

# Preventive Dental Care Programs for Children: Parental perceptions and participation barriers

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## Abstract

**Purpose:** Dental caries is a chronic childhood disease disproportionately affecting children from low socioeconomic backgrounds. Free preventive oral health events sponsored by dental organizations are frequently under enrolled. The purpose of this study was to explore parental perceptions and barriers to participation in preventive dental care programs for their children.

**Methods:** The transtheoretical model and social cognitive theory were used to design this qualitative case study. Open-ended questions were used to interview 20 purposefully sampled participants regarding their perceptions of free preventive dental care programs. Interviews were audio recorded, data were transcribed verbatim, coded, and analyzed thematically until saturation.

**Results:** Two male and 18 female parents ranging in age from 22 to 49 years, with at least one child enrolled in a Title 1 New York City public elementary school, agreed to participate. Nine themes emerged from the data addressing the primary research question on the perceived barriers preventing parents from allowing their children to attend a free preventative dental care program. The themes included too busy, afraid, lack of trust, cultural differences, lack of awareness of the program, cost of care, money, negative childhood experiences and lack of dental insurance.

**Conclusion:** Results from this study demonstrate the need to understand barriers to full enrollment in preventive oral health programs. Particular attention should be given to cultural differences between the program providers and the local residents. Preventative oral health program organizers need to explore multiple communication options to notify parents of upcoming programs.

**Keywords:** dental public health, access to care, dental caries, pediatric oral health

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## Introduction

Dental caries is a chronic disease among children with a prevalence higher than asthma.<sup>1</sup> Caries most often affects children's permanent teeth between the ages of 5 and 15 years, following the eruption of the first and second molars.<sup>1</sup> Over the past twenty years, governmental strategic plans have included commitments to eliminate oral health disparities in children.<sup>2,3</sup> Professional dental organizations frequently offer children residing in at-risk neighborhoods, convenient opportunities to take part in free oral health disease prevention programs, including dental examinations, sealants, and fluoride treatments.<sup>2-5</sup>

Oral health disparities continue to exist among low-income racial/ethnic minority groups.<sup>3</sup> Data from NHANES 2011-2012 demonstrated that untreated dental caries was twice

as high among Hispanic and non-Hispanic Black children, aged two to eight years, as compared to non-Hispanic White children in the same age group.<sup>1</sup> Improving access to care through public health programs however, does not always lead to an uptake in taking advantage of preventive care opportunities.<sup>6,7</sup> Children qualified to receive free preventive care frequently lack the required informed consent to attend these programs leaving them susceptible to disproportionately higher levels of dental disease.<sup>6,7</sup> Insight into the perspectives of parents regarding their children's oral health in general, may help dental disease prevention programs to be more successful in the community and increase in the number of high-risk children receiving preventive dental care.<sup>3,6-10</sup> Understanding the rationale underlying parental refusal of preventive care

may also help in identifying the social, economic, and policy implications of oral health decision making.<sup>5</sup>

While it is known that that children, up to age 18, of families living below the poverty level are at greater risk than other similarly aged cohorts of developing dental caries,<sup>3,10,11</sup> it is also noteworthy that the perceived threats due to dental disease, have been found to be low in adolescent populations.<sup>9</sup> Both adolescents and their parents, have been shown to hold the belief that regular brushing and flossing supersedes the need for preventive care.<sup>9</sup> The health belief that dental disease does not present a threat to one's health and along with misplaced priorities can influence behaviors. Parents of these children also described going to the dentist as something that that was never done in their family.<sup>9</sup> Low self-efficacy, as demonstrated by parents who never sought out regular dental care during their own upbringing, can be seen as a barrier to recognizing the importance of preventative dental care for their children. Understanding contributory factors and intervening within a learned behavior occurs in a dynamic social context and includes reciprocal interactions of the person, environment, and behavior.

Participants in pediatric oral health programs have articulated frustrations regarding their lack of access to dental care, with contributory factors including finances, transportation, fear, issues with Medicaid coverage, and parental responsibility.<sup>7,11,12</sup> However, when preventive services are made available through public health programs, they are not fully utilized.<sup>6,7</sup> Dental sealants are an example of a preventative service that may be offered through a free public health program. While dental sealants are recommended for all permanent molars, research has shown that sealants are underutilized, particularly among low-income families and in racial and ethnic minority groups.<sup>13-16</sup>

Gaps in the literature indicate a need for further qualitative studies exploring the emotions and attitudes of parents towards their children attending and receiving free preventive dental care.<sup>6,7,8,11</sup> Identifying and addressing parental attitudes can lead to more effective program design and aid in the reduction of oral health disparities in children. The purpose of this study was to explore parental attitudes, perceptions, and barriers to attending free preventive dental care programs located in designated low-income urban neighborhoods.

