

FRAMING YOUNG CHILDREN'S ORAL HEALTH: A PARTICIPATORY ACTION RESEARCH PROJECT

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ABSTRACT

Chimere C. Collins: Framing Young Children's Oral Health: a Participatory Action Research Project
(Under the Direction of Kimon Divaris)

BACKGROUND: The project sought to understand what parents of young children consider important and potentially modifiable factors and resources influencing their children's oral health, within the contexts of the family and the community.

METHODS: This qualitative study employed Photovoice among 10 English-speaking parents of infants and toddlers who were clients of an urban community clinic in North Carolina. The primary research question was "What do you consider as important behaviors and family and community resources to prevent cavities among young children?"

RESULTS: Emerging themes included daily life struggles that parents face and that appear to interfere with children's oral health and care. Financial constraints were pervasive, but parents identified several mitigating strategies involving home care and community agents.

CONCLUSIONS: The role of parents/caregivers is pivotal in determining their children's oral health trajectory. Interventions should take into consideration the role of families and the communities they live in.

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“For I know the plans I have for you,” declares the Lord, “plans to prosper you and not to harm you, plans to give you hope and a future. Jeremiah 29:11

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LIST OF ABBREVIATIONS

ECC- Early Childhood Caries

WIC- Supplemental Nutrition Program for Women, Infants and Children

I. INTRODUCTION

Despite widespread acknowledgement of the importance of childhood oral health, little progress has been made to-date in the prevention of early childhood caries (ECC).^{1,2} Improving children's oral health has been the focus of concerted efforts by numerous policy, professional and academic bodies and groups; however, ECC persists as the most common chronic childhood disease and continues to affect an increasing number of toddlers and preschoolers in the US.^{3,4} Importantly, the disease is marked by pronounced health disparities, with social, economic, and racial minorities carrying the greatest disease burden.^{1,5-7} ECC and its restorative treatment often require specialty care and procedures involving advanced behavior guidance modalities such as sedation and general anesthesia; these can have multi-level impacts on the children's physical and psychosocial health, as well as financial consequences for their families, communities, and the health system.⁸

Children's oral health and care is largely determined by their family environment. The influence of the family on children's oral health and care is well-documented⁹⁻²⁰ and parents have been the focus of efforts to prevent ECC development. Despite these efforts, oral health is frequently articulated as an important but often neglected aspect of well-care during the first years of life. Delivering accurate and actionable information to parents regarding their children's oral health is fundamental but can be challenging.²¹

While much is known regarding 'proximal' oral health behaviors that help prevent ECC (e.g., tooth brushing with fluoride toothpaste, healthy diet, and establishment of a dental home), less is documented regarding specific circumstances and influences on families' daily lives that interfere with optimal oral health and care. Survey-based studies have reported on factors such as parental education, dental neglect, and inability to access health services which function as barriers to adopting the recommended child oral health-related behaviors.^{16,17,23} Our knowledge is categorically limited, therefore not much has been noted in previous research with regard to specific, daily-life and community-related factors that impede optimal oral hygiene, diet, care, and ultimately oral health for children.²⁴ Our study sought to address this knowledge gap by gaining insight into what parents themselves consider relevant and influential with regard to their children's oral health, within the contexts of the family and the community. To answer this question, we specifically targeted a low-income group of parents of infants and toddlers who were clients of a WIC location in North Carolina.

II. REVIEW OF THE LITERATURE

Early childhood caries: definition, prevalence and causes

Dental caries has persisted during the last decades as an important public health issue worldwide, especially amongst children and underserved populations.^{3,4} The term “early childhood caries (ECC)” was introduced at a 1994 workshop sponsored by the Center for Disease Control and Prevention in an attempt to focus attention on the multiple factors (socioeconomic, behavioral, and psycho-social) that contribute to caries development at early ages. ECC is defined as the presence of one or more carious lesion (cavitated or noncavitated) in the primary dentition of a child under the age of 72 months.²⁵ ECC can be a particularly aggressive form of dental caries,²⁶ beginning soon after dental eruption and progressing rapidly if left untreated. It has also been shown that childhood caries is associated with increased likelihood of dental caries development later in life.²⁷ In the US, about 17% of preschool children experience ECC. Specifically in NC, it was indicated by Rozier that approximately 40% of children have experienced dental decay before Kindergarten.⁶²

