

COMPARISON BETWEEN PARENTAL PERCEPTION AND CLINICAL ASSESSMENT OF
CHILD'S ORAL HEALTH IN HISPANIC COMMUNITIES

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A Senior Honors Project Presented to the
Honors College
East Carolina University
In Partial Fulfillment of the
Requirements for
Graduation with Honors

by
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Greenville, NC
May 2017

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Comparison between parental perception and clinical assessment of child's oral health in
Hispanic communities

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Abstract

Parents and children in rural Latino communities have disproportionately less access to oral health care than those living in urban or less rural areas. These parents are forced to rely more on their own perception to determine their child's oral health status than that of a health professional. Only Latino parents and children ages 0 to 5 years from rural areas of North Carolina were asked to participate in the study. Rural, as defined by the United States Office of Management and Budget, is a county with 9,999 residents or less.¹ Data collection was conducted during three separate days at local churches and schools. Forty-eight surveys and clinical assessments were completed. Of the 48 parents, only 2% perceived that their child had poor oral health. However, more than 50% of the children had tooth decay or caries present, and of those with caries, 75% had tooth decay on 3 or more surfaces. Two of the children needed emergency/urgent dental care. Parents participating in the study underestimated dental disease in their children when compared to clinical findings. This misconception may have a direct effect on their child's oral health since parents may forgo treatment if they are unaware of the issue. Given that early stages of dental disease may be asymptomatic, parents may only become aware of their child's needs at more advanced stages; therefore, oral health prevention and early intervention programs are encouraged in this community. The goal of this community-engaged study was to understand parent's perceptions of their child's oral health compared to the results from the clinical assessment performed on those children by students at the ECU School of Dental Medicine.

Background

Latinos are the United States' largest minority group (16.3% in 2010), and in North Carolina they represent 8% of the population.^{2,3} Lack of dentists, dental visits, and dental insurance in

addition to language, legal, cultural, structural, and financial barrier when accessing oral healthcare have contributed to the oral health disparity within Latino populations in eastern North Carolina.^{4,5,6} Research articles show that Latinos in rural areas of America have poorer oral health status than non-Latino American children.^{7,8} Furthermore, children born to Latino immigrants in the US are also more likely to experience oral disease than children born to non-immigrant Latinos in the US.⁹ Some literature also suggests that there are misconceptions among the Latino community as to what causes caries. In a study on rural Latino immigrant caregivers, caregivers reported brief understanding of three causes of oral disease (poor oral hygiene, bottle-feeding, and sugary foods) and popular causes (poor genes and lack of milk in diet). However, they also mentioned that they were unsure how bottle-feeding causes decay.¹⁰

Self-rated oral health (SROH) encompasses all of the intangible aspects of oral health that cannot be observed by the dentist in a clinical setting.^{11,12} It is the subjective approach to health that patients use to assess their own oral health condition. Parental perceptions of oral health (PPOH) is used as a form of measurement of the self-rated oral health of the child participants when the child participants are too young to give accurate ratings of self-rated oral health.

SROH is a multidimensional concept that includes biomedical factors, such as oral pain and tooth loss, recent oral issues, treatment histories, self oral hygiene habits, regular dental visits, and other behavior.¹² A subjective psychological process based on intuition rather than formal agreed definitions comprises self-rated oral health. The rating is a product of reflection and consideration of past and present experiences with one's oral health. Cultural and environmental factors influence what each individual uses to assess self-rated oral health, and therefore, the frames of reference of self-rated oral health varies between cultures.¹¹ The non-specific nature of self-rated oral health provides an advantage in that it can explain aspects of health that cannot

be answered by direct questioning. However, a drawback also arises from its non-specificity in that it is difficult for the researcher to objectively state which aspect of health the individual is highlighting.

Parents use the same factors to assess their own SROH as they do to determine the PPOH of the child. PPOH is also based off observable tendencies or habits of the child that may have that indicate possible dental issues; for instance, the parent observes the child always chewing food on the left side of his or her mouth.