## Methods

A qualitative case study design was used to explore oral health perceptions and dental care behaviors of parents of children, attending a Title I New York City elementary school, over a six-week period in 2017. The study received

approval by Walden University Institutional Review Board (IRB # 04-21-17-0456669). Data collection instruments included an anecdotal observation form<sup>17</sup> and an open-ended interview script. Observations included body language, attitudes towards the interviewer, preventive programs, and their child's oral health. The observation checklist allowed the principal investigator (PI) to visually describe the parent participants during, and after data analysis.

Upon completion of the informed consent document, twenty interviews were conducted and recorded face-to-face with the PI and the parent or guardian. The survey instrument consisted of 22 semi-structured and open-ended questions, inspired by a similar seminal qualitative study by Kelly et al.<sup>18</sup> Modifications were made to the instrument to include multicultural specificity. The survey was pilot tested on six professional colleague parents for clarity and validity; no further revisions were necessary. The interview questions utilized constructs from the Social Cognitive Theory (SCT) and Trans Theoretical Model (TTM) to demonstrate self-efficacy in the parent or guardian's dental care seeking habits, self-efficacy of their children's oral health, and their stages of contemplation of change.<sup>19</sup> This framework was chosen in order gain a better understanding of parental perceptions of barriers to care and low self-efficacy.

### *Sample selection*

The sample population consisted of parents/caregivers of one or more children, between the ages of 5 and 15 years, attending a Title I New York City (NYC) public school that was also providing free lunches. These schools serve families with low incomes, with many earning below \$24,240 for a family of four.<sup>20</sup> Inclusion criteria were being a parent or guardian over the age of 18 and the ability to speak and read English. Recruitment consisted of posting flyers in public places near three randomly chosen Title 1 elementary schools. The first group of parents were recruited in Manhattan, Chinatown (Site 1), group two were recruited in Brooklyn (Site 2), and group three was recruited on Staten Island (Site 3). Interested participants who met the inclusion criteria were asked to sign an informed consent form prior to an interview. Incentives to participate included a \$5.50 MetroCard and \$15.00 gift card.

### *Interview process*

The in-depth interviews were held in a location selected by the participant and included settings such as local libraries and a coffee shop. Participant comfort during the audio recorded interview allowed for detailed discussion regarding their views and past experiences of free dental programs and enabled the PI to prompt and explore the ideas and issues

that emerged. Interviews were timed and lasted for a maximum of 20 minutes. The fieldwork consisted of reflective journaling at the interview settings, and audio recording conversations and interviews. Audio recording interviews allowed for verbatim transcription and analysis.

The purposefully descriptive case study design facilitated a thorough understanding of participants' feelings.<sup>21,22</sup> Precoding scrutinized the data by pointing to deeper issues that deserved further attention prior to the formation of the data matrices.<sup>23</sup> The matrices intended to show sequential steps used to link the emerging themes and provide credibility. The interviews, PI's notes, and observations were transcribed into a matrix and placed into the software program NVivo11 Pro (QSR International, Doncaster, AU). Transcribed interview data were coded for themes. Axial coding involved the linking of data to reveal categories and themes. Selective coding involved identifying relationships between categories and their integration into the axial coding model in order to develop themes. Lastly, advanced coding was performed to situate the final codes in relationship to main themes of the study.

Investigator triangulation ensured consistency in interpretation of the data. Constant comparative analysis was performed. Each interview was transcribed and analyzed prior to recruiting any future participants to ensure that the generated hypotheses were continuously verified and developed until saturation.

**Table I. Participant demographics (n=20)**

Ethnicity	n
White	3
Hispanic or Latino	4
Black or African American	7
Asian/Pacific Islander	5
South Asian/India	1

## Results

Two male and 18 female parents ranging in age from 22 to 49 years agreed to participate. Participants had children ranging in age from 18 months to 20 years and each participant had at least one child enrolled in a Title 1 NYC public elementary school. On the average, each household in the study had two children, however two households had up to eight children. Participants were from low socioeconomic backgrounds and resided in low-income neighborhoods. The sample population was representative of the high-risk demographic for children with oral health disparities. Complete demographic data is shown in Table I.

Nine themes emerged from the data relating to the primary research question regarding the perceived barriers preventing parents/caregivers from allowing their children to attend a free preventive dental care program. Sub questions related to parental trust and how to effectively promote preventive dental programs were also addressed.

