

RESEARCH ARTICLE

Perceptions of Oral Health, Preventive Care, and Care-Seeking Behaviors Among Rural Adolescents

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ABSTRACT

BACKGROUND: An asymmetrical oral disease burden is endured by certain population subgroups, particularly children and adolescents. Reducing oral health disparities requires understanding multiple oral health perspectives, including those of adolescents. This qualitative study explores oral health perceptions and dental care behaviors among rural adolescents.

METHODS: Semistructured individual interviews with 100 rural, minority, low socioeconomic status adolescents revealed their current perceptions of oral health and dental care access. Respondents age ranged from 12 to 18 years. The sample was 80% black and 52% male.

RESULTS: Perceived threat from dental disease was low. Adolescents perceived regular brushing and flossing as superseding the need for preventive care. Esthetic reasons were most often cited as reasons to seek dental care. Difficulties accessing dental care include finances, transportation, fear, issues with Medicaid coverage and parental responsibility. In general, adolescents and their parents are in need of information regarding the importance of preventive dental care.

CONCLUSIONS: Findings illuminate barriers to dental care faced by low-income rural adolescents and counter public perceptions of government-sponsored dental care programs as being “free” or without cost. The importance of improved oral health knowledge, better access to care, and school-based dental care is discussed.

Keywords: adolescents; oral health; rural; care-seeking.

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Oral health is a fundamental component of general health.^{1,2} Dental disease, a major preventable public health challenge, is both universally prevalent and a significant burden for children and adults.³⁻⁵ Oral health research confirms persistent disparities in the oral disease burden endured by certain population subgroups including children and adolescents.^{5,6} Findings from the third National Health and Nutrition Examination Survey (NHANES) indicate that among children and adolescents ages 6 to 19, 42% experience dental caries in the permanent teeth.⁷ The Centers for

Disease Control and Prevention (CDC) estimates that 50% of low-income children and 66% of low-income adolescents experience dental caries.^{5,8,9} Also alarming are the long-term effects of early dental disease on childhood learning capabilities,^{10,11} as well as on behavioral and social development.⁵ Over 51 million school hours are lost annually by US children due to dental-related problems.^{5,12}

Predictors of oral disease prevalence include public awareness of oral health and dental disease, use of dental services, application of dental sealants, and

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self-care which includes daily flossing and brushing with a fluoride-containing dentifrice.^{5,13} Whereas public awareness can aid in reducing, and eventually eliminating, oral health disparities, underserved and high-risk communities often do not perceive the necessity or oral health or benefits conferred by regular dental care.⁵ Early intervention, including treatment for dental disease and age-appropriate prevention counseling, requires a greater understanding of oral health perspectives during life stages and at the community and individual levels.¹³ Although studies assessing adolescents' perceptions and knowledge of oral health care and dental care-seeking appear in the literature,¹⁴⁻¹⁶ most employ secondary analysis of large data sets or originate from other countries.

Qualitative studies exploring adolescent oral health knowledge and behaviors, and complexities underlying access to care in the United States are rare.¹⁷ Future oral health interventions will benefit from further knowledge of adolescent oral health perspectives and behaviors.¹⁸

The 2008 Institute of Medicine report *Adolescent Health Services: Missing Opportunities* describes the importance of understanding adolescent health behaviors, particularly those of low socioeconomic status (SES) and minority background adolescents.^{19,20} In light of these recommendations, the purpose of this study was to identify perceptions of oral health and access to dental care among a sample of low SES, minority adolescents.

METHODS

Participants

Self-selected participants were 100 adolescents ranging in age from 10 to 18 years and residing in 1 of 2 federally designated Medically Underserved and Dental Health Professional Shortage Areas in North Florida. The sample was 52% boys, 80% blacks, and 91% non-Hispanics/Latinos (Table 1).

Instruments

The interview guide was adapted from a guide used previously with a sample of low SES, minority adults.²¹⁻²³ Research objectives included exploring adolescent knowledge of oral health, oral healthcare-seeking behaviors, and perceptions of parental attitudes toward oral health care. The interview guide was pilot-tested with adolescents (N = 16) residing in 2 similar Florida communities.