The disease is known to be caused by a complex interplay of behavioral and dietary factors (e.g., fermentable carbohydrates intake and lack of fluoride exposure) as well as more upstream factors (e.g., parental education and socioeconomic status) and proximal factors (e.g., oral microbiome and genetics).^{26,28} National statistics in the United States indicate that ECC is most prevalent among children in families from low socioeconomic strata. ECC is also more prevalent among racial and ethnic minority groups, such as African Americans, Hispanics, and Native Americans.^{1,4,5} Studies also show that ECC is likely associated with low parental health literacy and dental neglect.^{16,17} The restorative treatment of ECC often requires advanced behavior guidance approaches, including anxiolysis, conscious sedation or general anesthesia.⁸ In sum, ECC is a serious public health problem with consequences for the affected children, their families, and the health system. Preventing ECC is an ambitious goal, but one that is likely to be achieved with concerted efforts of multiple stakeholders (e.g., policymakers, community organizations, health care providers, parents/caregivers, and their communities).^{2,7}

The role of parents/caregivers in their children's oral health and care

The importance of the family environment in shaping oral health cannot be overemphasized. Parents play a key role influencing and facilitating oral health behaviors in their children. Young children are totally dependent on their caregivers for essentially all of their oral health oversight; especially for preschool children, caregivers are responsible for “high stakes” health behaviors such as feeding patterns, oral hygiene and oral health care. It is not surprising that certain characteristics of parents/caregivers have been shown to be associated with these oral health behaviors. These include but are not limited to socioeconomic status, education level, oral health knowledge, beliefs and attitudes.^{14,15,19,31}

For example, in a 2007 study among over a thousand African American families in Detroit, Finlayson and colleagues found that mothers who were more knowledgeable about their children's oral hygiene needs, felt more efficacious and brushed their own teeth, had children who brushed more frequently.¹⁴ Arguably, young and first-time mothers may have no knowledge or previous experience in engaging in tooth brushing and oral hygiene practices for infants and toddlers.^{15,32} It stands to reason that improvements in children's oral health and care are likely to be realized via interventions aimed to improve parents/caregivers' knowledge regarding optimal child-directed oral health behaviors. However, it is important to acknowledge that these individual behaviors are nested within the contexts of a family, a community, and a health system.^{2,7,31,33}

The role of the community context for young children's oral health and care

The overwhelming influence of upstream determinants (social and community factors) on children's oral health has received increased attention in recent years,^{7,34} and it is now understood that location (as defined by state, zip code, or even neighborhood) is a major determinant of children's health outcomes, including oral health.³⁵ A growing body of evidence supports the existence of multiple mechanisms linking the social context with children's oral health.³⁶⁻⁴² Specific community and neighborhood effects such as location and who is mainly affected by ECC have also emerged in the literature,⁴³⁻⁴⁵ although little information is typically reported on specific, actionable items or the potential relevance or acceptability of postulated community interventions to improve children's oral health. On the other hand, existing public health and community programs such as The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) and Early Head Start/Head Start (EHS/HS) have been

shown to play an important role in improving oral health knowledge and facilitating access to dental care for young children.^{23,46,47}

The knowledge gap

While much is known regarding ‘proximal’ oral health behaviors that help prevent ECC (e.g., tooth brushing with fluoride toothpaste, healthy diet, and establishment of a dental home), less is documented regarding specific circumstances and influences on families’ daily lives that interfere with optimal oral health and care. Survey-based studies have reported on factors such as parental education, dental neglect, and inability to access health services to function as barriers to adopting the recommended child oral health-related behaviors.^{10,14,15} Our knowledge is categorically limited with regard to specific, daily-life family- and community-related factors that impede optimal oral hygiene, diet, care, and ultimately oral health for children.

Purpose

Our study sought to address this knowledge gap by gaining insight into what parents themselves consider relevant and influential with regard to their children’s oral health, within the contexts of the family and the community. To answer this question, we specifically targeted a low-income group of parents of infants and toddlers who are at increased risk for ECC. Our objectives were to: 1) understand the daily-life experiences and community characteristics that relate to young children’s oral health and; 2) to identify novel strategies and community resources available to improve young children’s oral health and care.

