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I, Heather Strong, hereby submit this original work as part of the requirements for the degree of Master of Arts in Psychology.

It is entitled:
Examining Health Behaviors in Urban Preschool Age Children

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Examining Health Behaviors in Urban Preschool Age Children

A thesis submitted to the
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Committee Chair: Monica Mitchell, Ph.D.
Committee Members: Farrah Jacquez, Ph.D. & Bridgette Peteet, Ph.D.
According to the National Health and Nutrition Survey (NHANES; 2009-2010), approximately one in three children are overweight or obese, including 23% of preschool age children (i.e., 2-5 year olds; Ogden, Carroll, Kit, & Flegal, 2014). Emerging literature highlights that the preschool age period is a critical time for establishing healthy behaviors and preventing obesity (Baidal, & Taveras, 2012). There are several child-related contributors to obesity, such as, child consumption and physical activity behaviors (Polacsek et al., 2009). Researchers have also identified parent-related contributors to obesity, parental modeling, reinforcing feeding practices, and foods provided in the home (Haire-Joshu et al., 2008). In addition to these risks, preschool age children from urban environments are often at increased risk for obesity due to environmental barriers, including limited access to healthy food options and low neighborhood safety (Biro & Wien, 2010).

The overall aim of this study was to use focus groups and questionnaire data to examine parental perception of (1a) the current state of obesity and health behaviors in urban preschoolers (1b) critical child, parent, and environmental barriers related to obesity and healthy lifestyles; and (1c) what is needed to design and optimize effective healthy lifestyle and obesity interventions and programs.

Three focus groups were conducted with parents of preschool age children (2-5 years) from urban neighborhoods. Discussion topics included: parents' perspective of barriers and facilitators to health behaviors and obesity, and suggestions on the necessary components of an effective intervention for urban preschool age children. Participants also completed supplemental quantitative measures. The Focus Group Survey examined specific risks for unhealthy lifestyles and considerations for interventions. The Child Health Behavior Survey measured child health
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behaviors. Qualitative data was analyzed using evidence-based methods, organizing responses into broad conceptual categories. Descriptive analysis was used to examine quantitative data.

Some of the themes that emerged across groups indicated that parents were not concerned about obesity among urban preschool age children. While there are child-related barriers to healthy lifestyles, results suggest that parental and environmental contributors are most impactful. Discussion also indicated that interventions should focus on health education for parents and their preschool age children. Data from the supplemental quantitative measures indicated that many urban children are not meeting consumption and physical activity recommendations (Polacsek et al., 2009). Survey data also suggested that the most challenging barriers are related to economic status and the urban environment. This study illustrates the importance of understanding child, parent, and environment contextual barriers should be considered in context in order to develop effective obesity prevention and intervention.
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The Child Obesity Epidemic and Contributing Factors

Over the past three decades, obesity rates have more than doubled, being deemed an epidemic by the United States (U.S.) Surgeon General (Novak & Brownell, 2012; Wang & Beydoun, 2007). National statistics indicate that the epidemic of obesity is not only prevalent among adults, but also among children of all ages. Examination of the 2011-2012 National Health and Nutrition Survey (NHANES) prevalence rates estimate that approximately 23% of 2-5-year-olds; 34% of 6-11-year-olds; and 35% of 12-19-year-olds are overweight or obese (Ogden, Carroll, Kit, & Flegal, 2014). Not only can childhood obesity lead to health risks later in life, but it can also contribute to negative health consequences in childhood. Overweight and obese children are at risk for pre-diabetes, bone and joint complications, nutritional deficiencies, hypertension, accelerated puberty, and psycho-social problems (Han, Lawlor, & Kimm, 2010).

Research demonstrates that child health behaviors related to poor diet, limited physical activity, and excessive screen time are major contributors to obesity (Han et al., 2010). Literature also suggests that these health behaviors are often influenced by socio-environmental factors such as, parental modeling and feeding practices, socioeconomic status, limited access to healthy foods, and neighborhood design (Saelens et al., 2012; Shrewsbury & Wardle, 2008; Skouteris, McCabe, Swinburn, Newgreen, Sacher, & Chadwick, 2011). Because the factors associated with childhood obesity are complex, it is important to identify and target the high impact factors that contribute to unhealthy behaviors and obesity in order to improve child health outcomes.
Preschool Age as a Critical Period for Developing Health Behaviors

Researchers have highlighted the preschool age as a critical window for developing and establishing health behaviors that last later in life, including fruit and vegetable intake and physical activity (Baidal & Taveras, 2012). Early childhood development is characterized by rapid neurological and psychological development, as well as the emergence of taste preferences (Birch & Anzman-Frasca, 2011). During this time, exposure to healthy foods can facilitate a learned preference for, as well as an increased interest in healthy foods (Anzman-Frasca, Savage, Marini, Fisher, & Birch, 2012). Research suggests that preschool age children also have a high level of brain plasticity during this developmental period, making their emerging food preferences more vulnerable to external influences, such as parental consumption, and intake-promoting and coercive feeding practices of parents (Birch & Anzman-Frasca, 2011; Haire-Joshu et al., 2008). Epidemiological studies also suggest that a child’s food selections are also influenced by their physical environment, by factors such as neighborhood availability of fresh produce and the concentration of fast-food restaurants in the neighborhood (Black & Macinko, 2008; Gordon et al., 2011; Kipke et al., 2007).

Given the critical window of health behavior development during the preschool years, best practices documents that encouraging healthy lifestyles and intervening on unhealthy behaviors at this age in order to help establish positive, long-term health behaviors (Skouteris et al., 2011). Research further supports this concept by providing evidence that preschool age children who make healthy food selections and are physically active are likely to practice healthy behaviors as they age and maintain a reduced risk for obesity (Biro & Wien, 2010; Haire-Joshu et al., 2008; Ogden et al., 2014).
Parental Influence on the Development of Health Behaviors in Preschool Age Children

During the critical preschool age period, the family context is particularly influential in the development of health behaviors. Specifically, preschool age children are more likely to have a healthy diet and try new foods if their parent models healthy eating (Haire-Joshu et al., 2008). Haire-Joshu et al. (2008) conducted a randomized clinical trial targeting parents of young children, which produced significant results indicating that as parents increased their consumption of fruit/vegetable servings by one, their child’s consumption increased by .50. Literature also shows that a child’s food preferences and selection of healthy foods is influenced by the types of foods made available in the home (Clark, Goyder, Bissell, Blank, & Peters, 2007; Skouteris et al., 2011). This places preschool age children at a particular disadvantage, given their parents and caregivers hold the primary responsibility in the selection of household food items. Because it can be challenging to reinforce healthy eating in preschool age children, it is not uncommon in western culture for parents to use reward/punishment techniques to encourage healthy eating. However, research on parental feeding practices, suggests that using food as reward/punishment (e.g., you can have dessert if you eat your vegetables) or using food in conjunction with other rewards/punishments (e.g. go to your room, no TV, and no dessert) may increase a child’s risk for obesity and unhealthy eating later in life (Clark et al., 2007; Haire-Joshu et al., 2008). Considering these factors, parental influence on unhealthy behaviors may be reasonably preventable and modifiable.

Risk Factors Associated with Negative Health Behaviors in an Urban Environment

Environmental factors that may shape the family context are also important to consider. Research documents that children who live in urban neighborhoods are at increased risk for obesity due to characteristics of the built environment. Urban neighborhoods often do not support outdoor physical activity due to a lack of green space, neighborhood safety, and limited
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walkability; all of which can hinder participation in the recommended amount of physical activity (Ogden, Lamb, Carroll, & Flegal, 2010; Saelens et al., 2012). Often times, the urban environment also does not support the selection of healthy food options; with limited access to grocery stores and fresh food markets, and a high concentration of fast food restaurants (Maziak, Ward, & Stockton, 2008; Wang & Beydoun, 2007). In addition to the convenience and availability of fast food, the perception of fast food’s decreased economic burden, compared to healthy food options, may further reinforce unhealthy eating for urban families (Campbell et al., 2007). Of note, over the past 30 years, the price of healthy foods (e.g., fruits and vegetables) has increased at more than twice the price per calorie, compared to unhealthy foods (e.g., sweets and carbonated beverages); potentially hindering and making it difficult for low-income, urban households to purchase healthy food options (Novak & Brownell, 2012). Considering the unique obesity risks related to urban environment addressing these environmental barriers in the context of the urban environment is critical for further examining and improving health behaviors of urban preschool age children and their parents.

