

An Analysis of the First Dental Visits in a Federally Qualified Health Center in a Socio Economically Deprived Area

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Dental caries is the single most common chronic disease affecting children in the USA. Approximately 20-25% children are affected. This not only has serious implications for a child's long term health and well being but also has serious financial implications. The American Academy of Pediatric Dentistry advocates early intervention with the first dental visit by 12 months of age. Objective: The aim of this study was to determine the first dental visit for children living in a socio economically deprived area in Connecticut. This study was conducted at a Federally Qualified Health Center in Connecticut. Study Design: Data was collected prospectively on the children between January to December 2004. Results: We found that the mean age for the first visit was 4 years. The recommendation is that community health programs should emphasize the importance of preventive dental care by assuring the first dental visit be by age 1 year.

Keywords: epidemiology, first dental visit, federally qualified health center.

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INTRODUCTION

Dental caries comprise the single most common chronic disease affecting children in the United States.¹ Dental caries, in the early stages of life, can have serious implications for a child's long-term health and well-being. Early exposure to and familiarization of the child with the dental environment are seen as important measures in reducing dental anxiety in young children.² It is, therefore, important that a child be introduced to a pediatric dentist as soon as the first tooth erupts as recommended by the American Academy of Pediatric Dentistry (AAPD).³ During the first dental visit, the pediatric dentist evaluates for proper oral and craniofacial development, to determine whether teeth are erupting properly and to detect the presence of dental caries.⁴ It also gives the dentist the opportunity to discuss with parents a home dental care program for their children. The child's first dental visit is an opportunity for the parent to address concerns and questions regarding their child's

care. Dental care is the most prevalent unmet health need in children in the US. Unfortunately, not all children in the US have equal access to oral health services.⁵ Only 1 in 5 children covered by Medicaid received preventive oral care for which they were eligible.⁶ A consistent concern among pediatricians and family physicians has been the lack of dental providers willing to see these children. Studies have shown that dental visits among US children are associated with race, age, dental insurance and socio economic status.^{5,8-10} The literature shows that low income and minority children have a higher risk of developing caries in primary teeth.^{11,12} Other studies have also shown that children with private dental insurance coverage were more likely to have had a dental visit than those without insurance.^{9,10} Oral health status for patients scheduling regular dental visits is better than those that seek oral health care for emergency care.¹³ The data presented in this study represent children visiting a pediatric dentist for the first time at a Federally Qualified Health Center (FQHC) in Bridgeport Connecticut. A Federally Qualified Health Center (FQHC) is a non profit, consumer directed corporation that provides high quality care and cost effective treatment to the underserved and the uninsured. A FQHC includes Community Health Centers, migrant health centers, health care for the Homeless programs, public Housing Primary care programs, and urban Indian and Tribal health centers.¹⁴ About 12 million Americans rely on the FQHCs for health care. All FQHCs are required by the Section 330 grant program to provide "primary health services," which are defined in the statute to include "preventive dental services." Preventive dental services are further defined to include services provided by a licensed dentist or other qualified personnel, including:

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Oral hygiene instruction, oral prophylaxis as necessary, topical application of fluorides, the prescription of fluorides for systemic use when not available in the community water supply.¹⁵

In Connecticut 230,000 patients or 6.6% of the population receive care at over 110 FQHC sites in rural and urban areas across the state.¹⁶ More than three out of four (77%) health center patients have family incomes under 100% of the Federal Poverty Level (\$19,350 per year for a family of four). Forty-nine percent (49.5%) of health center patients are Hispanic/Latino, 24% are African American, 24% are White, and 2.1% are Asian/Pacific Islander. Nearly half (46%) of health center patients are Medicaid beneficiaries and 28% are uninsured.

The purpose of this study was to assess the mean age for the first dental visit for children coming to a FQHC in Bridgeport, CT.

MATERIALS AND METHODS

Data was collected prospectively on 176 children who visited the center in Bridgeport from Jan 2004 to December 2004. A detailed medical history and dental examination was performed. The following variables were noted: age at first dental visit (in months), ethnicity (Black, White, Hispanic, Other), and gender.

Statistical Analysis

Data are described univariately using means and standard deviations for the continuous measure of age, and frequency and percentage for categorical measures of ethnicity and gender. Box plots, showing the distribution of age, by ethnicity and gender are presented. Prospectively collected data was then analyzed by 2-sample t-test and Analysis of Variance (ANOVA). These tests were used to compare mean levels of age across gender and ethnicity respectively.

RESULTS

Data was analyzed on 176 children, of which 36% were black, 8% were white, 52% Hispanic and other minorities 4%. Male children constituted 52% of the patients and 48% were female children.