III. MATERIALS AND METHODS

Research methodology: Photovoice and Community Mapping

We took a participatory research approach to implement this project. We chose photovoice as a participatory methodology and community mapping as participatory research tool to achieve our research objectives. Photovoice is a qualitative research methodology wherein participants use photographs as a means of highlighting issues and factors related to a given problem in the context of their daily lives and the communities they live in. The sharing and discussing of participants' own photographs is a powerful means of communicating life experiences, expertise and knowledge.⁴⁸ Photovoice has been used in recent studies seeking to understand complex health and social issues including food insecurity, childhood obesity and sexual and reproductive health.⁴⁹⁻⁵³ Results from these studies detailed how the participatory approach used in photovoice can improve the understanding of basic human needs and the social determinants of health, and could be used to inform community leaders and even legislators on how to improve health and welfare policy.⁴⁹⁻⁵³

Community mapping is a method of data collection that allows for participants in research to identify their community resources and assets. Community mapping can help identify and clarify the concept of community, how people connect to it and what places that are already been used by the community can be used for health promotion.⁶⁰

Participant recruitment and eligibility

In August of 2015, we recruited a group of 10 parents (8 families, specifically 2 males and 8 females) of infants and toddlers who were clients of a WIC center in central North Carolina as study participants. Screening and enrollment was conducted by approaching families in the waiting area of the WIC center. At that time, the investigator explained the study objectives, procedures and anticipated schedule of events. The inclusion criterion for this study was that participants should be able to speak and understand English, be parents/caregivers of infants and or toddlers ages 6-36 months, and were recipients of WIC in Durham County. Eligible participants who expressed interest in participating, provided their contact information and assent for being contacted when study activities were to

commence. The study protocol (#15-1085) was approved by the Office of Human Research Ethics of The University of North Carolina at Chapel Hill.

Photovoice and Community Mapping Implementation

In our study, we conducted 5 photovoice sessions. We deemed that 5 sessions for our study would provide a balance of richness of ideas and information with practicality and subject retention. Breakfast was provided to participants at each session. Participants were provided a \$15 gift card for each session they participated; and gift cards were given to participants at the end of the last session. Digital cameras were also provided to participants for the duration of the study, and they had to return them at the end of it. Each session consisted of two moderators with knowledge in oral health (dental hygienist) and photovoice/public health and health behavior (sociologist).

During the first session, participants were familiarized with the study goals and procedures, and were given specific guidance with regard to taking photos. Specifically, the participants were asked to take photos around their community that they believed best represented the questions presented during the sessions we drafted several research questions that became the photo assignments, meaning the questions participants would answer via the photos. After each session, we provided participants with their assignment and they had a week to complete it. For example, after the first session, we provided participants with the first photo assignment. Participants had a week to do their photo assignment and we discussed the photos for assignment one in the second photovoice session. We repeated these steps throughout the project. The lists of assignments were:

Assignment 1:

What is good oral health for you?
How is your child's oral health different from yours?

Assignment 2:

What series of events lead a child to experience oral health problems?

Assignment 3:

What do you as parents consider important behaviors to prevent oral health problems among your children?
What can you do as parents to prevent oral health problems among your children?

Assignment 4:

What are family and community resources needed to address the oral health issues of your children?
What support do you need as parents to keep your children's oral health in good shape?

Photos obtained by the participants were compiled and discussed in subsequent sessions according to the SHOWeD process, developed by Wang⁴⁸: “What do you **S**ee here? What is really **H**appening here? How does this relate to **O**ur lives? **W**hy does this situation, concern or strength **e**xist? What can we **D**o about it?”

At the end of session 4, participants developed and discussed a community map, in order to help them prepared for assignment 4. The instructions for the community map were to draw a map of the places they frequently attended during a regular week and weekend, including work, recreation, or household-keeping related places (such as grocery shopping).