Research Examining Obesity in Urban Children

Research on obesity risks in children demonstrates a clear disparity for children living in urban environments relative to suburban communities. A study observing obesity rates and consumption behaviors and in preschool age children attending preschool programs in urban neighborhoods found that 25% of sample children were obese, rates higher than the national average (≥ 95 percentile; Treviño et al., 2014). Study results also showed that sample urban preschool children were also not consuming the minimum dietary recommendations outlined by the U.S. Department of Agriculture. This study is consistent with other studies indicating that low income and urban children had higher rates of obesity or obesity-related lifestyle behaviors
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(low physical activity, etc.) compared to their non-urban peers or normative samples (Brogan, Danford, Yeh, & Jen, 2014; Burdette & Whitaker, 2005; Whitaker, & Orzol, 2006).

In another study examining physical activity behaviors, Taylor et al. (2014) demonstrated in a sample of 911 urban children (5-15 years) that neighborhood accessibility of physical activity promoting resources (recreational centers, sidewalks, bike lanes) was negatively correlated with obesity status. Another study of children from schools in urban neighborhood (kindergarten-8th grade) suggested that 46% of children engage in > 2 hours of screen time during school week and 50% engage in >2 hours on weekends (Kottyan, Kottyan, Edwards, & Unaka, 2014). In the same study, parents report that the top three barriers to physical activity for their children are neighborhood safety, limited organized sports/physical activities in their neighborhood, and cost of participating in organized activities, respectively. While studies such as these have helped to quantify the disparity of obesity risks and barriers to healthy lifestyles experienced by urban children, obesity research specifically targeting urban preschool age children is often lacking relative to school-age samples (Anderson & Whitaker, 2009; Centers for Disease Control and Prevention [CDC], 2013).

In order to address the heightened risks experienced by urban preschool age children, research suggests that engaging parents in obesity topics in order to better understand contributors to obesity is important in order to inform the development of culturally relevant interventions (Gittelmann, & Pomerantz, 2011; McGarvey, Collie, Fraser, Shufflebarger, Lloyd, & Norman Oliver, 2006). Some studies have focused on parental perceptions of obesity and health behaviors in preschool age children from low income neighborhoods; however, the literature has indicated that more research is needed to inform the development of future
interventions that can successfully address the challenges of urban communities (Irigoyen, Glassman, Chen, & Findley, 2008; Kumanyika, & Grier, 2006).

**Review of a Local Urban Preschool Sample**

To understand the nature of obesity and health behaviors in local urban children, the research team of the current study conducted a preliminary review of an unpublished dataset of local, public records. In 2011, data was collected on 229 preschool children (3-5 years-old) from 23 public preschool programs, located in local, urban communities. This database included date of birth, gender, height, weight, and parent reported average daily consumption and physical activity behaviors for each child. We calculated body mass index (BMI; weight (kg)/(height (m)^2)) and BMI for-age-percentiles based on the Centers for Disease Control (CDC) and Prevention growth charts (Krebs et al., 2007). BMI for-age-percentile categories are defined by the CDC as follows: underweight, < 5th percentile; normal weight, ≥ 5th percentile to < 85th percentile; overweight, ≥ 85th percentile to < 95th percentile; and obese, ≥ 95th percentile.

Forty-six percent (46%) of the sample of urban preschool children were overweight/obese, compared to national estimates of 23% of preschool age children being considered overweight/obese (Ogden et al., 2014). In regard to physical activity behaviors, 61% were reported to engage in < 60 minutes of physical activity and 34% engage in ≥ 2 hours of screen time (television, videos, computer use, and video games). Parental report of consumption behaviors suggested that local, urban preschool children consume an average of three to four servings of fruits and vegetables, two servings of sugar-sweetened beverages (excluding 100% juice), and one serving of a soft drink/soda pop each day.

These findings suggest that many local preschool age children from urban neighborhoods are not meeting the daily recommendations of consuming five or more fruits/vegetables, zero
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artificially sweetened drinks, and ≥ 60 minutes of physical activity, and < 2 hours of screen time, as outlined by the evidence-based 5210 model (Polacsek et al., 2009). This recent data also supports that at least at the local level, urban preschool age children continue to experience challenges related to establishing healthy lifestyles that have not fully been addressed despite our knowledge of obesity-related risk factors related to the urban environment. As such, this data along with current literature suggests that there may be additional opportunities for researchers to not only expand on current knowledge of obesity risks, but also continue to explore how to appropriately address the obesity epidemic in the urban community.

**Study Rationale and Aims**

There is a considerable body of literature on the known risks for obesity experienced by children and previous intervention efforts to address such risks. Several studies estimate that more than 20% of preschool age children are overweight/obesity, although some recent literature suggests rates may be declining (Cunningham, Kramer, & Narayan, 2014; Ogden, Carroll, Kit, & Flegal, 2012; Ogden et al., 2014). Despite the growing body of research, obesity remains a major health concern (Ogden, Carroll, Kit, & Flegal, 2012). Given the risks of obesity associated with childhood, research on obesity and health behaviors specifically of preschool age children living in urban neighborhoods remains limited (CDC, 2013; Cunningham, Kramer, & Narayan, 2014).

While some studies have tried to fill the gap in the literature on urban preschool children, data is often derived from children living in urbanized cities, which does not exclude suburban neighborhoods, or samples are obtained from the databases of federal assistance programs (e.g., Women, Infant and Children’s Program [WIC]; Brogan et al., 2014; Burdette & Whitaker, 2005; Fisher et al., 2015; Whitaker, & Orzol, 2006). While such data sources are likely to be largely
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comprised of children from urban neighborhoods, by not actively targeting only urban children, it is possible that there are risks that are being overlooked.

Despite the known risk factors of health behaviors that lead to obesity present for urban preschool age children, researchers, clinicians, and policy makers have found it difficult to translate evidence-based research into effective behavioral change (Gortmaker et al., 2011; Monasta et al., 2010). Although, literature has outlined considerations for effective preschool age interventions, there has not been a consensus in the literature on necessary components of an obesity intervention that would ensure successful clinical outcomes (Osei-Assibey et al., 2012; Stice, Shaw, & Marti, 2006).

This study will add to literature by helping researchers better understand how parents conceptualize obesity and its risks, as well as, the parental perspective on how to address such risks. This study is unique in that is will provide both quantitative and qualitative data on consumption and physical activity behaviors of urban preschool age children, multi-system level (child, parent, environment) barriers to healthy lifestyles, as well as, parental perceptions on the necessary components of a successful intervention. The current study will address noted gaps in the literature by (1) adding to the limited literature on preschool age children specifically identified as being from an urban neighborhood; (2) providing additional quantitative and qualitative data on parent perceptions of multi-system level barriers and facilitators to health behaviors and obesity; (3) understanding parent perceptions of what is needed to design and implement healthy lifestyle programs for preschool age children and families in urban communities. For purposes of this study, the U.S. Census definition of “urban” is used, more specifically, neighborhoods located in the inner-city are referred to as “urban” in this paper (Hall, Kaufman, & Ricketts, 2006).
The overall aim of this study was to use focus groups and questionnaire data to examine parental perception of (1a) the current state of obesity and health behaviors in urban preschoolers (1b) critical child, parent, and environmental barriers related to obesity and healthy lifestyles; and (1c) what is needed to design and optimize effective healthy lifestyle and obesity interventions and programs. In carrying out this study, parent participants were conceptualized as expert community collaborators and consultants, similar to a community-based participatory research design (Bogart, & Uyeda, 2009). By approaching parents as experts, we used an exploratory framework in order to allow for the possible emergence of obesity-related risks and intervention needs in urban preschool age children that may have lacked extensive research previously.

**Method**

Focus group participants were recruited through local community sites (i.e., local public schools; community parent groups). Participants included adult parents/caregivers (18 years or older) of a preschool age child (2-5 years-old). Participants also had to live in an urban community as defined by the census or have a preschool age child attending a school located in an urban community.

Three focus groups (n= 43) were conducted separately at three public schools located in an urban community. In addition to qualitative discussion data, participants also completed written measures to further characterize the sample. Prior to the start of each focus group discussion, participants completed the Child Health Behavior Survey adapted from an unpublished measure (Bolling), which measures eating behaviors, physical activity and screen time behaviors. Participants also completed the demographic section of the Focus Group Survey.
After focus group discussion, participants completed the remainder of the Focus Group Survey, providing supplemental data on their perspectives on discussion topics.

