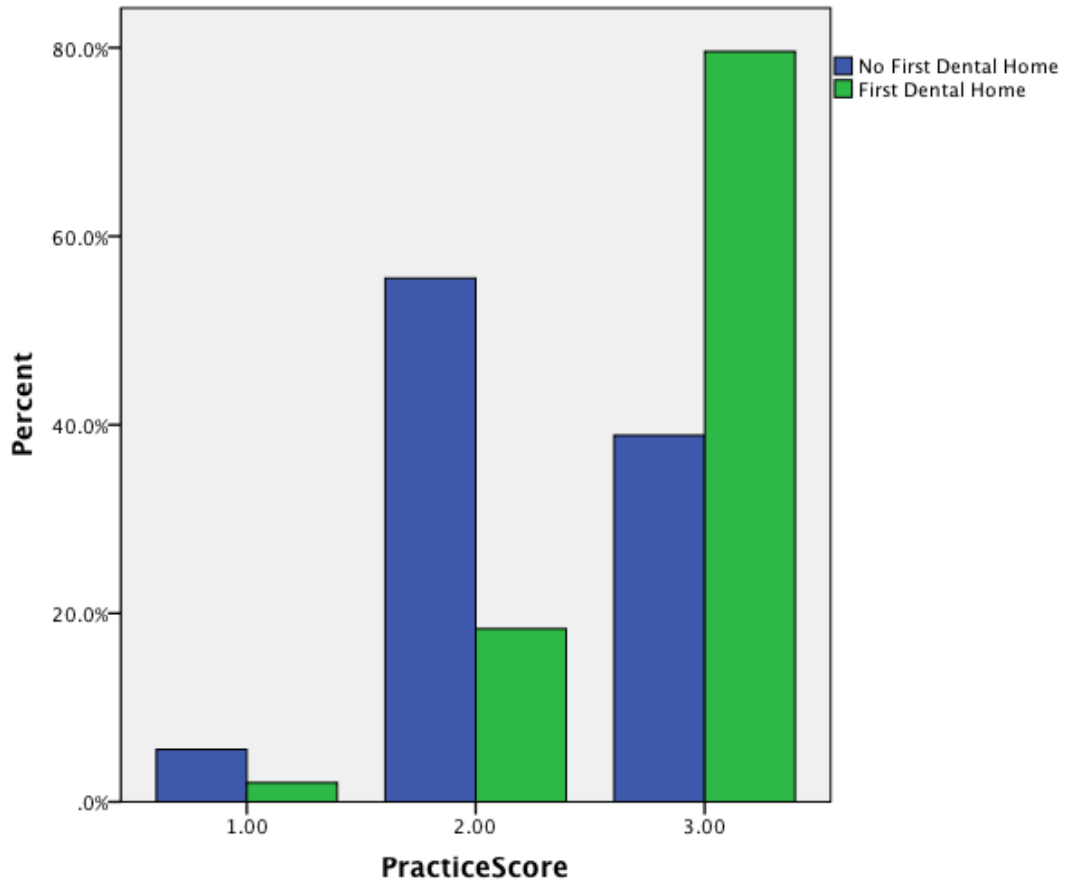
**Corrected Knowledge Question Comparison:**



More FDH parents answered that tap water is a source for fluoride vitamins ( $p < 0.001$ ).