IV. RESULTS

The participants were generally candid, open and enthusiastic about the topic and the Photovoice assignments. All participants contributed to the given assignments and discussion; however 6 out of 10 participants were retained until the last session. Except for the second session which was moderated solely by the first author, all sessions were moderated by CC (the first author; a Dental Hygienist) and LVT (the second author; a sociologist, and PhD candidate in Health Behavior). During the fourth session, KD (the senior author, a board-certified Pediatric Dentist with public health training) attended the discussion on community mapping and helped answer participants' questions related to oral health after the end of the group session.

Photo assignment 1: What is good oral health for you? /How is your child's oral health different from yours?

Participants were able to hone in on what they felt was important in regards to "good oral health care" through their pictures and dialogue. All the participants acknowledged the importance of oral health for themselves and their young children, but this was accompanied by a few misconceptions. For example, oral health was mainly conceived as avoidance of problems and costly restorations and one participant remarked that a positive oral health behavior is essentially whatever "*Keeps you out of the dentist's chair.*" Participants shared personal as well as others' experiences of children having to undergo restorative dental treatment at a young age due to "cavities" or "trauma". These experiences were accompanied by negative notions including "pain" and "suffering". Participants also discussed their interpretation of differences between their oral health from their children's such as, the types of toothpaste they would use for their child/ren versus what they would use for themselves, importance of "baby teeth" etc.

The participants had conversations regarding the risks and benefits associated with choosing bottled versus community (presumably optimally-fluoridated) water. Some parents were not familiar with words associated with oral health, (i.e. the proper pronunciation of fluoride, however, they wanted clarity on the subject.

Male: *Can't you over ... I don't know what the word is? Fluorinate?*

Moderator: *Fluoridate.*

Male: *Yourself.*

Female: *You can but it's a huge amount. Like over years.*

Male: *It's hard to do?*

Moderator: *...all well water and tap are regulated (fluoride levels) now, but back in the day they weren't regulated...*

Male: *So tap is better than bottle.*

Female: *In terms of fluoride, yes.*

Photo assignment 2: *What series of events lead a child to experience oral health problems?*

The participants most frequently cited lack of knowledge as a major contributor to oral health problems among young children. The knowledge topics included oral hygiene including use of fluoridated toothpaste, diet including types of solids and beverages (e.g., community water versus bottled, sweetened beverages vs. unsweetened beverage) types of snacks, and when children should transition from a bottle to a cup. The overwhelming influence of financial constraints to purchase healthy food was evident:

Male: *The things that are healthy, as far as the juices we were talking about with foods, are more expensive the better they are for your child. It makes no sense to me.*

Female: *We live in a country that subsidizes processed food, and makes the really good stuff expensive (...)*

On another example of financial-related decisions, one participant expressed her difficulty in choosing to purchase bottled water when outside the house because of its similar price with other beverages that seem to offer more.

Female: *Yeah, it's like that same price, and at that point I'm like, "Well, you know, I'd rather pay for something tasty."*

Daily life struggles were another frequently group of issues brought up by the participants. This included time constraints that prohibited healthy diet and feeding choices. For example, food and beverage choices were discussed stimulated by a participant photo (**Figure 1: Photo 2**) illustrating different beverage options available in their house. Convenience appeared to underlie most decision-making related to daily choices.

Female: *Sometimes we as adults do what's quick. Not necessarily what's best for you, but just what's quick.*

Female: *[...] You're like, "Gosh. I have to get dinner on the table in an hour. Nothings ready, nothings thawed, nothings prepped." Some of those foods that require more work cost more. They cost less, but then there's the time fits into the equation. If you don't have time, then you're stopping and buying a pizza, doing those sorts of things. [...]*

Other constraints related to the oral health of children were the inability to take sufficient time off work for routine dental checkups. Participants also mentioned the inconvenient time/schedules that dental offices are typically open relative to their own work schedule, a discussion that was stimulated by one photo (**Figure 1:Photo 1**) illustrating a dental clinic advertising being open late hours, as reflected in the following dialogue:

Female: *I definitely needed a dentist that's open after 5:00PM*

Female: *That's the point. To be able to go after school or get the kids to bed and go.*

Female: *Most offices close at 5:00PM or they stop taking appointments at 4:30PM. It's hard. I know I need to go. I want to go (...)*

Female: *If you have a half day you're available, they're booked for 6 months.*

Female: *Certain days of the week.*

Female: *Yep, that's another issue.*

The lack of adherence to optimal oral hygiene routines and the constant fighting with their young children were issues that parents deemed to be preventive of good oral health, which was exacerbated by children dealing with other health-related and behavioral issues.