PPOH and clinical assessment of oral health (CAOH) are related in that one can influence the other. Overall, researchers have found that there is a strong connection between self-ratings of oral health and clinical ratings of oral health, and as a result, it is used as a measure of analysis in clinical practice and assessment.¹¹ Some studies report self-rated oral health as a predictor of oral health decline, as well as current and future ratings of general health.^{11,12} On the other hand, some literature shows that there are very few associations between PPOH and CAOH, and among those, the significant trends are weak.¹³

CAOH is determined from objective evidence. Typically, dental professionals determine the CAOH as part of their regular assessment of patients. This assessment is usually carried out by a set of calibrated examiners for research purposes.

This was a sub-study of an ongoing study. This sub-study looks at parental perception of child oral health compared to clinical assessment of oral health within Latino populations in the eastern North Carolina region. We frame this study on the assumption that Latinos experiencing a lack of access to oral health care (and hence, lack the CAOH examination) mostly rely on the PPOH for determining their children's oral health status.

Methods

This community-engaged research is based on the collaboration between researchers at the School of Dental Medicine, East Carolina University and the director of AMEXCAN, a non-profit organization. The mission of AMEXCAN is “To encourage active participation of Mexicans and Latinas/os in our communities of destination and origin.”¹⁴ Promotoras, bilingual figureheads from AMEXCAN that support and promote Latino awareness in the community, acted as a bridge between the community and the outside world in this sub-study. Advertising of the data collection events were spread by word of mouth, email, and distribution flyers. Researchers visited local churches to inform the community of the study, and AMEXCAN promoted the study through their promotora program. Data collection occurred from June 2016 through August 2016. Participants in the study were gathered from community held Latino festivals and churches. There was no attempt to have a demographically diverse sample population within the Latino community to get a true sample population of eastern North Carolina. As many people that wanted to participate that met the criteria were allowed to. Participants were first asked to consent to the terms of the study. Since the child participants were too young to consent, the parents consented for them. After consenting, surveys were given to the parents to assess their parental perception of oral health and the corresponding child’s height and weight were recorded. If the child was too young to stand up straight against a wall to be measured, he/she was laid down and measured with string that was then held against a rule to record height.

Study Population

The target population for the study were Hispanic/Latino children ages 0-5 and one of their parents (either mother or father). Our target population was limited to eastern North Carolina,

specifically Greenville, NC. Participation criteria for enrolment in the original study included three factors: only Latino/Hispanic children five years of age or younger could participate the child must have dentition in the mouth, and the child must be accompanied by their mother or father. Conversely, children with known cognitive, visual, or hearing impairments were not allowed to participate in the study and neither were parents of children with any of these conditions (unless other siblings met the inclusion criteria).

Measures

Parental Questionnaires: The research team developed a survey with a variety of questions to measure parental perception of child oral health. Due to possible language barriers, the same survey was printed in both English and Spanish with the goal of making the questions as identical as possible despite implicit language barriers. The parental questionnaire included socio-demographic information, questions from a standardized and validated child oral health related quality of life instrument (ECOHIS), and questions from the dental literature.¹⁵ There were also questions that addressed general perceptions of child oral health, specific hygiene habits, and oral health complications. Examples of these questions included “How much is your child’s overall wellbeing affected by the condition of his/her primary dentition, lips, mouth, or jaw?” and “How would you rate your child’s dental health at this current time?” and “Has your child ever had a toothache, and what caused it?”