**Figure 12**

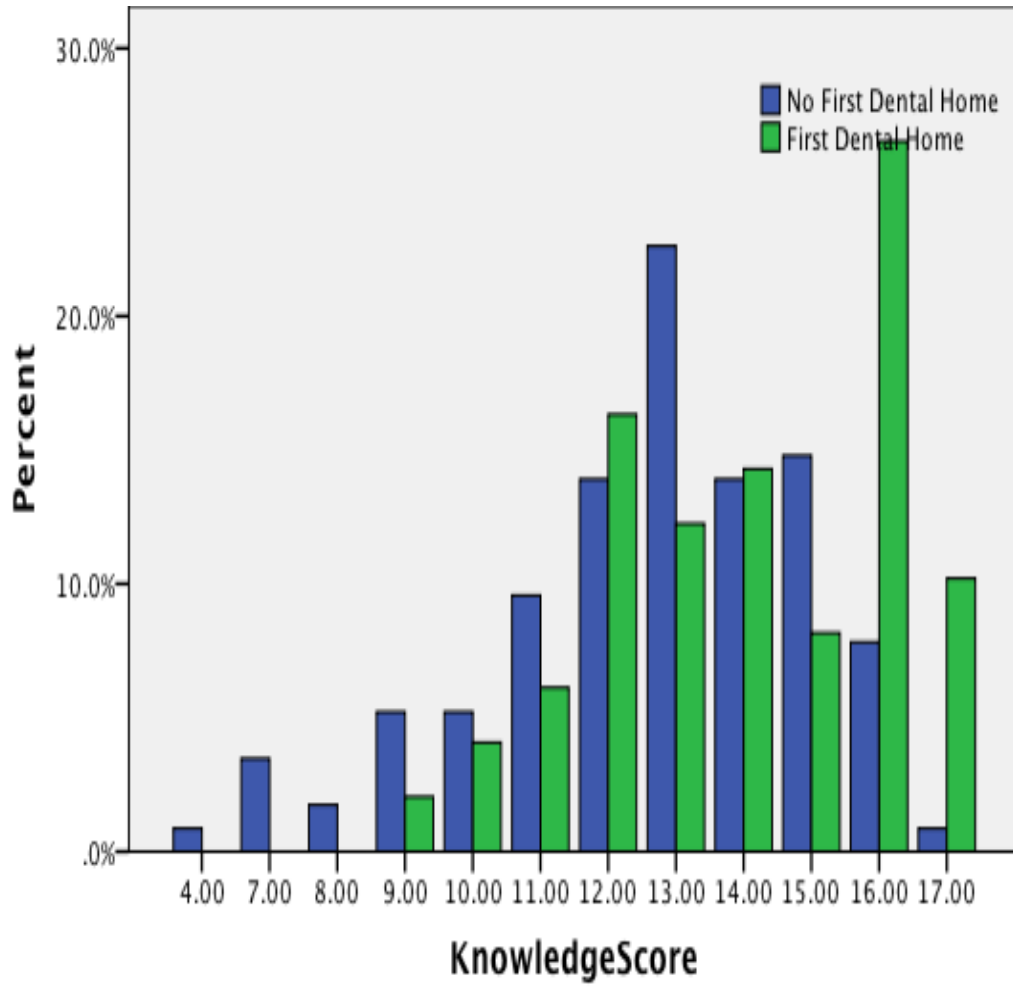
**Composite Practice Score Comparison**



On both the Practice Score and Knowledge Scores, FDH participants scored higher than their non-FDH counterparts ( $p=0.006$  and  $p < 0.001$ , respectively).

**Figure 13**

**Composite Knowledge Score Comparison**





***Title: To Evaluate the Effectiveness of the Texas Medicaid First Dental Home Regarding Parental Knowledge and Practice of Oral Health Care in Children.***

Dear Parent,

I am inviting you to participate in a research project to find out the effectiveness of your dental recall visit. I am a dentist and a graduate student at Baylor College of Dentistry who is also funding this project. I have attached a short survey asking you basic questions about the oral health care with your child. It should take you less than 10 minutes to complete.

If you choose to participate in this study, I will personally give you the questionnaire at your next dental visit and collect them once you complete the answers. To protect your privacy, please do not put your name or any personal information that would identify you or your child.

There are no risks to you or your child by filling out this survey. I can assure your privacy will be protected and all responses will remain anonymous if you participate in this study by filling out the questionnaire. You have the right not to participate in this study with no consequences should you decide not to answer the questionnaire. Your child's treatment will in no way be affected by your decision to participate or not.

If you have any questions about the survey, or about being in this study, you may contact me at 919-423-1164. We are in the process of obtaining the Institutional Review Board (IRB) at the Baylor College of Dentistry approval of this study. If you have any concerns about your rights as a participant in this study you may contact Dr. Emet Schneiderman, Chair of the IRB by phone: 214-828-8377 or by email at [emet@bcd.tamhsc.edu](mailto:emet@bcd.tamhsc.edu).