Female: *For myself, with my daughter, in the beginning when we really first started brushing it was really hard. I used to get really frustrated, and sometimes ... There'd be days where I'm like, "You know what? Time to go to bed."*

Female: *My son's the opposite. He's 6 and he hates routines. He hates doing anything that involves going to bed, but he also has behavior issues. He has ADHD an all the fun stuff. So ... Even though he's used to it, and he knows it's coming he will fight to no end to not do it, and he's the one that's pointing his finger and is like, "No. I don't want to do that."*

Disagreements between parents were also cited as frequent issues related to oral health practices:

Female: *The tension, maybe, among parents. One parent like this and then the other and you're trying to ...*

Female: *My case, I'm the one that always brings it up. My husband is ... My kids have him wrapped around their little fingers. "Daddy, can I have this?" "Yes." They're spoiled brats when it comes to daddy.*

Finally, one participant expressed her concern that children may not be able to escape a trajectory of negative (oral) health behaviors or outcomes that the parents have experienced.

Female: *You know, or we're out and about someplace. It just ... Some of it ... Not just fruit snacks, but just packaged snacks in general, or just ... It's a convenience thing. [...]*

Female: *The children are a reflection of us. Sadly.*

Participants often articulated budget constraints as they relate to accessing dental services and that medical case is likely to be prioritized over dental.

Female: *Like, "Oh you have a cavity. There's another \$100.00. Oh look, there's this issue." It seems like there's always something. Oh sure that's covered, but you still have to pay for this.*

Female: *I think that definitely drives people away from going to the dentist.[...]*

Female: *They figure, "As long as I brush my teeth at least once a day, try to eat okay, then that's how we're going to have to do it because we can't afford to go to the dentist."*

Yet, some other parents had to make the decision of prioritize their children's health (including their oral health) over theirs, as expressed by the following participants:

Female: *[...] Well he hasn't been to the dentist yet, but he's also not all that cooperative. My kid's, definitely. They are up to date on their pediatrician visits, my daughter's dental care. He'll get there eventually. I kind of budget that, or I prioritize that. I shuffle to make that happen over mine.*

Female: *I have a tooth, it's just bad because it needed a crown. I had a root canal and it needed a crown and that's \$500.00 after insurance. That like my food budget for a month. That's a month of food for our family.*

Photo assignment 3: *What do you as parents consider important behaviors to prevent oral health problems among your children? What can you do as parents to prevent oral health problems among your children?*

The participants identified several promising strategies to help promote optimal oral health for themselves and their young children including adherence to professional recommendations regarding oral hygiene (e.g., brushing with fluoridated tooth paste), a healthy, balanced diet and oral health care (e.g., preventive dental visits).

Female: *Okay. I think for me good oral health is just make sure I'm brushing my teeth and flossing regularly to prevent any [inaudible], diseases, orally with diseases, and malfunction. [...]*

Female: *Eating the right foods.*

Moderator: *Eating the right foods. What else?*

Male: *Regular dental exams.*

The parents were also adamant about forming routines with their children, setting and sticking to rules, and cooperating with each other to encourage children's healthy habit formation.

Female: *My son actually has a routine with my father (child's grandfather). They brush their teeth together, because when I try he ... I try to let him do it, he just take the toothbrush, and take off running. So, I just let him. Go ahead and y'all go brush your teeth. I don't know what they do in there.*

Female: *Start your day off with a healthy start.*

Female: *Routine.*

Female: *Establishing good habits.*

The participants agreed that children generally like to have fun in learning new routines and that they should be thinking of novel, innovative ways to encourage healthy oral care habits/routines, including modeling of older siblings or parents. Routines also help parents to deal with their children's behavior.