Focus groups were conducted in the Krueger (1997a; 2009) format, including facilitating an introduction describing the purpose of focus group, the goals of the study, the purpose of audio and video taping and guiding principles for the group (e.g., that it is alright to agree or disagree, to speak loudly and clearly, to give everyone a chance to talk, that discussion may be redirected or tabled if it gets off-topic, etc.). All focus groups were conducted by the same moderator, who is experienced in focus group facilitation utilizing the Krueger methodology. According to the Krueger (1997a; 2009) method, focus group discussions were moderated using a protocol/script which included the oral focus group discussion questions. Oral focus group discussion questions included an opening question, followed by introductory, key, ending, and final questions (see Appendix A; Krueger, 1997a).

Following the group introduction as outlined by the protocol/script, the moderator shared preliminary findings from an unpublished dataset of local health data on 229 urban preschool children. This data summary included basic demographics (i.e., age, race, gender, neighborhood represented), frequencies of parent reported health behaviors, and rates of BMI for-age-percentile categories for the sample. Participants were advised that presented data represented preliminary findings from a local sample and data was analyzed by researchers of the current study. After this data summary was reviewed with participants, follow-up discussion centered on parental perceptions of the representative nature of the secondary data results (e.g., what surprises you about this data; how accurate do you think this data is). Discussion topics then focused on parental perception of nutrition and weight of urban preschool age children; as well as contextual contributors related to the preschool age period, parental role, and the urban
environment which might have impacted the findings of the secondary data. In order to maintain the exploratory nature of and minimize possible bias inserted by the moderator, participants were first broadly asked about health behaviors and obesity (e.g., what things make it difficult [or easy] to get a preschool age child in your community to eat healthy foods). If necessary based on the direction of the discussion, the moderator later followed up with a prompt or specific question to draw out more information (e.g., what role do parents play). Later discussion examined on parental knowledge of community resources or programs related to encouraging positive child health behaviors (e.g., what has your child’s school done to promote a healthy diet and/or physical activity in your child) and recommendations on components of an effective health intervention for preschool aged children living in urban environments (e.g., what can researchers/doctors/schools do to help preschool children in your community to be physically active).

At each focus group, a member of the research team was present throughout discussions to take notes on group interactions and to summarize group responses, if needed for later reference during data analysis. Participants were provided with lunch and received $50 pre-paid debit card as compensation for their time and travel. All portions of this study were approved by the Institutional Review Board affiliated with the principal investigator.

Measures. In addition to the oral group discussion questions outlined in the focus group script/protocol, two supplemental surveys were also completed by participants. The oral discussion questions and supplemental surveys were designed based on a review of the literature in order to measure health behaviors, and the known risks for unhealthy behaviors and obesity among children. The addition of the written measures was intended to further characterize the
focus group sample by providing specific data on child health behaviors and supplemental quantitative data directly related to discussion topics.

*Oral Focus Group Discussion Questions* outlined in the focus group protocol/script were developed around the study aims and refined through a series of meetings with the research team (Krueger, 1997b). Questions were drafted and included based on their fit with the goals of the study (e.g., health behaviors of their preschool age children, perception of community barriers). The research team then met with experts on local community-based focus groups and research to refine and adapt questions to ensure relevance and cultural appropriateness. In following standard focus group methodology, all oral focus group discussion questions were open-ended (Krueger, 1997b).

The *Focus Group Survey* was developed simultaneously with the oral focus group discussion questions in the focus group protocol/script, undergoing the same process of drafting and refining questions. The Focus Group Survey was presented in booklet format and included questions on demographics such as, age, gender, and income. This survey also included a combination of open-ended, closed-ended, and Likert scale questions related to focus group topics. The addition of this survey was intended to provide more robust data directly aligned with the oral focus group discussion questions and also to capture relevant data from participants who might be less active in the discussion (see Appendix B).

The *Child Health Behavior Survey* was adapted from a measure used to capture parental report of their child’s daily health behaviors (Bolling, unpublished; see Appendix C). This measure was developed to align with the 5-2-1-0 healthy behaviors model and it’s four emphasized areas of risk; fruit and vegetable consumption, screen time, physical activity, and sweetened drinks (Polacsek et al., 2009). This measure captures average daily consumption rates.
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(e.g., 1 cup, 2 cups, 3 cups, etc.) of fruits, vegetables, sugar sweetened beverages (excluding 100% juice), and soft drink/soda pop. This measure also captures parent’s report of daily average of time their child spends being physically active (< 15 minutes to ≥ 60 minutes) and engaging in screen time activities (television, videos, computer use, video games; (< 1 hour to ≥ 4 hours).

Data Analysis

In accordance with Krueger’s standard focus group analysis method, community focus group data were transcribed by a member of the research team (Krueger, 1997c). Data was coded using a three-coder system; coders were trained by the focus group moderator on coding methodology outlined in Krueger’s manual (1997c). Transcriptions for each focus group were then organized into major and minor themes by the three coders. Coders then met to review and compare themes within each focus group and established overall consensus ratings for consistency and reliability. Then coders followed the same procedure to establish consensus themes present across all three focus groups. Themes that were present in all three focus groups were considered to be major themes. Quantitative written measures administered during the focus group were summarized using descriptive statistics.

Results

Participants

Forty-three parents/caregivers of preschool age children participated across three focus groups. Thirty-six (84 %) of parent/caregivers were female (32 mothers, 4 grandmothers/aunts) and seven (16 %) were male and all identified their relationship to the child as father/step-father. Parent/caregiver reported highest level of education was summarized as follows: 21% had not completed high school; 72% had a high school diploma; and 7% had a bachelor’s degree. Self-reported employment status indicated that 52% of parents/caregivers were unemployed; and 68%
had an annual household income of less than $10,500. Of the 43 children (41% male) represented, ages ranged from 2 years-old to 5 years-old, with a mean age of 3.67 years. Parent/Caregiver report identified the majority (91%) of children as African-American; additional demographic and household characteristics are summarized in Table 1.

Table 1

*Demographics and Household Characteristics for Children Represented in Focus Groups*

<table>
<thead>
<tr>
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<th>%</th>
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<tbody>
<tr>
<td><strong>Child's Gender</strong></td>
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<tr>
<td>Male</td>
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<td>41</td>
</tr>
<tr>
<td><strong>Child's Race/Ethnicity</strong></td>
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<td></td>
</tr>
<tr>
<td>African-American</td>
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<td>91</td>
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<tr>
<td>Hispanic/Latino</td>
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<td>2</td>
</tr>
<tr>
<td>Multi-Racial</td>
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<td>2</td>
</tr>
<tr>
<td><strong>Parental Employment</strong></td>
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<td>Unemployed</td>
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<td>Student</td>
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<td>Employed, Part-Time</td>
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<td>Employed, Full-Time</td>
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<tr>
<td><strong>Annual Household Income</strong></td>
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<td>&lt; $10,500</td>
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<td><strong>Average Number of Adults in the Home</strong></td>
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</tr>
<tr>
<td><strong>Average Number of Children in the Home</strong></td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
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Themes on Obesity and Health Behaviors of Urban Preschool Children

Qualitative analysis produced several consensus themes across all three groups. Themes were related to parental perception of obesity, as well as, child, parent, and urban environmental contributors to unhealthy behaviors and obesity in preschool age children. For an overview of obesity and health behavior qualitative themes, see Table 2. Data from the Child Health Behavior Survey and Focus Group Survey complemented qualitative data to provide a more comprehensive understanding of consumption and physical activity behaviors in the sample of urban preschool children. This supplemental survey data also provided additional quantitative data on barriers most often experienced (see Tables 3-5).

BMI-for-age-percentiles are inaccurate. After viewing the rates of overweight/obesity from the secondary dataset, urban parents did not agree with the rates of obesity because they doubt the accuracy of the BMI-for-age percentiles. Participants believed that in many cases, children in the urban community that are described as overweight or obese according to the BMI-for-age percentiles appear to be a healthy weight. One participant shared from her personal experience, “you can put her [participant’s daughter] on a scale, you can put her in front of the WIC lady and they [healthcare professionals] will say, she is 10 lbs. over our limit so you know, maybe you need to cut back…what do you consider obese, because I don’t consider that obese.” Another remarked, “their numbers, to me, don't fit every ethnicity, it shouldn't be the same, because everybody is built different.”

Child eating preferences. When considering the contributors to eating behaviors and obesity in preschool age children in urban communities, parents agreed that at times, a child’s eating preferences makes it difficult to get preschool age children to comply with consumption recommendations. Sometimes it is difficult to get preschool age children to eat healthy foods
because they are a “picky eater,” limiting themselves to specific unhealthy food selections, and/or unwilling to try certain fruits and vegetables. One mother remarked, “a lot of kids don’t like green foods... because it’s green.” Discussion indicated that parents observe the same barrier when trying to get preschool age children to drink fewer sugary drinks, “I try to limit it, try to give them water, but you know some kids don't drink water.”