Table 1. Descriptive Statistics of Age at First Dental Visit at BCHC

Subgroup	N (months)	Mean age	Std. Dev.	p-value
Overall	176	48.1	25.5	
Race				.0181
Black	63 (35.8%)	51.1	30.8	
White	14 (8.0%)	62.2	34.8	
Hispanic	91 (51.7%)	43.0	18.7	
Other	8 (4.5%)	57.4	14.2	
Gender				.5461
Male	92 (52.3%)	47.0	24.9	
Female	84 (47.7%)	49.3	26.2	

*Note: ANOVA was used to obtain p-value for race. A T-test was used for gender.

Figure 1 and Table 1 describe the distribution of patient characteristics and ethnicity. Ethnicity had a significant impact (p=0.0181) on the age at which a child first visited the dentist, where as gender did not. Follow up post-hoc testing yielded a significant group difference between the Hispanic and White groups (p=0.0398) indicating that on aver-

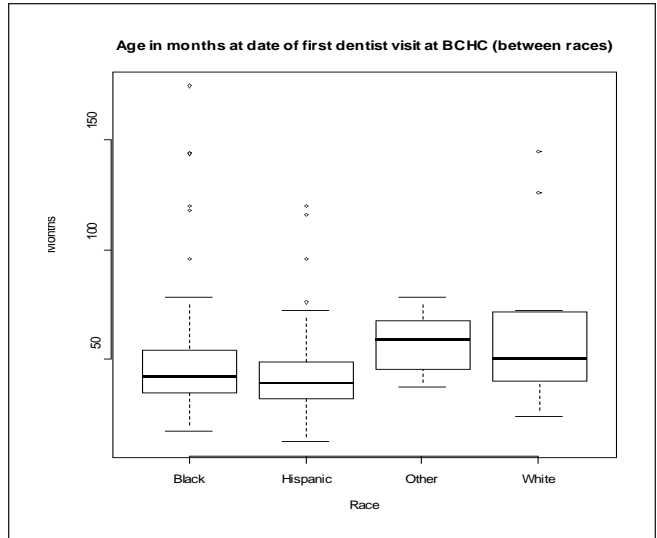


Figure 1. The mean age was 51 months for blacks, 62 months for white, 43 months for Hispanics and 57 months for other groups. There were no difference in the first visit according to gender (p=0.54).

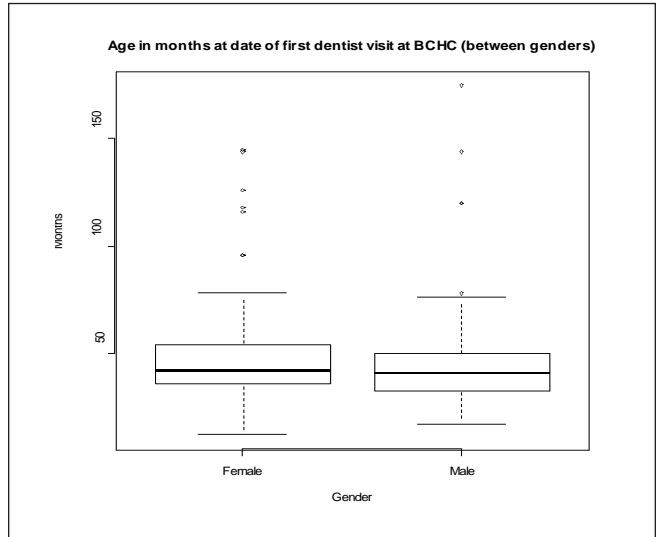


Figure 2

age Hispanic children visited the dentist at a younger age than White children. Figures 1 and 2 show the box plots.

DISCUSSION

Recommending and promoting early oral health assessment and dental visits for young children has been of prime importance of the American Academy of Pediatrics and the AAPD.

Approximately 20% to 25% of US children (about 20

million) experience 80% of all carious teeth.¹⁷ Prevalence and severity of childhood caries are linked to socioeconomic status across all age groups; black and Hispanic children are disproportionately affected by caries.¹⁸ Caries in children from lower-income households are more likely to remain untreated at all ages; many carious teeth in black and Hispanic children go untreated regardless of household income level.⁶ According to Newachuck,¹⁹ poor children (<100% of the federal poverty level) and near-poor children (100-199% of the federal poverty level) were 3 to 4 times as likely to have an unmet health need as children living in middle or higher income households (above 200% of the federal poverty level; $P < .01$ for both comparisons). Some parents avoid taking children to the dentist for financial reasons; yet, studies show that the dental cost for children who have their first dental visit before age one is 40 percent lower in the first five years than for those who do not see a dentist prior to their first birthday.²⁰

The mean age for the first dental visit at this center was 4 years. Bridgeport has a population of approximately 140000.²¹ 45% of the population is white followed by 31% Hispanic and 30% African-American. The median household income is \$36,000.²²

At the FQHC in Bridgeport, 8% of the population was white, 51.7% Hispanic and 35.8% African-American. The Hispanic patients presented for their first dental visit at 43 months, the African-American at 51 months and the white patients at age of 62 months (Table 1).