Female: *As being a parent I try and get in a routine, because now she'll even ... I say, "Let's go upstairs. Get ready for bed", and then she'll say, "Brush teeth? Brush teeth?" It's like now she knows we brush our teeth before we go to bed. Like I said, getting that routine, and doing it with them. I think it really helps kind of get them started on their own oral health care routine.*

Moderator 2: *So maybe slowly incorporating into their routine.*

Female: *I said, "It's all about repetition." You got to just do it over, and over, and over.*

Moderator 2: *Do you think that that helps you as a mother?*

Female: *Yeah it definitely does, because ... I mean, if she wants to do it, and it's like ... Like now, I don't have to put up as much of a fight with something. You know, "Okay, time to brush teeth." It's something that's kind of fun for her I think.*

Assignment 4: *What are important family and community resources to address the oral health issues of your children? What support do you need as parents to keep your children's oral health in good shape?*

This last question highlighted the importance of peer support, social networks and community programs in the participants' daily lives, in general and as it relates to their children's oral health. The WIC center, friends, family, churches, community centers, healthcare providers and other parents formed the parents' network.

Female: My son's school. He goes to the church preschool, so I meet the other parents there. Playgrounds, libraries, communities. You meet new faces.

Female: It takes years to gain a network. We've been here in Durham just for this past year. We are just now getting into the community and making the friends and talking to them and playing with their kids and having play dates. Not leave my kid with them. I will go with them and have my kids with them so I can watch my own kids. It's not the same as if I was back home up in Pennsylvania. I know those people, I grew up with those people. It's going to take some time. It's going to take a couple of years to establish a network here now.

The participants also acknowledged the importance of existing community resources including individuals and agencies available to support parents and suggested that some community members may need encouragement or direct help to be linked with and benefit from these resources. In terms of community resources in addition to, except WIC, parents suggested that community health fairs, churches, parks and schools are good avenues for oral health promotion for this age group. 'Upstream' influences including family, community and health system factors are major determinants of the most proximal behaviors related to children's oral health ^{7,31}, and these suggestions have the potential to circumvent these social determinants. Along these lines, parents expressed their disappointment in the gradual demise of the public health dental hygienists and their role in the school systems, as the parents in our study had experienced as children. As of February 2016, the North Carolina Health and Human Services reported that their staff of public health dental hygienists serves 79 of 100 counties in the state.⁶¹

Female: Like she said, educate, encourage breastfeeding. If you need help. Or you need support, go seek it. Don't just give up on yourself or let it frustrate you. Seek help when you need it because it's a lot of help out there for moms that want to breastfeed.

Female: Make sure the mom is able to get the proper nutrient items available to her.

Female: *So I put them in touch with individuals or agencies that can help them get the nourishment that they may need.*

Participants voiced concerns regarding the high prices of “healthy” food items for their children and families; although assistance received via WIC is greatly appreciated, their purchasing power appears to be very limited. WIC generally provides the families dry food such as beans, rice, peanut butter, bread as well as 100% fruit juice, milk, eggs, tuna, and cheese. More recently, WIC has begun to give out “fresh food” vouchers; however, these are for only \$8 per month. This limits families to small amounts of fresh fruits and vegetables for their children.

Female: *What I like to see is that WIC, and agencies like WIC, lean more toward fresh foods. Like when my ... When she was pregnant, and when she was a newborn, we gave out more fresh food vouchers for the mother though. Then, as the child got older, they cut back on that. Then they pushed the food for her towards more pre-packaged vegetables, and if you look at it, the fresh fruit and fresh vegetables would benefit the child even more. So, keeping the same amount of those throughout the child's history with WIC would work.*

Female: *The obesity issues. The problems that we're seeing. The growing rates of type 2 diabetes in children, because it's cheaper to get juice. You know, they give us juice on WIC. They don't give us ... We get the voucher that we can use however we want for fresh fruits and vegetables, but 8 bucks...*

Some participants raised the issue that the contemporary performance-oriented school system does not play a major role in shaping or positively influencing children’s health. For other parents, school was still a source of positive oral health care.

Female: *Mine is where my daughter's in school. When she first started school, not here, but the other county we was in at, I believe it was kindergarten I want to say they did this, they had the dentist's and dental hygienists come to the school and talk to them about oral health problems. They actually sent a form home for the kids to have fluoride put on their teeth. I had that done.*

Other resources and promising community venues for obtaining information and peer support were health or dental fairs and playgrounds; the latter, however, entail risks.