Parents also reported that preschool age children often have difficulty adhering to recommended portion sizes because their appetite is difficult to satiate. “If your child likes to eat more on his weight level then he is going to eat like that. I can’t stop my child from eating [saying], you can’t have three hot dogs and hamburgers cause you will eat it all, I can’t.” One mother shared, “some of the kids still be hungry at lunch, because they are used to being able to have those big ol’ scoops [servings of food at home], I know I’m guilty.”

**Lack of balanced meals provided at home.** Despite a preschool age child’s eating preferences, participants strongly agreed that parents “play the biggest role.” Participants believed that one of the contributors to obesity rates and a preschool age child’s preference for unhealthy foods is because urban parents often do not prepare balanced meals at home, as they did in previous generations (“I think back in the day a lot of parents cooked at home;” “meals were balanced!”). Parents believed that now when parents prepare meals for their of preschool age children, it is often pre-packaged, processed foods that are not healthy. One parent stated, “I’m not trying to down parents because I am raising my kids in this generation too but, the dinners are different; we put our meals in the microwave, we didn’t get fed like that.”

**Perception of limited time to prepare healthier/balanced meals.** One reason urban parents do not always prepare healthier meals for their preschool age child is because they feel they don’t have time; and purchasing fast food or ready-to-eat meals is more convenient.
“Parents don’t have enough time working or whatever they are doing. You come home, you slap something in that microwave, time to lay down!” Parents reported that their lack of time is not only due to their schedules, but also the schedules and needs of their other children. “Now people [involved] in the church, [and] got kids playing in sports, so your day-to-day activity changes sometimes. So then fast food restaurants sometimes just come in on that.”

**Healthier foods are too expensive.** Participants also shared, that another reason children in urban neighborhoods become overweight or obese, and/or consume unhealthy foods, is parent’s perception of the economic burden associated with purchasing healthier food options. “I think it's a conspiracy. I can go to the store and I can get what's healthy for them, but it's a lot of my budget.” Another participant shared, “they say they want the kids to be healthy but the healthy foods cost so much. I mean for a lot of people if you’re already struggling you’re not gonna buy, what you can’t afford.” Although, participants noted that as a caregiver, parents are primarily responsible for a preschool age child’s consumption of unhealthy foods, urban parents feel limited by their finances. “I would rather my kids to have it [healthier snacks and 100% juice], but can I afford it?” One mother shared, “I think if they made it where it was within our budget and within our means, that it would be easier to feed our kids healthier instead of feeding them the junk food that you get a lot of.”

**Parental modeling determines health behaviors.** Participants also reported that parental modeling contributes to both positive and negative consumption and physical activity behaviors in preschool age children. Parents agreed that even if a preschool age child is provided with healthier food options, if their parent’s diet is unhealthy, the child’s diet will eventually become unhealthy. “I feel like the kid gonna eat what they mom feeds them, period, for the simple fact, that's what they mama gave them. But, if you eat different than your child, then your
Examining Health Behaviors in Urban Preschool Age Children

child is gonna like, what eat like you. Like me, I don't drink milk, but my daughter does, but it's different, if I don't drink milk, I'm not gonna really, suggest her to drink it.” Further discussion indicated that despite some urban parents having knowledge of how to eat healthier, it is difficult for parents to make changes and model positive eating behaviors because their diets reflect cultural practices. “Some people were raised up like that, so they get, that from their parents, and they continue.” “Another noted, “you’ve been eating a certain way for so long, so that’s a big step to try and switch over.”

While participants believed that preschool age children often do not need to be prompted to engage in physical activity indoors, similar to consumption behaviors, parents believe that preschool age children will not be consistently active if their parents are not; “with some cases it takes the parents to get up.” One mother who is usually active with her preschool age child shared, “there have been days in my house, where if I don’t get up and do something, we all are just laying around.” When reviewing the secondary data, participants remarked that rates of preschool children reported to engage in < 60 minutes of daily physical activity, reflect children of parents who do not model physical activity. One participant stated, “the activity part [of sample results] surprised me, I mean what are those parents doing, are they lazy?”

Limited access to healthier food options. Urban communities often do not have a grocery store/market, or only have one; as a result parents are not always able to conveniently access healthier food options. One parent bluntly stated, “we did have a grocery store out here, they took it away, so now where do we go? and for what, to put a [local clothing store] right there! We don’t need to shop we need to eat!” Another shared, “but go out further [in suburban neighborhoods], they got markets, they got that kind of stuff, we don’t got that.” Parents often have to travel to other communities to access a grocery store or market and for many, the
distance and lack of transportation are barriers to utilizing this resource; “if you don't have no transportation that makes it hard, especially if you got small kids that you gotta walk with.” Another parent stated, “I go, but you gotta catch the bus and it’s $5 and you know you can’t just go, like, let me just get an onion or bell pepper, imma run over here...you can’t do that!” Quantitative measures showed that 40% of participants reported that transportation to the grocery store/market is “sometimes” or “often” a challenge.

For urban communities that do have a grocery store/market, the variety of produce options are limited and the quality of produce is lacking. “I feel like sometimes they don’t have like the best of the best down here [in the urban neighborhood grocer] and that’s what makes me mad.” Others shared, “we got some produce, but they don’t put out the freshest of everything;” “I would say their fruits and vegetables are never fresh, you can’t buy it;” “Everything molded!”

**Lack of green space.** Parents agreed that the largest barriers to outdoor physical activity in preschool age children are characteristics of the urban environment. Specifically, the lack of residential green spaces and parks in urban communities makes it difficult for children to participate in physical activities; one participant described her community as, “ain’t nothing around here but apartments.” Both participants living in apartments, as well as those living in houses in urban neighborhoods described limited green space as a barrier to outdoor activity. Some shared, “our yard ain’t even that big and the side walk right there by the street;” “where I stay, it's not a lot of yard where they can run and then the back is parking.”

**Limited neighborhood safety.** Participants also felt that urban neighborhoods are usually not safe, which causes urban parents to limit their preschool age child’s outdoor activity. One participant shared about her residential street, “there's been a lot of like shootings and drug dealings outside and me, I'm not comfortable with letting my kids run around free.” Participants
also shared that while some urban neighborhoods do have a park, they are often “an open park, so anybody can come in;” and also not seen as safe. Parks in urban neighborhoods are often a social gathering place for teens and adults in the community; with some participants describing their local parks as, “a bunch of 40 ounces” and “a bunch of old people sitting around.” Parents expressed that they were uncomfortable with their preschool children playing in such an environment and concerned that they or their child may be harmed. “Somebody could be in the wrong place at the wrong time;” “It’s too much going on for them to play.”

Table 2.

Summary of Focus Group Consensus Themes on Health Behaviors and Obesity

<table>
<thead>
<tr>
<th>Perception of Obesity in Urban Preschool Age Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>o BMI-for-age percentiles inaccurately describe the weight of urban preschool age children</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Child Barriers to Recommended Healthy Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>o Eating preferences of preschool age children:</td>
</tr>
<tr>
<td>• Preference for less healthy foods and sugary drinks</td>
</tr>
<tr>
<td>• Appetite is only satisfied by larger portion sizes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parental Contributors to Unhealthy Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>o A lack of balanced meals prepared at home</td>
</tr>
<tr>
<td>o Parents feel they do not have time to prepare healthier/balanced meals</td>
</tr>
<tr>
<td>o Healthier foods are too expensive to purchase</td>
</tr>
<tr>
<td>o Parent modeling determines health behaviors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Barriers to Healthy Behaviors Related to the Urban Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>o Limited access to healthier foods</td>
</tr>
<tr>
<td>o Lack of green space</td>
</tr>
<tr>
<td>o Feeling unsafe limits physical activity outside</td>
</tr>
</tbody>
</table>
Supplemental Quantitative Data on Obesity and Health Behaviors

According to the Child Health Behavior Survey, data suggests that urban preschool age child are consuming an average of 2.21 cups (SD= 1.13) of vegetables and 2.95 cups (SD= 1.23) of fruits a day. Parents also reported that children consume 3.37 cups (SD= 1.43) cups of a sugar-sweetened beverage (excluding 100% juice) and 1.21 cups (SD=1.34) of soft drinks/soda each day. Fifty-one percent (51%) of parents reported that their child engages in the recommended $\geq$ 60 minutes of daily physical activity and 56% reported that their child engages in the recommended $\leq$ 2 hours of screen time. See Table 3 for a summary of the Child Health Behavior Survey data.
Table 3.