Clinical Inspection: The collection team was composed of dentists and dental students from the East Carolina University School of Dental Medicine. Under the supervision of clinical faculty, the dental students performed oral health inspections on the children. Oral health inspections and questionnaire interviews occurred in several locations including the AMEXCAN offices, schools, churches, and community events. The space was divided into three pronounced areas:

consent process, child play area, and oral health screening area. While the parents were giving consent to participate in the study, children were occupied with activities of coloring, playing games, and being taught how to brush primary dentition using toys. Due to their age, children were orally examined in the “knee to knee” position so the child could maintain physical contact with the parent. The examination/screening was conducted only using only a dental mirror and flashlight. To reduce the level of discomfort, oral health inspections lasted 5 to 10 minutes on average. Prior to examination, if necessary, the dentition was cleaned of debris and plaque and dried with gauze and/or cotton rolls. If the child was upset, various behavior management techniques were used, including “Tell-Show-Do.” Examination would not begin until the child was calm and comfortable. The research team measured clinically assessed oral health by counting the number of cavities and decayed primary dentition in each child participant’s mouth and recording both the decayed filled surfaces (dfs) and decayed filled teeth (dft) values. CAOHA consists of three parts: patient history, a comprehensive clinical evaluation, and a risk assessment. Patient history refers to any past oral health conditions or procedures that may influence the current health of the patient. The clinical evaluation includes a complete assessment of the gums, hard tissues, and physical trauma. Risk assessment is a quantitative and qualitative procedure that involves gathering information to determine if the patient is at risk for any future oral health issues.¹⁶

The East Carolina University and Medical Center IRB approved the study (UMCIRB 15-001756).

Analysis

The leading goal of this sub-study was to contribute to the scientific knowledge regarding Latino oral health in eastern North Carolina with CAOHA represented in a descriptive manner. Tests for

significance were not performed. CAO H was represented in univariate and bivariate fashions. A dichotomous crosstabulation table was used to display PPOH and CAO H data. Due to the small sample size, PPOH ratings were pooled and grouped into two categories of “Excellent, Very Good, or Good,” and “Fair or Poor,” and measured in continuous values.

Results

There were 48 Latino children from eastern North Carolina who were orally assessed by dental students while the children’s parents answered survey questions to assess their parental perception of their child’s oral health. The questionnaire also assessed factors including details about their pregnancy, infant feeding practices, and the child’s general health. Although 48 children were examined, two of the parental survey results for PPOH were inconclusive therefore eliminating the corresponding CAO H values from and Table 1. All 46 children examined had primary dentition, and less than 8 of the children had primary dentition. 21 (45.7%) of the 46 children examined were free of caries, while 25 (54.3%) of the children had decay present. None of the primary dentition was impacted by caries. Two children needed emergency dental care, and 13 children were advised dental treatment. 22% of parents reported that their children had excellent oral health, 28% reported very good oral health, 31% reported good oral health, 17% reported reasonable oral health, and 2% reported poor oral health. Also, 85.19% of parents reported that they typically take their child to the dentist only for an exam - not because they were aware of a current oral health issue, like oral disease. Furthermore, 7.41% of the parents reported that their usual reason for taking their child to the dentist was due to a toothache. 75% of the parents did not speak English.

Table and Figures

Table 1: Bivariate Crosstabulation of PPOH vs. CAO

| Number of Decayed Teeth in Each Mouth | Corresponding PPOH Rating Of "Excellent, Very Good, or Good" | Corresponding PPOH Rating Of "Fair or Poor" | Total |
|---------------------------------------|--|---|-----------|
| 0 | 20 | 1 | 21 |
| 1-3 | 13 | 6 | 19 |
| 4+ | 4 | 2 | 6 |
| | Subtotal: 37 | Subtotal: 9 | 46 |