Female: (...) I noticed that the playground is a good place to talk, but it's also a good place where kids get hurt. My daughter has chipped two teeth and a busted lip on the playground. Now, she's going to the dentist constantly to get that filling on those these that she has chipped from being on the playground.

The community maps (**Figure 2**) that were drawn at the end of this session summarized parents' conceptualization of their local community as it relates to their children's' oral health and included grocery stores, parks, schools, pharmacies, churches, and health care professionals including dentists. In viewing the maps it was evident that the participants really knew their community well did not necessarily "branch" outside of it for much of anything. Everything they needed was in their specific community.

V. DISCUSSION

This study among parents of young children who were clients of an urban WIC center in North Carolina provided informative insights into what parents themselves consider influential community agents and important strategies to promote young children's oral health. The parents expressed their views and experiences candidly, and offered several useful strategies that could be used in the context of oral health education. At the same time, our findings surfaced the real-life issues that hamper optimal oral hygiene and health care among this group of families, with financial and time constraints, access to care issues, and gaps in knowledge or misconceptions being the most prominent. Taken together, these findings offer a rich knowledge base that can be utilized for future studies, interventions, or community action programs.

All participants acknowledged the importance of their young children's oral health, but most admitted that circumstances may prevent them from actualizing their positive intentions. Generally, WIC is considered as an important vehicle for promoting young children's oral health, increasing families' oral health knowledge and access to care.⁴⁶ This notion is also reflected in a relatively recent qualitative study among low-income parents of young children,⁵⁶ who reported difficulty identifying sources of regular dental care.

The participants identified promising strategies and community resources available to improve young children's oral health and care. For example, modeling of oral hygiene behaviors with an older sibling is consistent with a "classic" recommendation of behavior modification for pediatric dental patients by Barenie and Ripa.⁵⁷

This study's findings should be regarded in view of its limitations. First, our sample was limited to one urban WIC center in North Carolina and was limited to English-speaking participants. Hispanic, other ethnicities, or rural families may have different experiences and views regarding their children's oral health and care. In spite of this, it is likely that several themes and issues identified here (for example financial constraints, cooperation among caregivers, and convenience) may be applicable to other communities. We conducted 5 group sessions and had 6 remaining participants at the last session.

Larger numbers (up to 14) of sessions have been recommended for Photovoice. In spite of this, we support that the combined numbers of sessions and participants allowed the investigation to reach a great depth and comprehensively cover the examined topic. Finally, Photovoice itself as a methodology entails shortcomings. Evans-Agnew and Rosemberg very recently conducted a critical review of Photovoice-based research and questioned the fidelity of transferring “participants’ voices” into the peer-reviewed literature. (Evans-Agnew).⁵⁸ With this in mind, we support that our study greatly benefits from providing insights into “real-life” experiences and community factors that influence children’s oral health, emerging from the participants themselves. Arguably, this type of participatory research tends to be more engaging for the study participants than typical questionnaire-based studies and this may have prompted the participating families to share experiences and identified issues and strategies that would be virtually impossible to obtain from a survey-type study.

Improving children’s, families’ and communities health (including oral health) obviously requires concerted efforts of multiple stakeholders; for this reason, measurable and sustainable improvements in children’s oral health will also require the integration of dental education with other health care and social disciplines.⁵⁹ Besides the engagement of the dental and allied health professions, future interventions aimed to improve children’s oral health must take into consideration the reality of families and the communities they live in, realizing that they are major influences of oral and general health promotion.

VI. CONCLUSION

Low-income parents of young children acknowledge the importance of early childhood oral health and understand that they have a pivotal role in determining their oral health trajectory. However, they are faced with daily life struggles that appear to interfere with optimal oral health and care for their young children. Financial constraints are pervasive, but parents themselves identified several mitigating strategies involving home care, planning and community agents that can be helpful. Future interventions aimed to improve children's oral health must take into consideration the role of families and the communities they live in, realizing that they are major influences of oral and general health promotion.