Sincerely,

Charmaine Porter-O'Reilly, MS, DDS



**Título: Para evaluar la eficacia del primer hogar dental de Tejas Medicaid con respecto a conocimiento parental y de la práctica del cuidado médico oral en niños.**

Estimado padre,

Le estoy invitando a que participe en un proyecto de investigación para descubrir la eficacia de su visita dental de memoria. Soy dentista y estudiante de tercer ciclo en la universidad de Baylor de la odontología que también está financiando este proyecto. He atado un examen corto que le hacía preguntas básicas acerca del cuidado médico oral con su niño. Debe tomarle menos entonces 10 minutos para terminar.

Si usted elige participar en este estudio, personalmente le daré el cuestionario en su visita dental siguiente y los recogeré una vez que usted termina las respuestas. Para proteger su aislamiento, no ponga por favor su nombre o ninguna información personal que le identificaran o su niño.

No hay riesgos a usted o a su niño completando este examen. Puedo asegurar su aislamiento será protegido y todas las respuestas seguirán siendo anónimas si usted participa en este estudio completando el cuestionario. Usted tiene la derecha de no participar en este estudio sin consecuencias si usted decide no contestar al cuestionario. El tratamiento de su niño será afectado de ninguna manera por su decisión para participar o no.

Si usted tiene cualesquiera preguntas sobre el examen, o sobre ser en este estudio, usted puede entrarme en contacto con en 919-423-1164. Estamos en curso de obtención del comité examinador institucional (IRB) en la universidad de Baylor de la aprobación de la odontología de este estudio. Si usted tiene algunas preocupaciones por las sus derechas como un participante en este estudio usted puede entrar en contacto con al Dr. Emet Schneiderman, silla del IRB por el teléfono: 214-828-8377 o por el email en [emet@bcd.tamhsc.edu](mailto:emet@bcd.tamhsc.edu).

Sinceramente,

Charmaine Porter-O'Reilly, MS, DDS



## Telephone Script

Hello Mr/ Mrs/Ms \_\_\_\_\_

My name is \_\_\_\_\_ and I am calling from Baylor College of Dentistry/ Vickery Meadows or Bluit- Flowers or DeHaro or East Dallas Community Dental Clinic ( Choose one). We are working on a study where we want to evaluate the effectiveness of your dental visits. In order to this, we will need you to come to our clinic to fill out a short questionnaire (survey) regarding your child's dental experiences. It should only take 5-10 minutes to complete the survey. There are no risks to you or your child by filling out this survey. I can assure your privacy will be protected and all responses will remain confidential if you participate in this study by filling out the questionnaire. You have the right not to participate in this study with no consequences should you decide not to answer the questionnaire.

Can you come in on  day/time to fill out the questionnaire?

I just want to thank you for taking time out to speak with me!

Please feel free to contact me clinic's contact information if you have any questions

Escritura del teléfono

Hola señor/Srta/Srtas. \_\_\_\_\_

Mi nombre es \_\_\_\_\_ y estoy llamando de la universidad de Baylor de los prados de Vickery de la odontología o las flores de Bluit- o DeHaro o clínica dental de la comunidad del este de Dallas (elija uno). Estamos trabajando en un estudio donde queremos evaluar la eficacia de sus visitas dentales. Para esto, le necesitaremos venir a nuestra clínica completar un cuestionario corto (examen) con respecto a las experiencias dentales de su niño. Debe tardar solamente 5-10 minutos para terminar el examen. No hay riesgos a usted o a su niño completando este examen. Puedo asegurar su aislamiento será protegido y todas las respuestas seguirán siendo confidenciales si usted participa en este estudio completando el cuestionario. Usted tiene la derecha de no participar en este estudio sin consecuencias si usted decide no contestar al cuestionario.

¿Puede usted venir adentro en day/time \_\_\_\_\_ completar el cuestionario?