Data Collection and Procedures

Between August and December 2011, a member of the research team (C.B.) conducted semistructured interviews with adolescents residing in 2 rural, low-income communities. Middle school free and reduced

Table 1. Sample Demographics

	% (N = 100)
Sex	
Boys	52
Girls	48
Race	
African American/black	80
White/Caucasian	13
Other	7
Ethnicity	
Non-Hispanic	91
Missing response	9
Sees a dentist regularly	
Yes	65
No	35
Time since last dental visit	
< 1 year	52
1 to 2 years	23
Never or +2 years	25

lunch program rates ranged from 59% to 64%, respectively. Community organizations and outreach programs serving eligible students aided in identifying potential study participants.

Recruiting and consent. During meetings sponsored by community organizations and outreach programs, trained research team members presented attendees with a brief oral description of the study and answered questions. Using an explicit consent protocol, parental consent for adolescent study participation and interview audiotaping was obtained. Prior to the interview adolescents provided assent. Participants received a \$35 gift card for their time.

Interview process. Semistructured interviews ranging from 45 to 60 minutes in length were conducted by the same researcher in locations conducive to privacy and audio-recording. The open-ended interview questions explored participant perceptions of oral health and dental care.

Data Analysis

Audiotapes were transcribed verbatim. Prior to coding accuracy of the transcripts was confirmed by 2 research team members who compared each written transcript with the audio-recorded interview. Identified inaccuracies were reviewed by a second team member and corrections were made accordingly. Data coders were calibrated via simultaneous coding of 3 randomly selected transcripts. Upon completion of preliminary coding, both coders and a research team member (V.D.) reviewed, discussed, and resolved discrepancies. Transcripts were coded using QSR International's (Burlington, MA) NVivo 9 software.

RESULTS

Attaining equitable sex and community representation, along with topic saturation required a greater

number of interviews than most qualitative studies. Study findings are organized by emerging themes. Participant quotes in each section were chosen to represent the majority.

Perceptions of Oral Health and Disease

Participants were asked to name “good” reasons for going to the dentist. Interestingly, most were adept at providing reasons for not going to the dentist. Because most respondents believed that their risk of oral disease was eliminated by brushing and flossing, and personal susceptibility to oral disease was low. Expressions of low susceptibility were justified by statements such as: *“Because I brush my teeth twice a day and floss. I do a good job”* or *“If your teeth are clean, you don’t need to go to the dentist because your teeth are already clean and not messed up.”* However, several respondents reported feelings of susceptibility heightened by family members’ past oral disease experiences. One adolescent described a mouth cancer exam as a good reason for going to the dentist. He stated: *“I know I am susceptible to mouth cancer; it runs in my family.”* Another often cited “good” reason for care-seeking was to alleviate any negative esthetic effects stemming from lack of regular care such as having *“skank teeth,”* or periodontal disease.

Adolescents not receiving regular dental care were asked whether this was something they would like to receive. All but one of the adolescents responded affirmatively to this question. However, further discussion revealed complex and persisting dental care access issues for many respondents. For example, approximately 35% of respondents reported not having a regular dentist, and another 25% had not been to a dentist for at least 2 years, and 25% reported at some time needing but not receiving dental treatment.

Respondents were asked to describe the benefits of regular preventive care. Overwhelmingly, adolescents cited esthetic benefits such as *“to keep your teeth clean”* or *“having whiter teeth and fresh breath,”* whereas others responded with one word, *“appearance.”* Another often-described esthetic benefit was *“to see if you need braces or not.”* Following esthetic benefits, *“preventing cavities”* was named by all but a few respondents. However, early disease intervention as an outcome of regular preventive care was specifically mentioned in only 4 interviews.

Respondents were asked to describe any difficulties faced when seeking dental care, specifically a cleaning and checkup. Responses were rapid, specific and include the following categories: (1) finances, (2) transportation, (3) issues related to Medicaid use, (4) parents, and (5) fear.