VII. TABLES

Table 1: Major emerging themes from the inductive analysis of the Photovoice sessions according to each of the 5 research questions

Research questions	Major emerging themes
What is good oral health for you and your children?	Avoidance of problems or costly restorations psychological distress pain and suffering esthetics Generally acknowledged importance and mentioned: cavities, trauma, esthetics, dental restorations Several misconceptions
Why children have oral health problems?	Financial constraints to get healthy food Lack of knowledge re: oral hygiene, fluoride toothpaste, community water, snacks and beverages, feeding practices, fluoride/toothpaste and pacifiers. Convenience Daily struggles of life (time constraints, disagreements between caregivers) Frustration/difficulty with oral hygiene
What prevents families from accessing available resources for children’s oral health?	Access to care issues -finances -time/schedules -location -insurance Families prioritize medical over dental care
What are important behaviors/ how can you prevent disease?	Oral hygiene, fluoride exposure Healthy diet (beverages, snacks, drink water), feeding patterns Going to the dentist Rules/routines and commitment Modeling older siblings or parents Cooperation among caregivers
What are important family & community resources (support/ assistance)?	Community programs (e.g., WIC) and public insurance –Friends, family and social circle Community-based organizations (e.g., churches, community centers, libraries) Schools Healthcare providers beyond dentists (e.g., nutritionists, nurses, pediatricians) Publicly available high-quality information (e.g., WebMD) Information dissemination via community and social hubs such as playgrounds, grocery stores & social media

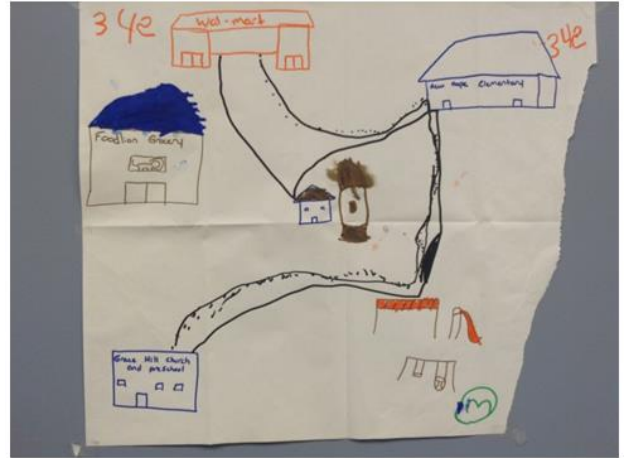
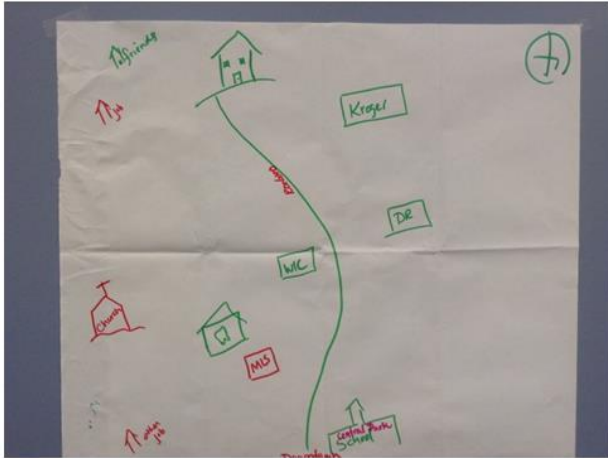
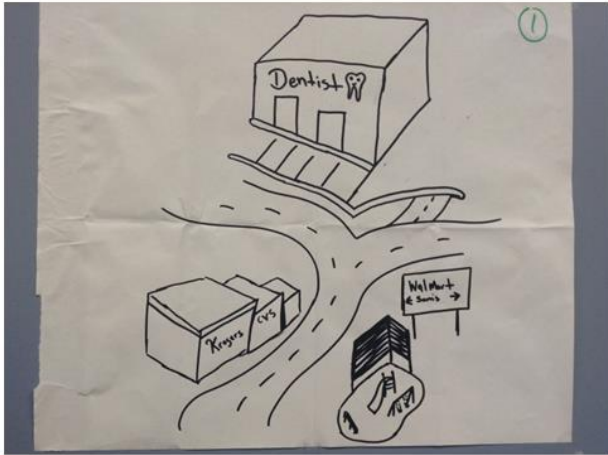
VIII. FIGURES

Figure 1. Photographs obtained by the study participants



Figure 2. Community maps created by the study participants

Community Maps



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