Figure 1: Visual Representation of Total PPOH

■ Excellent ■ Very Good ■ Good
■ Reasonable ■ Poor

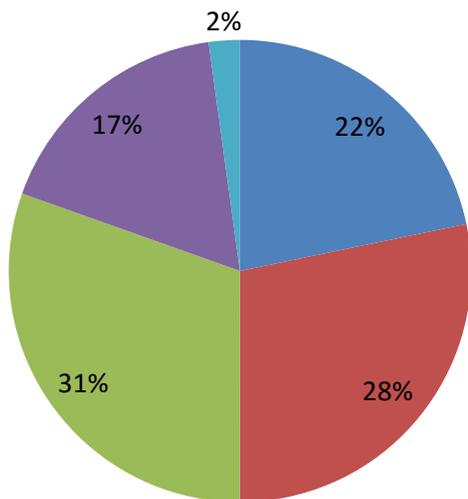
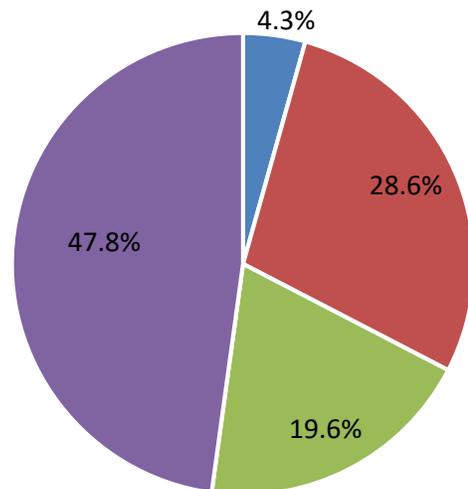


Figure 2: Visual Representation of Total CAO

■ Emergency care needed ■ Advised Treatment
■ Additional Evaluation ■ Continue Routine Care



Discussion

The purpose of this sub-study was to compare Latino parental perception and clinical assessment of child's oral health in eastern North Carolina. We found that the clear majority of parent participants perceived their child's oral health to be between "good" and "excellent" as shown in Figure 1 and Figure 2. Therefore, one would suspect that most of the children's clinical assessment of oral health would match. However, most of the children in the sample had caries when examined. This is displayed in Table 1. The findings also show that possible reasons for this misalignment of perception and reality could be due to issues with English literacy and lack of local dentists in Latino communities.

A vast proportion of parents reported to not speak English. This may be due to the fact that most dental offices in eastern North Carolina do not have translators readily available. The language barrier was also an issue for the Latino communities in similar studies with similar results.^{17,18} It is likely that the parents were unaware of their child's dental disease unless their child complained of toothache during later stages of the dental decay progression. This dilemma has been found to be more of an issue for a non-English speaking Latino parent than an English speaking Latino parent.¹⁸ The second most reported issue was that the professional dental services were located too far from the patient. It seems that due to the proximity issue in conjunction with a language barrier it appears that the parents do not take their child/children to the dentist often enough. This is also a commonly reported barrier in the literature.¹⁹

The findings of the sub-study cannot be extrapolated for the entire state of North Carolina's Latino population due to the small sample size and because the participants were recruited through convenience sampling.

Parents claimed that their proximity to dental offices is a significant issue. This is more of an issue for a Latino parent who does not speak English than a native speaker of English because a person who doesn't speak English has a much more difficult time figuring out how to make the trip to the dentist. For example, taking public bus transport through the city or knowing when to transfer buses would be more difficult for a Latino parent since they might not live in city limits.

Oral health knowledge and hygiene practices in North Carolina Latino communities seems to be based off the knowledge of elders, which could hint at where public health educators should focus their efforts when creating programs to ameliorate this issue. This notion is supported by a study that found that “children whose mothers last visited a dentist due to pain or emergency were more likely to have three or more decayed teeth.”¹⁷ The results found in this study could be used by dentists, promotoras, hygienists, and health care advocates to raise awareness about the disparities experiences by Latino communities in eastern North Carolina. Furthermore, North Carolina local, city, and state legislators could use this study to influence changes in policy to alleviate some of the barriers that negatively impact the oral health of targeted Latino communities in eastern North Carolina. Future studies could also use this data to analyse caries indices and clinical assessment of oral health in Latino communities.

Acknowledgements

I would like to thank the East Carolina University School of Dental Medicine Department of Foundational Sciences, the East Carolina University Honors College, and AMEXCAN non-profit organization for their support in undertaking this research.

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