*Frequency of Daily Health Behaviors of Children Represented in Focus Groups*

<table>
<thead>
<tr>
<th>Category</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vegetables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 2 servings/day</td>
<td>26</td>
<td>(61)</td>
</tr>
<tr>
<td>3-4 servings/day</td>
<td>16</td>
<td>(37)</td>
</tr>
<tr>
<td>≥ 5 servings/day</td>
<td>1</td>
<td>(2 )</td>
</tr>
<tr>
<td><strong>Fruits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 2 servings/day</td>
<td>18</td>
<td>(42)</td>
</tr>
<tr>
<td>3-4 servings/day</td>
<td>19</td>
<td>(44)</td>
</tr>
<tr>
<td>≥ 5 servings/day</td>
<td>6</td>
<td>(14)</td>
</tr>
<tr>
<td><strong>Sugar-sweetened beverages</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 servings/day</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1 serving/day</td>
<td>4</td>
<td>(9 )</td>
</tr>
<tr>
<td>≥ 2 servings/day</td>
<td>39</td>
<td>(92)</td>
</tr>
<tr>
<td><strong>Soft drink/soda pop</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 servings/day</td>
<td>16</td>
<td>(37)</td>
</tr>
<tr>
<td>1 serving/day</td>
<td>13</td>
<td>(30)</td>
</tr>
<tr>
<td>≥ 2 servings/day</td>
<td>14</td>
<td>(33)</td>
</tr>
<tr>
<td><strong>Physical activity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 60 minutes</td>
<td>21</td>
<td>(49)</td>
</tr>
<tr>
<td>≥ 60 minutes</td>
<td>22</td>
<td>(51)</td>
</tr>
<tr>
<td><strong>Screen time</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 2 hours</td>
<td>24</td>
<td>(56)</td>
</tr>
<tr>
<td>&gt; 2 hours</td>
<td>19</td>
<td>(44)</td>
</tr>
</tbody>
</table>
When responding to the Focus Group Survey, when asked, *do you think your preschool age child is overweight or obese*, 93% of participants responded “no.” When asked to rate the level of concern regarding their preschool age child’s weight on a scale of 0, not at all concerned to 5, very much concerned, 70% of parents expressed little concern, responding with a 0 or 1. Regarding barriers to health eating, when asked, *how easy do you think it is for families in your community to purchase healthy foods for their children*, (scale of 0- very hard to 5- very easy) responses indicated that urban parents experience a moderate level of difficulty ($M = 3.2$, $SD = 1.6$). Parents also expressed that they experience challenges related to both parental and environmental barriers to healthy lifestyles in their child. Although, with the exception of parental ability to limit their child’s screen time, responses suggest that barriers related to the urban neighborhood present the most challenges (see Table 4).

Table 4.

*Endorsed Barriers to Healthy Consumption and Physical Activity in Preschool Age Children*

<table>
<thead>
<tr>
<th></th>
<th>$M (SD)$*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parental Contributors</strong></td>
<td></td>
</tr>
<tr>
<td>Concerning your child, how easy it for you to:</td>
<td></td>
</tr>
<tr>
<td>provide fresh fruit/vegetables</td>
<td>4.48 (1.01)</td>
</tr>
<tr>
<td>prepare dinners at home</td>
<td>4.45 (0.92)</td>
</tr>
<tr>
<td>eat family meals together</td>
<td>4.43 (0.89)</td>
</tr>
<tr>
<td>provide daily breakfast</td>
<td>4.16 (1.27)</td>
</tr>
<tr>
<td>limit TV and video games</td>
<td>3.40 (1.72)</td>
</tr>
<tr>
<td>get your child to be physically active for 60 minutes</td>
<td>4.54 (.79)</td>
</tr>
<tr>
<td><strong>Urban Environment Contributors</strong></td>
<td></td>
</tr>
<tr>
<td>In your community, how easy it to find:</td>
<td></td>
</tr>
<tr>
<td>the grocery store</td>
<td>3.77 (1.81)</td>
</tr>
<tr>
<td>a fresh food market</td>
<td>3.56 (1.86)</td>
</tr>
<tr>
<td>safe places to play</td>
<td>3.37 (1.76)</td>
</tr>
<tr>
<td>recreation programs for preschool age children</td>
<td>3.84 (1.56)</td>
</tr>
<tr>
<td>green spaces/parks</td>
<td>3.81 (1.58)</td>
</tr>
</tbody>
</table>

* Ratings on a scale of 0- “very hard” to 5- “very easy”
Examining Health Behaviors in Urban Preschool Age Children

Also on the focus group survey, parents were asked to rate how often certain known barriers (e.g., child eating preferences, not enough time to prepare food, limited parks, needs of other children) impact their ability to get their preschool age child to eat healthy foods and be physically active. Responses indicate that economic challenges are most often experienced as barriers to their child’s healthy consumption behaviors. Fifty-four percent (54%) of participants reported that having limited income is a barrier when it comes to providing healthy foods, and 39% of parents endorsed transportation to a grocery as a barrier. Additionally, 30% of parents reported that the eating preference of their preschool age child makes encouraging healthy consumption difficult. In regard to physical activity barriers, 42% of the sample reported that their work schedule is a barrier to their child being more physically active. Additionally, 37% of parents endorsed that both lack of transportation and limited community parks are barriers to their child engaging in physical activities (see Table 5).

Table 5.

*Top Barriers to Healthy Lifestyles in Preschool Age Children*

<table>
<thead>
<tr>
<th>Barriers to child healthy consumption behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. limited money for healthy foods</td>
</tr>
<tr>
<td>2. transportation to grocery stores</td>
</tr>
<tr>
<td>3. child's food preferences</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Barriers to child physical activity behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. parental work schedule</td>
</tr>
<tr>
<td>2. transportation</td>
</tr>
<tr>
<td>3. limited parks</td>
</tr>
</tbody>
</table>

Considerations for Future Effective Intervention

The second half of group discussion focused on parental perceptions of intervention development. Parents provided insights on community resources available, suggestions on addressing barriers to program participation, and insights on necessary components of an
intervention that would be effective in urban preschool age children. Participants reported that there are few resources and programs that promote positive health behaviors available to preschool age children in urban communities. Focus group discussion suggested that urban parents most often receive information and/or resources ("pamphlets", "referral") from the pediatrician, which usually only focuses on healthy consumption in their preschool age child. Although, participants indicated that information provided by the clinician is usually not appropriate, and needs to consider the barriers experienced by urban preschool age children (e.g., child eating preferences, cost of healthy food options, access to fruit and vegetables).

Parents also shared that some local urban schools and communities periodically offer free-to-the-public activities for children of all ages that encourage physical activity; such as, "Zumba" dance classes, "open" gym time on Saturdays, and facilitator led exercise groups in the park. While these programs are conveniently located and present minimal economic burden, they are not as widely utilized as they could be. Parents suggested that when organizing community-based programs, in order to increase participation and have a wider impact on the urban community, recruitment needs to expand beyond just parents participating in support groups and children enrolled in a preschool program. Consensus themes regarding parental insights on suggested components of an effective intervention are summarized in Table 6.

**Health education is needed.** Participants believed an effective intervention designed for preschool age children in urban communities would involve both the parent and child; and would utilize a multimodal approach to providing education on health behaviors. Participants felt that it would be important to provide children with education that encourages positive health behaviors that is engaging, interactive, and developmentally appropriate; such as "some type of game;" "sing a song [about fruits and vegetables] as we trying to get them to eat fruits and vegetables."
Parents also agreed that developing an educational website or cell phone/tablet for preschool age children; “so they can just play on their phone because the kids going to play on their phone anyway.” Participants shared that such as website or application should include education on healthy eating, physical activity, and include developmentally appropriate exercise videos.

Participants reported that an effective intervention would also provide parents with education on healthy eating and physical activity for their child; as well as education to improve parents’ health behaviors. Participants shared that education provided to parents should include information on how to buy healthy foods on a limited income and budgeting, how to read nutrition labels (“I don’t know what half of that stuff [nutrition labels] means, I ain’t gonna lie”), and healthy cooking methods. “You think you cooking healthy, but if you break it down, using a different oils that you cook with, it's a big difference between that and I'm pretty sure a lot of people don't know the difference.”