¡Apenas quiero agradecerle por tardar tiempo hacia fuera para hablar conmigo! Sienta por favor libre de entrarme en contacto con la información de contacto de la clínica si usted tiene cualesquiera preguntas

**Evaluating the Effectiveness of the Texas Medicaid First Dental Home Visit  
Regarding Parental Knowledge and Practice of  
Oral Health Care for Children.  
Charmaine Porter-O'Reilly, D.D.S.**

<b>Demographics</b>	<b>1. What type of dental insurance do you have?</b>			<b>Knowledge</b>	<b>7. What is needed for a cavity to occur?</b>	<b>Knowledge 3</b>
	a. Medicaid	144	87.3%		a. Milk	
	b. Private Pay	7	4.2%		b. Sugar source	
	c. PO/HMO Dental Insurance	1	0.6%		c. Soft teeth	
	d. CHIP	4	2.4%		d. Nothing is needed	
	e. Other	4	2.4%		e. All of the above	
	<b>2. How old is your child?</b>				<b>8. Why are baby teeth necessary?</b>	<b>Knowledge 4</b>
	a. 6 mos. – 12 mos.	70	42.4%		a. They are not because they are going to fall out	
	b. 12 mos. – 18 mos.	16	9.7%		b. They are important for jaw function and space maintainers	
	c. 18 mos. – 24 mos.	25	15.2%		c. They are important for taking school pictures	
d. 24 mos. – 35 mos.	25	15.2%	d. They are important for drinking			
e. 35 mos.	27	16.4%				
	<b>3. How many dental visits has your child had?</b>			<b>9. How much toothpaste should you use to brush your child's teeth?</b>	<b>Knowledge 5</b>	
	a. 1			a. Fill the entire bristle		
	b. 2	9	5.9%	b. A smear		
	c. More than 3 visits	71	43%	c. A pea-size		
		43	26.9%	d. No specific amount		
	<b>4. How did you hear about this dental office?</b>			<b>10. What should you check for in your toddler's mouth?</b>	<b>Knowledge 6</b>	
	a. Pediatrician	59	35.8%	a. Don't need to check for anything		
	b. Local ads	9	5.5%	b. Black or brown spots		
	c. Friends/family	53	32.1%	c. White spots		
	d. Drove by and saw it	10	6.1%	d. Swelling/gumboils		
	e. Other	30	18.6%	e. Bleeding gums		
<b>Knowledge</b>	<b>5. How often should you brush your child's teeth?</b>		<b>Knowledge 1</b>	<b>11. Where can your child get fluoride (vitamins) for teeth? Circle all that apply.</b>	<b>Knowledge 7</b>	
	a. At least 1 times a day			a. Tap water		
	b. At least 2 times a day			b. Toothpaste		
	c. More than 3 times a day			c. Well water		
	d. Every other day			d. Bottled water		
				e. The dentist		
	<b>6. How often should your child have snacks?</b>		<b>Knowledge 2</b>	<b>12. What are good snacks to give your child?</b>	<b>Knowledge 8</b>	
	a. 1 time a day			a. Fruits		
	b. 2 times a day			b. Potato chips		
	c. 3 times a day			c. 100% juice		
d. Whenever they cry			d. Fruit snacks			
			e. All of the above			