Financial Concerns

Lack of money was a barrier common to almost all participants. Adolescents were quick to describe

the “added costs” of dental care. These include transportation, childcare costs, and unpaid time away from work. Most adolescents described the cost of dental care in general as problematic for family budgets. All adolescents mentioned the costs associated with dental care. Adolescents with access to regular dental care referenced the cost of dental care in general, or the cost of dental insurance. Adolescents without dental insurance, including Medicaid recipients, described nonemergency dental care, as placing an “extra burden” on their family budget. Interestingly, the only participant who described dental care as “no cost” was an adolescent who described receiving dental care when the dental van visited his school. Interestingly, as an afterthought to this description he added: *“If I dropped out of school I couldn’t go to the dental van no more.”*

For most adolescents financial concerns related to the high cost of fuel, long travel distance, and lack of public transportation. For this sample, transportation issues were frequently mentioned as barriers to dental care access. Inability of the respondent and/or their family to overcome these barriers negatively influenced perceived self-efficacy. When explaining why people, including themselves, do not go to the dentist regularly, respondents typically replied: *“Most people don’t have rides to go.”* Also relevant to transportation issues were lack of mass transit and travel time. This was especially true for Medicaid recipients. The lack of dental care providers, especially Medicaid providers, within close proximity compromised their ability to arrive on time for appointments. Timely travel was described as especially difficult by adolescents who traveled from rural to urban areas to access dental care. One respondent described an instance when car problems, coupled with travel distance and traffic, caused him to be late for his appointment. Frustration was present in his description of events: *“When I went there they told me I had to come back because my dentist appointment was already canceled.”* In reference to travel distances and the cost of gas, respondents stated, *“We don’t have the money to keep going back and forth. It’s like wasting your money because you have to keep paying for gas every time you go back.”*

Medicaid

The majority of Medicaid-eligible respondents identified Medicaid-related treatment rules and regulations as barriers, along with the lack of Medicaid providers in rural communities. These barriers were described as intensifying transportation costs, time factors, and financial issues. Some adolescents described their frustration, and that of their parent, when persistence in meeting appointment prerequisites was rewarded not with an appointment, but merely placement on

a waiting list and an explanation that the Medicaid dentist is “booked up and there is no room for you to get in.”

Respondents were quick to explain that scheduling an appointment does not alleviate all access barriers. Respondents described barriers present immediately prior to the appointment, such as extended travel time and distance, uncertain availability of transportation, traffic, crowded waiting areas, and long office waits before receiving care. Respondent descriptions of these barriers included: “My dentist is like 2 hours away.” “People go in there and do not want to wait because it’s a small office and it’s overcrowded.” Others described “not wanting to wait 2 hours before going back [to see the dentist].”

Parental Availability

For many parents/caregivers accessing dental care for their adolescents is a complex and multistep process. Parental responsibility encompasses both scheduling the appointment and ensuring their child presents for care on the appointed day and time. Accounts by a number of respondents illustrate that even though an appointment is scheduled, lack of family resources can still compromise their ability to attend the appointment.

One adolescent sounded frustrated as she talked about missing her dental appointment: “What prevented me from going? My dad had to work that day and he didn’t have the money to spend on gas.” Another adolescent described the additional childcare cost as a common barrier to care, “Yeah, like how some people can’t pay for child care and the dentist.” Overall, adolescents described last minute unavailability of a parent on the day of an appointment as a common reason for not accessing regular preventive care.

Also mentioned as a barrier to self-efficacy was the lack of emphasis some parents placed on getting dental care. Various respondents said their parents just “don’t think about oral health care.”

Fear

For this sample, 60% of respondents (30 boys and 30 girls) offered at least one fear statement when describing why people do not go to the dentist. Because the majority of adolescents associated dental care with fear, their statements were analyzed in an attempt to identify common sources of fear.²⁴ Specifically, fear statements involved needles and injections, the dentist, and fear of the dental office environment. Other common elements included fear of pain and fear of bad news. Whereas few associated their fear with the dental provider, one adolescent attributed her initial “fear of the dentist” to her unfamiliarity with the person providing care. However, she subsequently noted the dissipation of her fear once she “got to know the dentist.” Other respondents attributed their

fear to “dentist stories” told by others. The power of these stories as barriers to regular dental care emerged as respondents discussed reasons for avoiding dental care. As one participant stated: “Maybe they heard like bad stories from other people and they don’t want it to happen to them.”