Focus group participants also highlighted that including an application/hands-on learning component for parents and children would be important to further engage children and encourage healthy behaviors. Participants suggested activities such as, “open” gym with free playtime, dance classes, cooking classes, and community gardening; “have the kids actually help plant the stuff they would probably be like, I help grow it so I’m going to eat it.” Participants also felt this would encourage parental modeling and positive parent-child interactions. See Table 6 for a summary of consensus themes on necessary components of an effective intervention.
Table 6

Summary of Focus Group Consensus Themes on Components of an Effective Intervention

- Health education is needed for preschool age children and their parents
  - Children's education should be engaging, interactive, and developmentally appropriate (e.g., games, songs, cell phone/tablet applications)
  - Parental education should focus on the parents' health behaviors, as well as their child's health behaviors
  - Parent and child should have opportunities to participate in application/hands-on learning activities together (e.g., dance classes, gardening)

Supplemental Quantitative Data on Considerations for Future Effective Intervention

Participants also completed portions of the Focus Group Survey to provide quantitative data further describing the needs of urban families. In response to the survey question, *do you ever feel you need more information about how to help your preschool age child eat more healthy,* 52% of parents reported “sometimes” or “often” needing more information. When asked a similar question about physical activity, 48% of parents reported that they “sometimes” or “often” feel they need more information. Data was also collected to examine if parents might find specific program components helpful and were asked to rate the level of helpfulness (scale of 0, “not at all helpful” to 5, “very helpful”); results are summarized in Table 7.
Examining Health Behaviors in Urban Preschool Age Children

Table 7

*Level of Helpfulness of Specific Program Components*

<table>
<thead>
<tr>
<th>Program Component</th>
<th>M (SD)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suggested meal guide</td>
<td>3.33 (1.90)</td>
</tr>
<tr>
<td>Recipes/Quick meal tips</td>
<td>3.90 (1.45)</td>
</tr>
<tr>
<td>Cooking Classes</td>
<td>2.42 (1.87)</td>
</tr>
<tr>
<td>Taste tests for kids</td>
<td>3.61 (1.66)</td>
</tr>
<tr>
<td>Healthy eating on a budget</td>
<td>4.00 (1.47)</td>
</tr>
<tr>
<td>Exercises for children</td>
<td>4.14 (1.34)</td>
</tr>
<tr>
<td>Tips on how to be active indoors</td>
<td>4.10 (1.50)</td>
</tr>
<tr>
<td>Info on local physical activity programs for children</td>
<td>4.05 (1.60)</td>
</tr>
</tbody>
</table>

*M Ratings on a scale of 0-“not at all helpful” to 5-“very helpful”*

Discussion

The purpose of this study was to use focus groups and questionnaire data to examine parental perception of obesity and health behaviors in urban preschoolers and the related child, parent, and environmental contributors. This study also intended to examine parental perceptions of what is needed to design and optimize effective healthy lifestyle and obesity interventions and programs. Despite the fact that data shared with participants suggested that local urban preschool children have an overweight/obesity rate of 46%, parents of in this study did not express concern about obesity or related health behaviors in preschool children. There might be a number of explanations for this finding. Parents may consider that BMI-for-age-percentiles do not consider genetic differences and that data that categorizes children as overweight or obese is an inaccurate description of their weight, an assumption that is supported by some studies (Hughes, Sherman, & Whitaker, 2010; Kumanyika, 2008). This would be consistent with studies finding that parents often underestimate the weight of their children who are overweight or obese (Rietmeijer-Mentink, Paulis, Middelkoop, Bindels, & Wouden, 2013; West et al., 2008). The presence of
Examining Health Behaviors in Urban Preschool Age Children

these findings in a local sample of urban parents may also represent a cultural acceptance of obesity among the local urban population where “norms” may be different than those that are defined by the CDC (Sullivan, Leite, Shaffer, Birch, & Paul, 2011; Tschamler, Conn, Cook, & Halterman, 2009). Further, a bias towards obesity may be a reflection of cultural norms, in which case clinicians might benefit from better understanding the cultural context of parent perceptions in order to be more effective in obesity prevention and intervention efforts. Additionally, because urban parents do not perceive obesity as a major concern among their preschool age children, this may also present a barrier to urban parents promoting healthy lifestyles in their children, as well as engaging in interventions when needed.

Focus group discussion also indicated that urban parents were not particularly concerned about their preschool age child’s level of physical activity. Although, when parents were asked to quantify their child’s level of physical activity, survey responses suggest that almost half of children are not meeting the recommendations for ≥ 60 minutes of daily physical activity or limiting screen time activities to < 2 hours (Polacsek et al., 2009). Survey responses suggest that more urban preschool age children engage in > 2 hours of screen time compared to national estimates of same age children (Sisson et al., 2009). These findings are particularly notable given literature that provides evidence that a higher frequency of screen time is associated with lower levels of physical activity, both of which are associated with a higher risk for obesity (Biro & Wien, 2010; Han et al., 2010). Discussion indicated that while urban parents did not express concern about their child’s level of physical activity, parents were concerned about the consumption behaviors of urban preschool age children. Quantitative results suggest that urban preschool age children are not meeting recommendations for consumption of fruits and vegetables (Treviño et al., 2014). Additionally, data suggests that urban preschool age children
consume more sugar-sweetened beverages than most preschool age children, based on national estimates of a daily consumption average of 12.05 ounces (Lorson et al., 2009).

These findings suggest that urban parents may not understand the long-term health implications of obesity and the early health behaviors that put their child at risk for obesity. In order to produce sustained behaviors in young children, health educators should consider targeting parents, not just children. Considering local urban parents’ perception of obesity and the influential role of parental practices, clinical interventions should include health and nutrition education that does not primarily emphasize weight status. Rather, health and nutrition education should focus on defining behaviors related to promoting healthy lifestyles in preschool age children and their parents and reducing the risks for obesity. Using language that emphasizes "health" versus "obesity," would likely increase urban parents and families acceptability of a health intervention (Goodell et al., 2008; McKee, Maher, Deen, & Blank, 2010). In a study evaluating a developing community-based intervention aimed at reducing obesity in low-income populations, researchers found that program participants were most interested in addressing healthy lifestyles and community barriers, not obesity (D'Abundo & Carden, 2008). As clinicians, it is important to meet urban parents at their point of understanding and consider their beliefs in order to ensure parental engagement and effective change.

Discussion themes suggested that urban parents perceive there are a number of barriers to healthy lifestyles that also serve as contributors to obesity among preschool age children. Although parents identified child-related barriers, such as a child’s food preference and appetite, these contributors represent an interaction between child and parent barriers. Because parents are usually the primary source for food and supervision of outdoor physical activities for preschool age children, child health behaviors are subject to parental practices. Focus group
themes and survey data demonstrate that urban parents often find it difficult to prepare balanced meals, provide healthier food options, serve healthier portion sizes, and limit their child’s screen time. Data suggests that parents largely facilitate the development of child health behaviors that are a risk for obesity. This finding is consistent with the literature that provides evidence that parental practices serve as a mediator for child health behaviors known to lead to obesity (Lindsay, Sussner, Kim, & Gortmaker, 2006; Rhee, 2008; Savage, Fisher, & Birch, 2007).

Some parent related contributors endorsed in the survey data, such as transportation and money for healthier foods, represent barriers often associated with lower household income. According to parental reports, the average household composition of the sample is two adults and four children, with most participants reporting a household income of less than $10,500. The 2013 U.S. poverty threshold for a household of two adults and four children is $31,128, indicating that local urban families represented in this study are living at about 50% below the poverty line, if not more (Ohio Development Service Agency, Research Office, 2015). A review of poverty rates of the metropolitan city represented by this study’s sample showed that from 2009 to 2013, 30% of the population was living at the poverty rate (Ohio Development Service Agency, Research Office, 2015). This suggests that economic status of this sample has the potential to have a considerable impact on urban preschool age engaging in healthy lifestyles. As such researchers and clinicians should also consider the impact of economic barriers when developing interventions.

Although, the parent related barriers are a major contributor, discussion indicated that parents often feel constrained by barriers specific to the urban environment. Focus group themes describe barriers of the urban environment as moderators of the relationship between parental contributors to obesity risks and child health behaviors. Barriers such as a limited access to...
grocery stores/markets and lack of green space limit urban parents’ ability to provide healthy food options, as well as, model healthy eating and outdoor physical activity. When comparing survey data on parental and environmental barriers, quantitative responses suggest that parents have more difficulty with barriers related to the urban environment. Parents and their preschool age children living in urban environments experience a clear disparity given the lack of health promoting resources in the built urban environment. Literature has even documented that children and adults living in wealthier neighborhoods, with greater access to groceries/markets and environments conducive for physical activity, experience fewer risks for obesity than urban communities (Black & Macinko, 2008; Saelens et al., 2012).