**Table II. Perceived barriers related to time and fear**

Key themes	Categories	Selected extract
Busy, no time	Scheduling	"Too busy"
	Transportation	"I don't have the time, it's not important, not the number one thing"
	Laziness	"Convenience, laziness, I'm being absolutely honest, ummmm, parents want convenience" "I would say scheduling, that it could be transportation and scheduling and staying organized if you have more than one kid"
Scared	Might hurt	"They're scared, or the parents themselves are scared"
	Concerned about cost	"Maybe the child is scared, or maybe the parents feel like the work their child may need might be a lot"
	Worried about care	"Going to the dentist is scary and it might hurt"

The first theme, "too busy," captured how participants described potential reasons including transportation, scheduling and laziness for not escorting their children to preventive oral health programs. Theme two was "scared or fear" which reflected how participants described their own feelings regarding going to the dentist or how they thought their children would react (Table II).

The third theme, "cultural differences," related to cultural influences on preventive health care decision making, how cultural dissimilarities impacted decisions on how parents chose oral health providers, and why parents decide not to seek preventive services. Participants were hesitant to attend a program where their own ethnic background was not represented. The fourth theme, lack of trust, emerged as parents expressed concerns over dental professionals not speaking their language or not looking the way they did. Parents were hesitant

**Table III. Barriers related to trust and culture**

Key themes	Categories	Selected extract
Trust not an issue	Did it as a child Recommended Benefit	<p>“I grew up in Japan and every year we would see a different dentist I think every year for me it’s so natural”</p> <p>“I mean if it’s like a dentist I don’t know or not recommended maybe I would be a little bit more cautious”</p> <p>“It’s a benefit to child and parent not to run around and find someone”</p>
Trust is an issue	Communication/ language barrier Lack of education Unsure of motive Cultural	<p>“I would be more open to someone who speaks my language”</p> <p>“It was trust ... I had heard it was interns and they didn’t know what they were doing”</p> <p>“What’s the motive, what are they getting out of it? They don’t want to genuinely help us when that’s the not the case all the time”</p> <p>“I think it’s the trust of confidentiality, we live in a society where it has been broken a lot, so it’s more so anytime you hear you need to give social or private information”</p> <p>“Culturally no matter what race you are, pride is always an issue”</p>

to attend a program where their “ethnic background was not represented.” These themes are presented in Table III..

The fifth theme, “unawareness,” involved the participants lack of knowledge regarding the free preventive programs. Responses in this category ranged from language and literacy barriers to lost forms and included recommendations for better communication methods (Table IV). The sixth and seventh themes were related to cost of care and finances. The eighth theme, “negative experiences or traumatizing childhood experiences,” related to how some parents described receiving dental care as children. The ninth theme, “lack of dental insurance,” was expressed as a barrier to dental care visits. Most parents expressed that they “would not go to the dentist without dental insurance.”

## Discussion

Results from this study confirm the themes of time, cost, lack of insurance, and fear that have been identified in previous studies.<sup>11,12,14</sup> Additional themes such as lack of trust and cultural differences were also identified. The results validated that cultural sensitivity and trust in dental professionals continue to be lacking in low-income, culturally diverse populations.<sup>6,12,24</sup> Educating and supporting care-givers on the importance of oral health care is integral to improving children’s oral health.<sup>6,7,24</sup> Findings from this study substantiate the continued need for cultural competency and sensitivity within public health areas.

Guarnizo-Herrano, et al., suggested that there was limited evidence-based knowledge regarding how parental influence affects preventive dental-care-seeking behavior for children.<sup>12</sup> The low-income, culturally diverse parents in this study held the attitude regarding preventative dental care of “out of sight, out of mind and if it’s not bad, no worries” which may influence their decisions to opt out of participation in a preventative care program. The participants attitudes towards seeking preventative oral care, rather than emergency based care, for themselves as well as their children was also similar to research on pregnant mothers and routine dental care for their children.<sup>25</sup> Mothers’ oral health knowledge, behaviors and attitudes have been shown to impact the value that they place on preventive care for their children.<sup>25</sup> Results from this study also support the findings of Divaris et al., on the role of parental influence on their children’s entrance into the dental care system.<sup>7</sup> Low perceptions of the threat of dental disease may reduce children’s oral health care to an as-necessary or emergency only, basis.<sup>7</sup>

Baldani et al., suggested that cultural beliefs and perceptions regarding the need for oral health care key are predictors of access for low-income children.<sup>24</sup> Findings from this study also demonstrate how the role of parental belief systems can positively and negatively influence ways that parents seek free preventive care. While mothers identifying with poor oral hygiene habits and infrequent dental visits have been shown to negatively influence the oral hygiene habits and frequency of dental visits of their toddlers,<sup>25</sup> participants in this study who did not have dental care as children, self-reported wanting to take their children to the dentist.