Knowledge	<p><b>13. How often should your child visit the dentist?</b></p> <p>a. Every 6 months  b. Every year  c. When they are in pain  d. Could be every 6 months but could be sooner depending on the dentist's recommendation</p>	<p><b>Knowledge 9</b></p>	Opinion	<p><b>21. Do you find that your dental visits are helpful in changing the way you take care of your child's teeth?</b></p> <p>a. Very helpful  b. Slightly helpful  c. Not helpful  d. Really not helpful - I already knew most of the information</p>	<p><b>Opinion 1</b></p>
	<p><b>14. When should your child be weaned off the bottle?</b></p> <p>a. 6 mos. - 8 mos.  b. 12 mos. - 14 mos.  c. 18 mos. - 20 mos.  d. No specific time frame</p>	<p><b>Knowledge 10</b></p>		<p><b>22. Is it difficult to visit the dentist every 3 months?</b></p> <p>a. No  b. Yes  c. Sometimes</p>	<p><b>Opinion 2</b></p>
	<p><b>15. At what age should your child have their first dental visit?</b></p> <p>a. 6 months  b. 1 year old  c. 2 years old  d. No specific time</p>	<p><b>Knowledge 11</b></p>		<p><b>23. How important are your child's teeth to you?</b></p> <p>a. Very important  b. Important  c. Slightly important  d. Not important</p>	<p><b>Opinion 3</b></p>
	<p><b>16. Did you breast feed or bottle feed your child?</b></p> <p>a. Breast fed  b. Bottle fed  c. Both  d. Don't remember</p>	<p><b>Practice 1</b></p>		<p><b>24. How important is it to you that your child has a well-balanced diet?</b></p> <p>a. Very important  b. Important  c. Slightly important  d. Not important</p>	<p><b>Opinion 4</b></p>
	<p><b>17. How are your child's teeth brushed?</b></p> <p>a. They brush them themselves  b. I brush them for my child  c. Combination - they brush and I help</p>	<p><b>Practice 2</b></p>		<p><b>25. How do you value good nutrition for your child?</b></p> <p>a. Very important  b. Important  c. Slightly important  d. Not important</p>	<p><b>Opinion 5</b></p>
Practice	<p><b>18. If you used reconstituted milk formula, what did you mix the powdered milk with?</b></p> <p>a. Tap water  b. Bottled water  c. Nursery water  d. Don't know  e. Does Not Apply</p>	<p><b>Practice 3</b></p>			
	<p><b>19. Do you let your child go to bed with a</b></p> <p>a. Bottle  b. Pacifier  c. Sippy Cup  d. Nothing</p>	<p><b>Practice 4</b></p>			
	<p><b>20. Does each of your children have their own toothbrush?</b></p> <p>a. Yes  b. No</p>	<p><b>Practice 5</b></p>			

**Evaluating the Effectiveness of the Texas Medicaid First Dental Home Visit Regarding Parental Knowledge and Practice of Oral Health Care for Children.**

**Charmaine Porter-O'Reilly, D.D.S.**

Please circle the letter corresponding to the most appropriate response, fill in the blank, or comment if appropriate.

**Survey Questions:**

1. What type of dental insurance do you have?
  - a. Medicaid
  - b. Private Pay
  - c. PPO/HMO Dental Insurance
  - d. CHIP
  - e. Other
2. How old is your child?
  - a. 6 month - 12 mos
  - b. 12 mos - 18 mos
  - c. 18 mos - 24 mos
  - d. 24 mos - 35 mos
  - e. 35 mos
3. How many dental visits has your child had?
  - a. 1
  - b. 2
  - c. More than 3 visits
4. How did you hear about this dental office?
  - a. Pediatrician
  - b. Local Ads
  - c. Friends/family
  - d. Drove by and saw it
  - e. Other \_\_\_\_\_
5. How often should you brush your child's teeth?
  - a. At least 1 times a day
  - b. At least 2 times a day
  - c. More than 3 times a day
  - d. Every other day
6. How often should your child have snacks?
  - a. 1 time a day
  - b. 2 times a day
  - c. 3 times a day
  - d. Whenever they cry
7. What is needed for a cavity to occur?
  - a. Milk
  - b. Sugar source
  - c. Soft teeth
  - d. Nothing is needed, it just happens
  - e. All of the above
8. Why are baby teeth necessary?
  - a. They are not because they are going to fall out
  - b. They are important for jaw function and space maintainers
  - c. They are important for taking school pictures
  - d. They are important for drinking
9. How much toothpaste should you use to brush your child's teeth?
  - a. Fill the entire bristle
  - b. A smear
  - c. A pea-size
  - d. No specific amount
10. What should you check for in your toddlers mouth?  
Circle all that apply.
  - a. Don't need to check for anything
  - b. Black or brown spots
  - c. White spots
  - d. Swellings/gumboils
  - e. Bleeding gums
11. Where can your child get fluoride (vitamins) for teeth?  
Circle all that apply.
  - a. Tap water
  - b. Toothpaste
  - c. Well water
  - d. Bottled water
  - e. The dentist
12. What are good snacks to give your child ?
  - a. Fruits
  - b. Potato chips
  - c. 100% Juice
  - d. Fruit snacks
  - e. All of the above
13. How often should your child visit the dentist?
  - a. Every 6 months
  - b. Every year
  - c. When they are in pain
  - d. Could be every 6 months but could be sooner depending on the dentist's recommendation
14. When should your child be weaned off the bottle?
  - a. 6 -8 months
  - b. 12 -14 months
  - c. 18 - 20 months
  - d. No specific time frame, whenever they seem