According to a survey done in Utah²³ in 2005 the earliest age dentists would see children was as follows: 0-1 Yrs (23.8%), 2 yrs (35.6%), 3 yrs (36%), 4 yrs (3.3%), 5-6 yrs(1.2%). The statistics from Utah indicate a first dental visit at an earlier age than Bridgeport.

Data from the 1996 Federal Medical Expenditure Panel Survey (MEPS) were analyzed to determine the percentage of children who obtained a dental visit and the number of visits children experienced by age, sex, ethnic/racial background, family income and parental education. Overall, 43% of all children from birth through 18 yrs obtained at least one dental visit in 1996. Among children who see a dentist, the average number of visits during 1996 was 2.7. Thus, low income, low education and minority status are all associated with not of having a dental visit and lower number of visits per utilizer. Chu May²⁴ 2007 also published data suggesting that children of families with higher income were more likely ($p < .05$) to have had a dental check up than were lower income children for each insurance status category. This was in contrast to a study carried out by Siegal et al.²⁵ He assessed the oral health status in Ohio head start children. He did not find any oral health disparities based on race and payment.

In another study by Edelstein children under 6 had less than half the dental visit rate of older children and had fewer visits per person among utilizers.¹¹

Preventing dental caries should begin with pregnant women and continue with the mother and newborn child. Dentists need to be more informed regarding current oral

health policies. Public health professionals who serve mothers and infants need to provide education to parents on the etiology and prevention of caries. The Pediatricians' role need to be expanded to include promotion of children's oral health. This role could be expanded to include counseling on caries prevention, assessment, and referral for dental problems, and even provision of a caries control treatment such as application of fluoride.²⁶ It is unclear however to what degree pediatricians are knowledgeable about preventive oral health. A survey conducted in Connecticut⁷ showed that a significant gap remains between practice recommendations supported by national academies and the ability and willingness of their members to implement these recommendations. 59% of the dentists who participated in the study were unaware of the AAPD policy and 47% of general dentists nationally were unaware.²⁷ In Connecticut 42% of the general dentists see 0-2 yr olds compared to 39% nationally²⁴ and just over 30% in a study in Ohio.²⁸

A survey was conducted to see how pediatricians valued the promotion of dental health and whether they were willing to take on additional activities to improve oral health.²⁶ According to the survey, pediatricians believed that they had an important role to play in promoting oral health but were ambivalent about assuming greater responsibility. Most pediatricians did not agree with the recommendation of the AAPD that children be referred to the dentist by 1 year. According to the AAPD (American Academy of Pediatric Dentistry) to prevent caries in children high risk individuals must be identified at an early age(high risk mothers during pre natal care) and aggressive strategies should be adopted including guidance, behavior modification, and establishment of a dental home by 1 year of age for children deemed at high risk.

High risk groups include: Special needs children; children with mothers with a high caries risk; children with demonstrable caries, plaque, demineralization and or staining, bottle or are breast fed children throughout the night, later order offspring, low socio economic status.

If a child is assessed to be within one of the above groups he should be referred to a dentist as early as 6 months of age and no later than 6 months after the first tooth erupts for establishment of a dental home. Providing a "dental home" is important and an effective way to begin a lifelong program of preventive dentistry. The dental home should be accessible, continuous, family centered, coordinated, compassionate and culturally effective. Parent guidance and education should include the following²⁹: Oral hygiene measures, diet education, fluoride; caries removal, delay of colonization of dental flora, and xylitol chewing gums.

CONCLUSIONS

As mentioned previously, the AAPD recommends the first visit be by the age of 1. In this study, children going to the Federally Qualified Health Center had their first dental visit at a mean of 48 months. Ethnicity had a significant impact when a child first visited the dentist whereas gender did not. The Hispanic child visited the dentist at an earlier age

compared to the white children. Despite federally qualified health center guidelines, stressing preventive and early detection of disease, patients are being seen later than recommended. Each FQHC has the opportunity to decrease dental caries in a population that is already at risk for caries. More needs to be done with a FQHC in establishing a dental home for the population they serve. Dentists and public health officials need to be aware of public health policies as it relates to dentistry.

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