Findings suggest that local urban parents have the greatest difficulty overcoming environmental contributors. Of note, local parents highlighted that these environmental contributors not only impact preschool age children, but children of all ages and their families living in an urban environment. As such, health behaviors impacted by barriers of the urban environment are likely to persist for preschool age children as they get older. While findings related to barriers further highlight the need for obesity education that targets parents of children, it also highlights that some parent related barriers, such as income or neighborhood, may not be immediately or easily modifiable for families (Wright & Rogers, 2011). As such, when clinicians are making recommendations to parents on ways to reduce obesity risks in preschool age children, it is important for such recommendations to consider environmental and the economic limitations of families.

Considering the number of noted barriers to healthy lifestyles experienced by urban preschool age children, parents in this study provided insight on necessary components of an effective intervention that might address such barriers and improve obesity-related interventions.
Examining Health Behaviors in Urban Preschool Age Children

Overall, parents agreed that an effective intervention must provide health education to preschool age children and their parents. Participants felt that in order to address parent-related barriers, interventions should provide health education to parents that would provide them with the tools to encourage healthy lifestyles for their child. More specifically, parents highlighted a need for education on healthy meal preparation, reading nutrition labels, and healthy shopping with a limited income. Although, parents were more concerned about their child’s consumption behaviors than their child’s level of physical activity, survey data indicates that many parents feel they need more information regarding physical activity for their child, in addition to information on encouraging healthy consumption behaviors.

Parental insight into the need for health and nutrition education is supported by findings of a number of studies. In Shelton et al.’s (2007) randomized clinical trial of an education intervention for parents of obese children, study components included education on obesity knowledge, nutrition labels, and portion sizes. For parents in the intervention groups, there was a clinically significant reduction in BMI and caloric intake of their child. Another education intervention targeting parents of preschool age children found that as increasing parental nutrition knowledge increased the child’s consumption of fruits and vegetables (Haire-Joshu, et al, 2008).

Additionally, discussion indicated that application/behavior activation activities should be offered for parents and children, such as engaging in dance classes, cooking classes, and community gardening. By doing this, parents are given an additional educational experience that offers an opportunity to model healthy behavior for their child. Parents also noted certain active learning experiences would not only address parental barriers, but also environmental and socioeconomic barriers. Offering more community garden opportunities that allow parent and
child to eat what they grow would create more local access to quality produce and possibly reduce the economic strain of purchasing healthier foods. Community garden activities present a unique community-based intervention component that has not been extensively studied (Robinson-O'Brien, Story, & Heim, 2009). Interventions for children that have included community garden activities have shown a reduction in BMI among overweight/obese children, and increase in fruit and vegetable consumption (Castro, Samuels, & Harman, 2013; Davis, Ventura, Cook, Gyllenhammer, & Gatto, 2011). Themes on intervention development also described creative opportunities for preschool age children and their parents to be physically active, such as dance classes and “open gym” programs. Offering a variety of physical activity opportunities such as these would address physical activity barriers related to neighborhood safety and limited green space. Urban parents’ perception of components of an effective intervention indicates that clinical and community interventions should consider contextual barriers, be culturally relevant, practical, and feasible.

Limitations

While this study produced a number of useful findings, there are limitations that may have impacted some of the findings. By presenting the local data on obesity and health behaviors to participants prior to initiating group discussion, participants may have been unintentionally primed to view obesity and health behaviors of urban preschool age children as problematic. Sharing this data with participants may have introduced level of bias in participants that influenced their quantitative and qualitative reports.

Evidence-based methodology for focus group sampling is to conduct focus groups until the point of theoretical saturation is reached; where new ideas are no longer generated by subsequent groups (Krueger, 2009). However, theoretical saturation is often not ideal or feasible,
Examining Health Behaviors in Urban Preschool Age Children

and literature recommends conducting three to four focus groups, with six to ten participants in order to reach assumed saturation (Onwuegbuzie, & Collins, 2007). While our sample size meets criteria for assumed saturation it is possible that more major themes may have emerged, if a theoretical saturation sampling method was employed.

Also, by using parental report to collect additional quantitative data on health behaviors and obesity risks, there is the potential for data to be inaccurate and/or bias data, in part due to the unreliability of participant recall; but also due to the response bias of under or over reporting (Vereecken, Covents, Maes, & Moyson, 2014). One of the challenges in research of health behaviors is that more reliable methods of measuring consumption and physical activity (i.e., accelerometer, in vivo observation, food/activity diaries) are not always feasible due to study resources, barriers related to the developmental stage of the preschool age child, or time constraints (Thompson, Subar, Loria, Reedy, & Baranowski, 2010). Although parental report of quantitative data on child health behaviors was not a part of the primary outcomes of this study, including more reliably obtained quantitative data, in addition to qualitative data, may help in better understanding the scope of obesity risks in urban preschool age children.

Strengths

This study adds to the limited literature by using qualitative methods to examine health behaviors and obesity in a sample of urban preschool age children. Literature has expressed the need for more qualitative data in order to better understand the complexities related to obesity risks (Hughes, Sherman, & Whitaker, 2010; Whitaker, & Orzol, 2006). Even more specifically, Anderson and Whitaker (2009) proposed future research involve qualitative data collection in order to further understand the parental context of obesity risks in preschool age children, as well as how the neighborhood context impacts parental influence. This study addresses these needs by
utilizing a focus group methodology; discussions provided qualitative evidence that would not have emerged by using quantitative methods alone. Compared to quantitative data collection, fewer studies use focus groups to examine parental perceptions of obesity, health behaviors, and effective intervention design (Bolling, Crosby, Boles, & Stark, 2009; McGarvey, 2006; Peters, Parletta, Lynch, & Campbell, 2014). While some studies have examined the parental perception of barriers and facilitators to health behaviors and obesity, to our knowledge, this is one of the few studies that asked parents of urban preschool age children directly about components of an intervention.

This study further highlighted the unique experience of urban preschool age children by engaging urban parents in a qualitative discussion that was approached as a collaborative effort. Utilizing a conceptualization similar to a community-based participatory research design, by capturing the parental perspective on obesity and interventions for urban preschool age children, it is more likely that resulting interventions will be more effective (Bogart, & Uyeda, 2009).

Also, given that obesity has grown to an epidemic level of concern, findings of this study offer additional considerations for intervention development; including the parental perception of barriers to program utilization. Of note, many of the barriers highlighted by local parents are also risks experienced broadly by older children and adults in urban communities. While these major contributors to unhealthy behaviors may not be preschool age-specific, these findings suggest the presence of a pervasive pattern of barriers to healthy lifestyles in the urban population. As such, this pattern that impacts all age groups of the urban community may benefit from early intervention during the critical window of the preschool age period. Because prevention is more impactful than later intervention, researchers should focus more efforts on studying health behaviors and obesity in preschool age groups; as well as, developing interventions for these
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children. For urban preschool age children, the relationship between parental and environmental barriers represent a disparity for urban preschool age children which can cause them to operate under an early deficit that continues to inhibit healthy behaviors as they age. As such, going forward it is important to conceptualize health and obesity interventions differently for urban preschool age children. Future research should look at adapting evidence-based components of current interventions in order to develop a program for urban preschool age children that is culturally relevant and considers contextual barriers. While barriers specific to urban communities, such as lack of grocery stores/markets, limited green space, and safety represent areas for policy and macro-system level changes, there are opportunities for clinicians to address barriers at a more tangible level. For instance, one way to address food access barriers may be by collaborating with community gardens or markets to provide intervention participants with free or reduced cost produce. In future community intervention development, it is important to consider developing more partnerships between researchers, medical centers, and community organizations in order to address neighborhood related barriers. By pooling community resources, clinicians and researchers are more likely to ensure program feasibility and sustainability. Lastly, involving community members and organization in program development may also increase feasibility and program utilization.

Summary

Findings of this study illustrate that during the preschool age period, children experience a number of external risks that influence their developing health behaviors. This study also highlights the importance of considering the familial context of child health behaviors when developing interventions, as parental contributors are considerably influential. Moreover, this study illustrates parental influences are nested in the environmental context, compounding risks
related to obesity for urban preschool age children. As such, prior to developing an intervention it is necessary to consider the complexity of the environmental context that indirectly influences child health behaviors by impacting the parental context, urban preschool age children.
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References


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doi:10.1016/j.jada.2008.11.022


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Wang, Y., & Beydoun, M. A. (2007). The obesity epidemic in the United States—gender, age, socioeconomic, racial/ethnic, and geographic characteristics: a systematic review and
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meta-regression analysis. *Epidemiologic Reviews*, 29(1), 6-28. doi:
10.1093/epirev/mxm007


Appendix A

Focus Group Script

Give Instructions and Overview:

**INTRODUCTION:** Hello, my name is ______________ I will be the Discussion Group Leader for the Focus Group today. I also have some other people helping me with paperwork. Introduce others in the room ______________________________. The discussion will last for approximately 1.5 hours.