A significant finding in this study was the role of culture and ethnicity played in influencing permission for participation in an oral health program and should be further investigated with the additional elements of family history, language, immigration status and neighborhood demographics. Multiple ethnic groups participated in the current study. It is worth noting that the majority of parents identifying as Black expressed a lack of trust in free preventive oral health services as compared to the Asian participants. This

**Table IV. Barriers related to program awareness**

Key themes	Categories	Selected extract
Unaware of program	Advertise more	“They don’t advertise it much”
	Notices or consent forms in my language	“Sometimes when it is so public people tend not to go, but when it’s a bit more private they do attend”
	Send reminder	“I could not read the language”
		“I just wish the schools took more time to speak to the parents I think that’s what it is mostly”
		“Lack of information, really parents might not be aware of what’s available”
		“They would send a paper and we used to throw it away. We didn’t even look at it we can’t read the paper”
		“Sending reminders out with texting helps ..... tech savvy text messages help better than the email or voicemail. As a parent, when do we have time to sit down and read our emails at the end of the day?”

could be due to the Asian participants having been exposed to preventive oral health care services during childhood.<sup>26</sup> Future research should examine the role of culture and ethnicity to exposures to preventive dental care during one’s childhood and subsequent enrollment in public health programs. Given the skepticism expressed by some of the participants regarding who is sponsoring the oral health initiatives, there is also a need to incorporate more leaders and dental professionals reflective of the ethnicities of the local neighborhood to increase trust and participation.<sup>26</sup>

Social phenomena such as facial recognition of leaders as well as referrals and recommendations of providers and health services play a part in how members of certain cultures seek preventive oral health care.<sup>27</sup> Participants in this study identified “referrals, recommendations, and recognition of community leaders” as ways to encourage parental consent. More information is needed to better understand how interactions in social networks relate to how parents seek preventive oral health services or conversely deny preventive care opportunities.

Parent participants expressed they were “unaware of the program,” or reported a lack of knowledge about a free preventive program for their children, concept that has not been previously explored. Participants suggested letters sent home were often misplaced or unread, “they would send a paper and we used to throw it away we didn’t even look at it, we can’t read the paper”. Electronic communication such as emails were also ineffective with participants stating that they lacked the time to read them. Participants suggested that text messaging or phone notifications may be more effective means of communication. Taking into consideration the literacy levels of the community along with the multiple responsibilities of working parents, developing communication strategies recommended by the parents themselves, might increase the acceptance of

preventive dental care programs and overall enrollment.

This study had limitations. In discussing personal information, such as the oral and dental care habits of parents and their children, there was a possibility of response bias. Participants could have altered their responses, to please the interviewer. While the majority of participants stated that they would allow their children to attend a preventive oral health program, it was not possible to confirm that they had actually attended. The study sample was also small and limited to one urban city in the United States. Future research should be designed to include a larger sample size of parents/caregivers in multiple locations with multiple interviewers to increase validity and generalization of results.

## Conclusion

Untreated dental disease is a painful condition and children do not have a voice in seeking preventive care. Parents and caregivers may not fully understand the consequences of declining participation in free preventive oral health programs due to low perceptions regarding the consequences of dental disease. Findings from this study also illustrate the need for dental professionals to be from the community or physically resemble the individuals found in the neighborhood and have a passion for enabling change. Preventative oral health program organizers need to explore multiple communication options to notify parents of upcoming programs.

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## References

1. Dye, BA, Li X, Thornton-Evans G. Oral health disparities as determined by selected Healthy People 2020 oral health objectives