15. At what age should your child have their first dental visit?
- 6 months
  - 1 year old
  - 2 years old
  - No specific time
16. Did you breast feed or bottle feed your child?
- Breast fed
  - Bottle fed
  - Both
  - Don't remember
17. How are your child's teeth brushed?
- They brush them themselves
  - I brush them for my child
  - Combination - they brush and I help
18. If you used reconstituted milk formula, did you mix the powdered milk with
- Tap water
  - Bottled water
  - Nursery water
  - Don't know
  - Does Not Apply
19. Do you let your child go to bed with a
- Bottle
  - Pacifier
  - Sippy Cup
  - Nothing
20. Does each of your children have their own toothbrush? Yes or No
21. Do you examine your child's mouth?
- Yes
  - No
22. Do you find that your dental visits are helpful in changing the way you take care of your child's teeth?
- Very helpful
  - Slightly helpful
  - Not helpful
  - Really not helpful - I already knew most of the information
23. Is it difficult to visit the dentist every 3 months?
- No
  - Yes
  - Sometimes
24. How important are your child's teeth to you ?
- Very important
  - Important
  - Slightly important
  - Not important - they are going to fall out anyway
25. How important is it to you that your child has a well-balanced diet?
- Very important
  - Important
  - Slightly important
  - Not important
26. How do you value good nutrition for your child?
- Very important
  - Important
  - Slightly important
  - Not important
27. How old are you? \_\_\_\_\_
28. What is your ethnicity?
- African- American
  - Hispanic
  - White/ Caucasian
  - Asian
  - Other
29. Gender? Circle one. Male or Female
- Are there any comments that you would like to make about your dental experience? Please use the space below.

**Comments:**

**Please respond by Date.**

**Conocimiento, Práctica y Opiniones Parentales del Cuidado Oral Para Los Niños**  
**Charmaine Porter-O'Reilly, D.D.S.**

Circule por favor la letra que corresponde a la respuesta más apropiada, complete el espacio en blanco, o comente si es apropiado.

Preguntas del examen:

1. ¿Qué tipo de Seguro Dental tiene actualmente?
  - a. Medicaid
  - b. Privado-pago
  - c. PPO/HMO
  - d. CHIP
  - e. Otra fuente \_\_\_\_\_
2. ¿Qué edad tiene su hijo(a)?
  - a. 6 meses - 12 meses
  - b. 12 meses - 18 meses
  - c. 18 meses- 24 meses
  - d. 24 meses- 35 meses
  - e. 35 meses
3. ¿Cuántas visitas dentales ha tenido su hijo(a) ?
  - a. 0
  - b. 1-3
  - c. 3 o más
4. ¿Cómo se entero de esta oficina dental?
  - a. Pediatra
  - b. Anuncios Locales
  - c. Amigos/ Familia
  - d. Pasó
  - e. Otro \_\_\_\_\_
5. ¿Con qué frecuencia debe cepillar los dientes de sus hijos?
  - a. Por lo menos 1 vez por día
  - b. Por lo menos 2 veces por día
  - c. Más de 3 veces por día
  - d. Cada dos días
6. ¿Con qué frecuencia debe su hijo(a) comer bocados (snacks)?
  - a. 1 vez por día
  - b. 2 veces por día
  - c. 3 veces por día
  - d. Siempre que quieran
7. ¿Qué se necesita para que una carie ocurra?  
escoja la respuesta correcta
  - a. Leche
  - b. Comida con azúcar
  - c. Diente suave o defectuoso
  - d. Nada es necesario- Solo sucede
  - e. Todo lo mencionado
8. ¿Por qué son importantes los dientes de bebé?
  - a. Ellos no son importantes porque se caerán
  - b. Son importantes para la función de la mandíbula, mantener el espacio
  - c. Son importantes para tomarse fotos en la escuela
  - d. Son importantes para comer
9. ¿Cuánta pasta dental debe utilizar para cepillar los dientes de su hijo(a)?
  - a. Llene las cerdas enteras
  - b. Un poco
  - c. El tamaño de una lenteja
  - d. Ninguna cantidad específica
10. ¿Qué debe revisar usted dentro de la boca de su hijo(a)?  
**Elija las respuestas que aplican.**
  - a. No necesito revisar nada
  - b. Manchas oscuras
  - c. Manchas blancas
  - d. Inflamación de los encías
  - e. Sangrado de encías
11. ¿Dónde puede su hijo(a) conseguir fluoruro (vitaminas)?  
**Circule todas las que apliquen.**
  - a. Agua de la llave
  - b. Pasta dental
  - c. Agua de pozo
  - d. Agua en Botella
  - e. El dentista
12. ¿Cuales bocados (snacks) son buenos para sus hijos?
  - a. Fruta natural
  - b. Papitas fritas
  - c. 100% Jugo natural
  - d. Bocados (snacks) hechos de frutas
  - e. Todo lo mencionado
13. ¿Con que frecuencia debe su hijo(a) visitar al dentista?
  - a. Cada 6 meses
  - b. Cada año
  - c. 18-20 meses
  - d. No hay un tiempo específico
14. ¿Cuándo debe su hijo(a) ser destetado del biberón?
  - a. 6 -8 meses
  - b. 12- 14 meses
  - c. 18-20 meses
  - d. No hay un tiempo específico

15. ¿En qué edad debe su niño tener su primera visita dental?
- 6 meses
  - 1 año
  - 2 años
  - Ninguna edad específica
16. ¿Usted alimenta a su hijo(a) con pecho o biberón?
- Pecho
  - Biberón
  - Ambos
  - No recuerdo
17. ¿Cómo son cepillados los dientes de su hijo(a)?
- Ellos mismos se cepillan
  - Usted los cepilla
  - Combinación: Ellos se cepillan y usted los asiste
18. ¿Si utilizo leche en fórmula, con que mezcla la leche en polvo?
- Agua de la llave
  - Agua en botella
  - Agua para bebés
  - No se
  - No aplica
19. ¿Usted permite que su hijo(a) duerma con:
- Biberón
  - Chupón
  - Vaso para beber
  - Ninguno
20. Su hijo(a) tiene su propio cepillo de dientes?
- Si
  - No
21. ¿Usted examina la boca de su niño?
- Si
  - No
22. ¿Encuentra que sus visitas dentales son útiles para cambiar la manera en que usted cuida de los dientes de su hijo(a)?
- Muy útil
  - Útil
  - Ligeramente útil
  - No útil- yo conocía la mayor parte de la información
23. ¿Es difícil visitar al dentista cada 3 meses?
- No
  - Si
  - A veces
24. ¿Qué tan importantes son los dientes de su hijo(a) para usted?
- Muy importante
  - Importante
  - Ligeramente importante
  - No son importantes- porque se caerán
25. ¿Cuán importante es para usted que su niño coma alimentos nutritivos tales como frutas y verduras?
- Muy importante
  - Importante
  - No es importante
  - No es importante en absoluto
26. ¿Qué tanto valora usted una buena nutrición?
- Muy importante
  - Importante
  - No importante
  - No es importante en absoluto
27. ¿Cuál es tu edad? \_\_\_\_\_
28. ¿Cuál es tu grupo étnico?
- Afro- Americano
  - Hispano
  - Blanco/ Caucásico
  - Asiático
  - Otro
29. ¿Sexo? **Circulo uno.** Masculino o Femenino
- ¿Tiene algún comentario que le gustaría hacer acerca de su experiencia dental?

**Comentarios:**

**Check Marks (Administrator only)**

Type of Visit  
 First Dental Home  
 Recall

Pay or Source  
 Medicaid  
 CHIP  
 private pay  
 Grant

Number of dental Visits  
 # \_\_\_\_\_