Fear of pain, another often-described reason for avoiding regular dental care, included references to “needles and drills,” along with injection-related pain, painful gums after the appointment, “sharp things in the mouth,” extraction pain, pain from a “rough” dentist, procedure-related pain, and unexpected pain such as when cold water touches a sensitive tooth. Several respondents described pain as “lingering for days afterward.” Interestingly, most respondents admitted limited personal experience with the examples above, but related their perceptions of pain and resulting fear to the experiences of others, learned mostly through stories.

Respondents described fear of bad news as a reason people delay care. Fear of bad news includes needing an extraction or dental care that exceeds one’s ability to pay. Overall, respondents believe most people avoid dental care because they “don’t want to know what’s wrong with their teeth...” and because “Some people don’t have the money. . . . They are afraid to go to the dentist because they might find something wrong with them that they don’t want to know.”

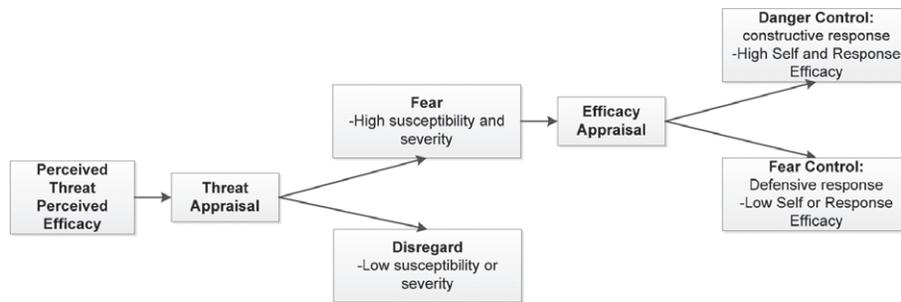
Adolescents often described “fear of being judged by the dentist” as an access barrier. Many participants believed that entering a dental office with yellow or discolored teeth will cause them to be judged as a “less than desirable” patient by the dentist and staff, resulting in them “being looked down upon.” Respondents described “yellow teeth” as both embarrassing and a reason for staying away from the dentist. Other reasons for avoiding care were having bad breath and feeling embarrassed about one’s teeth. One adolescent described his reasons for avoiding dental care by stating: “Well, I just didn’t want people to know I had bad teeth, that’s all.”

DISCUSSION

Dominant themes emerging from the data were efficacy and threat. Also present were strong perceptions of oral disease severity, predominantly in relation to the perceived negative consequences attached to poor oral appearance.

Because adolescent attitudes are still forming, the Extended Parallel Process Model (EPPM), developed by Petty and Cacioppo²⁵ to understand how attitudes both form and change, provides a useful framework for this discussion. The EPPM stems from the fear appeal literature and is based around two key variables: Threat and Efficacy.²⁶⁻²⁸ Threat is comprised of Susceptibility (do you think “threat x” will happen to you) and

Figure 1. Extended Parallel Process Model²⁶



Severity (do you think “threat x” is serious enough to warrant your attention). According to the model when perceived threat is low, individuals ignore the threat and take no action. Efficacy is comprised of Self Efficacy (do you believe you can perform the provided solution to “threat x”) and Response Efficacy (do you believe the provided solution will work in minimizing “threat x”). The EPPM posits that in the presence of low efficacy, perceptions of threat will motivate individuals to adopt behaviors that ameliorate their fear of the threat, but not necessarily the threat itself.²⁶⁻²⁹ Behaviors used to ameliorate fear include avoiding a situation or denying that a disease or problem exists.

Within the context of preventive dental care, behaviors are adopted when, confident in their ability to perform the required behavior(s), individuals accept recommended threat-reduction (eg, regularly brushing and flossing) actions. When perceived threat is low, individuals ignore the threat and take no action. Alternatively, when efficacy is low or absent, perceived threat (of dental disease) causes individuals to adopt behaviors intended to reduce their fear of dental disease (eg, not thinking about it), but not necessarily the disease threat (Figure 1).