- for the United States, 2009–2010. NCHS Data Brief. 2012 Aug;(104):1-8.
2. Devine B. Reaching the Texas dental goals of Healthy People 2010. *Tex Dent J*. 2011 Dec;128(12):1255–9.
  3. Fischer DJ, O’Hayre M, Kusiak JW, et al. Oral health disparities: a perspective from the National Institute of Dental and Craniofacial Research. *Am J Public Health*. 2017 May (S1):S36-S38.
  4. Devlin D, Henshaw M. Improving access to preventive dental services through a school-based dental. *J Dent Hyg*. 2011 Aug 8;85(3):211–9.
  5. Olmsted J, Rublee N, Zurkawski E, et al. Public health dental hygiene: an option for improved quality of care and quality of life. *J Dent Hyg*. 2013 Oct;87(5):299–308.
  6. Kino S, Kawachi I. Can health literacy boost health services utilization in the context of expanded access to health insurance? *Health Educ Behav*. 2020 Feb;47(1):134-42.
  7. Divaris K, Lee JY, Baker AD, et al. Influence of caregivers and children’s entry into the dental care system. *Pediatrics*. 2014 May; 133(5): e1268–76.
  8. Dye BA, Thornton-Evans G, Li X, Iafolla, TJ. Dental caries and sealant prevalence in children and adolescents in the United States, 2011–2012. NCHS Data Brief. 2015 Mar;(191):1-8.
  9. Dodd VJ, Logan H, Brown CD, Cattalano, F. Perceptions of oral health, preventive care, and care-seeking behaviors among rural adolescents. *J Sch Health*. 2014 Dec;84(12):802–9.
  10. Beck JD, Youngblood M, Atkinson JC, et al. The prevalence of caries and tooth loss among participants in the Hispanic community health study/study of Latinos. *J Am Dent Assoc*. 2014 Jun;145(6):531–40.
  11. Chi DL, Momany ET, Jones MP, et al. Relationship between medical well baby visits and first dental examinations for young children in Medicaid. *Am J Public Health*. 2013 Feb;103(2):347–54.
  12. Guarnizo-Herreño CC, Wehby GL. Explaining racial/ethnic disparities in children’s dental health: a decomposition analysis. *Am J Public Health*. 2012 May;102(5):859–66.
  13. Chi DL. Reducing Alaska Native paediatric oral health disparities: a systematic review of oral health interventions and a case study on multilevel strategies to reduce sugar-sweetened beverage intake. *Int J Circumpolar Health*. 2013 Aug;72(1):21066.
  14. Wallace BB, Macentee MI. Access to dental care for low-income adults: perceptions of affordability, availability and acceptability. *J Community Health*. 2012 Feb;37(1):32–9.
  15. Gugnani, N. Trial shows caries reduction at a one-year school-based sealant programme. *Evid Based Dent*. 2013 Sept ;14(3):71.
  16. Ahovuo-Saloranta A, Forss H, Walsh T, et al. Pit and fissure sealants for preventing dental decay in permanent teeth. *Cochrane Database Syst Rev*. 2017 Jul;31(7):1-129.
  17. Aussie Childcare Network. Anecdotal Record Observation [Internet]. Sydney (AU): Aussie Childcare Network; 2017 [cited 2018 Mar21]. Available from: <http://aussiechildcarenetwork.com.au/eylf-templates/child-observations/anecdotal-record>
  18. Kelly SE, Binkley CJ, Neace WP, Gale, B. Barriers to care-seeking for children’s oral health among low-income caregivers. *Am J Public Health*. 2005 Aug;95(8):1345–51.
  19. Prochaska JO, Wright JA, Velicer WF. Evaluating theories of health behavior change: a hierarchy of criteria applied to the transtheoretical model. *Appl Psychol*. 2008 Jul;57(4):561–88.
  20. Office of the Assistant Secretary for Planning and Evaluation. Poverty guidelines [Internet]. Washington, DC: Us Department of Health and Human Services; 2018 [cited 2018 Mar 21]. Available from: <https://aspe.hhs.gov/poverty-guidelines>
  21. Maxwell JA. *Qualitative research design* 3<sup>rd</sup> ed. Thousand Oaks, CA: SAGE Publications; 2013. 218p.
  22. Miles M, Huberman M, Saldana J. *Qualitative data analysis: a source book*. 3<sup>rd</sup> ed. Thousand Oaks, CA: Sage; 2014. 381 p.
  23. Saldana J. *The coding manual for qualitative researchers*. 3<sup>rd</sup> ed. Thousand Oaks, CA: Sage; 2016. 339 p.
  24. Baldani MH, Mendes YBE, Lawder JADC, et al. Inequalities in dental services utilization among Brazilian low-income children: the role of individual determinants. *J Public Health Dent*. 2011 Winter;71(1):46–53.
  25. Rahbari M, Gold J. Knowledge and behaviors regarding early childhood caries among low-income women in Florida: a pilot study. *J Dent Hyg*. 2015 Apr;89(2):132–8.
  26. Stets, JE. Fares, P. The effects of race/ethnicity and racial/ethnic identification on general trust. *Soc Sci Res*. 2018 May;80:1-14.
  27. Valente TW, Palinkas LA, Czaja S, et al. Social network analysis for program implementation. *Plos One*. 2015 Jun;10(6).