For these adolescents, most fear statements were a direct reflection of low self-efficacy resulting from numerous barriers encountered when seeking care. Fear statements correspond to response efficacy or the belief that regular dental care provides a solution to the threat of dental disease. However, low self-efficacy, imposed by numerous access barriers, disallows engagement in the solution (control of threat of oral disease via regular dental care). Low perceptions of threat expressed by this sample should not be construed as contradictory to the above assertion because developmentally, adolescents often feel personally invincible to disease.²⁹

Response efficacy was high, with all respondents recognizing the value of regular preventive dental care and its role in disease prevention and improved oral health outcomes. However, for nearly 50%

of respondents, negative parental response efficacy, including low confidence in, or a lack of value attached to preventive dental care is problematic. Also of concern are adolescent perceptions of parents as both unaware of, and unconcerned about oral disease. However, in the context of the EPPM the lack of awareness or concern would be expected because Florida Medicaid coverage for adult dental services excludes preventive and restorative care.³⁰ Specifically, in the presence of low efficacy (parental inability to receive dental treatment) and high threat (knowledge that they are susceptible to dental disease), parents would be expected to mitigate the threat through avoidance and denial.^{25,31} Responses that likely appear to adolescents as lack of awareness and concern. Without oral health education, and changes in access and policy the adult response of these adolescents will likely be similar.

Among these adolescents the perceived threat or negative outcome most associated with dental disease was related to appearance and social acceptability. They rarely talked about the consequences of decay such as having a cavity, pain, or restorative dental visit. Dental decay was perceived as something that happened to someone else. When discussing dental disease respondents would typically remind the interviewer of their low susceptibility to decay because they brushed and flossed regularly. It is important to note that the validity of their oral hygiene claims was never evaluated, nor was the efficacy of their brushing/flossing. Even so, it appears these adolescents use “regular brushing” as the litmus test for a healthy mouth. The continuous and exclusive association between good oral health and regular home care negates the need for professional care, a luxury most low SES parents cannot afford for their children or themselves. As a result, the belief that susceptibility to oral disease is diminished by brushing/flossing serves to lessen the fear associated with the threat of oral disease, which can lessen motivation for seeking regular dental care. Therefore, the association between oral health and cleanliness

(gained through regular brushing) stems from parental reinforcement of this belief, coupled with media and print advertising from oral care product companies.³² For example, campaigns such as the *2MIN2X* national campaign launched in August 2012 by the Ad Council and The Partnership for Healthy Mouths, Healthy Lives targets low income parents with children up to age 12.³³ The campaign reinforces the link between a healthy mouth and regular oral hygiene, but fails to stress the link between preventive dental visits and children's long-term oral health.

As such, these findings raise questions in regard to the portrayal of oral health and dental disease via media messages featuring benign oral health information along with products promising "fresh breath" and a "healthy mouth."³⁴ Oral health education informing parents of both the causes and consequences of dental disease in children and adolescents, including the relationship between poor oral health and subsequent chronic disease, would likely increase parental oral health awareness and concern.^{34,35}

Community efforts, media accounts and professional communication portraying the relationship between chronic pain and unchecked dental disease in children as limiting life potential through increased school absenteeism and resulting deficiencies in learning, social, and behavioral development may raise awareness as to the need for early and regular preventive dental care.³⁴⁻³⁶ This information is critically important for adolescents who become parents and responsible for their child's oral health and development.

However, in low SES populations, shifting current perceptions of preventive dental care from that of a luxury to a necessity will require additional interventions. Our analysis of fear statements reveals the use of denial, avoidance, and rationalizing as fear controls; a finding in alignment with the EPPM assertion that in the presence of low self-efficacy individuals are motivated to reduce their fear by fleeing (ie, through denial, avoidance, or rationalizing) the situation. In addition to fear, other barriers to self-efficacy include traveling long distances to access dental care, with 1-way travel times ranging from 45 minutes to 2 hours, depending on provider location, lack of public transportation, limited parental availability, and financial concerns, including lack of dental insurance.

Recent national discussions acknowledge the significant number of children and adults who lack the means to afford dental care or insurance coverage.⁵ However, these discussions fail to acknowledge that low or no cost oral health care is not without cost. For many low SES families, even with coverage provided, dental care will remain unaffordable. Present findings point to a reality faced by many low SES parents and

their children, dental insurance benefits, public or private, do not remove all barriers to oral health care access. For these adolescents and others like them, the identified barriers, compounded by rigid system demands, provide insight as to why emergency dental care access is their only viable option.

Limitations

Despite the rich data emerging from this study, limitations exist. We employed a self-selected convenience sample of adolescents recruited at youth-oriented community program meetings; adolescent study participation was likely influenced by the opportunity for compensation. The accuracy of these self-reported data is unknown and the possibility of adolescents offering responses that they believed would please the interviewer cannot be discounted. Findings from this study may not be generalizable to other groups, but probably provide an accurate representation of Medicaid-eligible adolescents in the rural South.

IMPLICATIONS FOR SCHOOL HEALTH

Currently, a number of US schools, usually in conjunction with local health departments or community-based programs, offer oral healthcare services consisting of dental screening, fluoride treatments, application of fluoride varnish, and/or application of dental sealants. The majority of these services are provided in rural schools and to children in elementary grades. School-based oral health services for older children and adolescents are not as common. Even less common are school-based clinics that offer restorative services.

The links among oral health and school absenteeism, low achievement, and self-esteem present compelling evidence for provision of school-based oral healthcare services to students of all ages.³⁶ Relevant, age appropriate oral health education combined with, at minimum, preventive oral healthcare services would benefit students at all grade levels. Additionally, access to school-based oral health care would address some of the issues faced by parents when attempting to access oral health care for their children.

The adolescents in this sample equated dental care with pain. Most failed to connect regular dental care with prevention or lessening of dental disease and associated pain. Some adolescents based their perception on stories heard from others, or from witnessing family members' experience with dental pain and subsequent emergency care. These experiences point to a need for adolescent and adult oral health education, especially because parents often describe going to the dentist as "something their family never did." Information provided to students and parents through newsletters, health fairs, PTO

presentations, and other venues can interrupt the generational cycle of poor oral health experienced by many low SES families.

Efforts to incorporate components of oral health education into a curriculum would serve to provide consistent, relevant, and age appropriate information to students at all grade levels. However, information alone cannot solve the persisting oral health disparities experienced by children and adolescents.

School-based health centers have improved children's health and contributed to improved academic performance.^{37,38} The addition of dental care services in school-based health centers would contribute to increased academic and life success for students of all ages.

In the current economic climate the tasks and responsibilities placed on educators and school systems is enormous. Whereas dispersing oral health education throughout a curriculum and advocating for school-based oral health care adds to an already large burden, increased attention to oral health knowledge and care will benefit students' lifetime academic performance and personal growth.

Along with augmenting the oral health disparities literature, findings demonstrate the complexity of oral healthcare access faced by some adolescents and their families. These findings point to a critical balance between knowledge, threat, efficacy, and cost that must be reached if oral healthcare access, and individual oral health, is to improve. Of benefit to this field of inquiry is interpretation of the data within a theoretical framework. The EPPM constructs of threat and efficacy offer suggestions for components of future interventions and point to the need for interventions offering information structured to increase the relevance of oral disease both to adolescents and their parents, as well as a need to consider the role and strength of other dental care access barriers, and the promise of addressing oral health through school-based programs and services.

Study findings also reveal adolescent perceptions of dental care and offer direction for educational interventions; in particular, interventions that acknowledge the multiple complex and interwoven access issues described by the adolescents in this sample. Also illustrated are the complexities inherent in dental care access for low-income rural adolescents, as well as the influences of self-efficacy, fear, and defensive response when seeking care. Last, these findings can serve to remind educators, providers and policymakers of the disproportionate cost burden present for low-income families even when taking advantage of "free" or "low-cost" health care.

Human Subjects Approval Statement

The University of Florida Institutional Review Board (IRB01) approved the protocol.

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