**Goal for Today’s Discussion Group:**

The preschool age period has been identified as an important time for learning healthy behaviors and preventing obesity. Obesity has received a lot of attention as a major child health problem that many communities are facing. Family, economic, and cultural factors are important to understanding child health and obesity. These factors are especially important to consider in children who live in the inner city because they are often at increased risk for obesity due to environmental factors.

To better understand the health behaviors of preschool children and their risk for obesity we are conducting three focus groups. The information gathered from these focus groups may be used to develop future obesity and health interventions for children.

Today you will be participating in a focus group or discussion group. These groups give parents an opportunity to talk with others in the group about their preschool child and answer questions. Specifically, to this project, the goal of the focus group is also to learn what parents think about health of preschool children and what we can do to improve it.

**Description of Focus Groups:**

The way that the groups will work is that I will ask a very open question and will give everyone the opportunity to talk and share their thoughts and experiences. So don’t be shy. We are interested in what you have to say.

**Audiotaping:** To state a few things - there will be audio taping (taping with a tape recorder) and videotaping of the sessions. They will review the audio and video files at the end to understand what was said and type up a report. Nothing else will be done with the tapes and you will not be identified by name in the written reports. The tapes will not be used for any purpose than for the study. The tapes will be used to type a report about what we have learned.
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**Summary of Group Rules:** We will ask for the following group rules to be followed to allow the discussion to flow more smoothly.

1. When you respond to something, I may ask if others have had the same or different experiences. So let me know if your experiences are the same or different.

2. Try to speak loudly and clearly for everyone to hear. I may ask you to repeat yourself to make sure your opinion is heard or I may repeat it to make sure I understand it. Also, try not to cut people off; all of this is very important because if we cannot hear everyone’s story it cannot be included in the report.

3. There are no right and wrong answers, so feel free to say whatever you feel. We are interested in what everybody has to say.

4. I want to hear from everybody. Sometimes, I may call on you and ask you to share or answer a question. Some people have a lot to share and some people less, so there may be times when I have to limit what people say so that we get around to everyone.

5. We have a certain amount of time for each question. Also, if we start to run short on time, I may have to limit how much we talk, so that we are able to cover all of the questions.

6. Some may be late, so please make room for them and we will update them briefly and invite them to join the discussion.

7. The most important rule is to respect others in the group. If anyone is not respectful, they will be asked to leave the group.

8. Are there any questions?

9. We will have you finish completing papers after the group is over, but do not put your name on this so no one will know how you responded. Please answer the questions honestly because this will help us learn as much as we can about child health.

10. At the end of the focus group there will be compensation for all of you who complete the focus group. This is our way of thanking you for taking the time to share with us.

Now that we have described our goals, let’s start with a question that will allow everyone to learn something about one another.
I. Opening Question:
State your first name and something about your preschool child that makes you smile.

Transition:
Thanks for sharing, it is nice to hear such positive things about your children.

Participants complete pages 2-7 in focus group survey booklet

i. Health of Local Preschool Children

Now we briefly want to share with you some data on a group of preschool age children who live in Cincinnati. This data was collected from 164 parents of preschool children, who completed a survey about their child’s health behaviors. We wanted to show you this data because as parents of preschool children, you are the experts on the health behaviors of your child. We wanted to get your insight on why some of these health behaviors exist in preschool children.

*Present PowerPoint Slides of Data for Local Preschool Children*

I. INTRODUCTORY QUESTIONS
1. What are your thoughts after seeing this data on local preschool children?
   Prompts: What surprises you about this data? What doesn’t surprise you? How accurate do you think this data is?

2. What do you think contributes the most to obesity and health behaviors in this group of preschool children?
   Prompts: food preferences, environment/community factors, living in the city, parental eating behaviors, lack of activity in schools

3. What makes a child healthy?

4. What do you think about nutrition of young children today?

II. KEY QUESTIONS:
   i. Obesity in Local Preschool Children

5. What do you think about weight of young children today?

6. What are the main causes of obesity in preschool children in your community?
   Prompts: lack of physical activity, lack of safe places to play and exercise, access to healthy food
Participants complete pages 9-13 in focus group survey booklet

ii. Barriers to Healthy Eating

7. What might make it difficult for preschool children to eat healthy (e.g., fresh fruits, vegetables)?
   Prompts: cost, transportation, child taste preferences, day-to-day schedule

8. What environmental/community factors make it difficult?
   Prompts: Grocery stores, availability of fresh produce

9. What role do parents play in nutrition and obesity of young children?
   Prompts: Knowledge, Information on nutrition, cooking skills, access to food/grocery stores

Participants complete pages 15-17 in focus group survey booklet

iii. Barriers to Physical Activity

10. What makes it difficult for preschool children to be physically active?
    Prompts: child prefers TV, family isn’t active, child supervision, environmental/community factors

11. What community/environmental factors make it difficult?
    Prompts: neighborhood safety, parks or recreation centers close by

Participants complete pages 19-21 in focus group survey booklet

Transition:

You may be aware of some efforts in the community to help preschool children eat healthier and be more physically active.

12. What has your child’s pediatrician done to promote a healthy diet and/or physical activity in your child?
    Prompts: discussion of BMI, discussion of growth, nutrition

13. What has your child’s school done to promote a healthy diet and/or physical activity in your child?
    Prompts: increase outdoor activity, provide health education
iv. Effective Intervention Design

14. What can researchers/doctors/schools do to help preschool children eat healthy foods and maintain a healthy weight?

   Prompts: education in schools, videos, books, parent cooking classes, parent education, cooking classes, community education classes, brochures, community programs, school programs

15. What can researchers/doctors/schools do to help preschool children in your community to be physically active?

   Prompts: education on physical activity, information on community activities, assistance with access, more in/after school physical activity programs

III. Final Questions

   We would like to design an obesity prevention program that would focus on preschool children who live in the inner city, and getting these children to eat healthy and be physically active. It is important for us to hear what you as parents think is important to address when trying to help these children.

16. Is there anything else you think we should know to help us develop an intervention like this?

   Prompts: What should it include? Where should it be? What sorts of things would be helpful? Not helpful? What would make people participate?

17. After everything we have talked about, what do you think makes it difficult to raise healthy preschool children in your community?

   Prompts: Access to healthy foods, Violence, Lack of jobs, Poor school lunch options

18. Tell us your best idea or just one thing that would make it possible for us to succeed in promoting health and healthy weight in preschool children.

   Participants complete pages 23 in focus group survey booklet
Appendix B

Focus Group Survey

Tell Us about You and Your Preschool Child

1. How old is your preschool age child? _____ years old

2. Gender of your preschool age child: □ Male □ Female

3a. Ethnicity of your preschool age child: □ Hispanic □ Non-Hispanic

3b. Race of your preschool age child:
  □ White/Caucasian □ Black/African American □ Hispanic/Latino
  □ Asian □ Pacific Islander □ Appalachian
  □ Other (describe) __________________________

4. What’s your zip code? ____________

5. What is your relationship?
  □ Mother □ Father □ Guardian
  □ Grandparent □ Foster Parent □ Other (describe) ______________________

6a. Number of Adults in Household: _____
6b. Number of Children in Household: _____
6c. How old are the other children in your household?
   (list each child’s age in months or years):
   1)________________  2)________________  3)_______________
   4)_______________  5)_______________  6)_______________

Your Employment Status:
 □ Working Full-Time □ Working Part-Time
 □ Retired □ Stay Home Parent
 □ Student □ Unemployed

What is your highest level of education?
 □ Less than High School □ High School/GED
 □ Some College □ Associate Degree
 □ Bachelor’s Degree □ Master’s Degree
 □ Doctorate/PhD
 □ Other __________________________
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Family Income:
☐ Less than $10,500 ☐ $10,500-$13,999
☐ $14,000-$17,599 ☐ $17,600-$21,199
☐ $21,200-$24,799 ☐ $24,800-$29,999
☐ $30,000-$39,999 ☐ $40,000-$49,999
☐ $50,000-$59,999 ☐ $60,000-$69,999
☐ $70,000 or more

Do you have health insurance? ☐ Yes ☐ No

If yes, what type of health insurance do you have?
☐ Insurance through an employer (of you or another family member)
☐ Insurance purchased directly from an insurance company (by you/a family member)
☐ Government funded insurance (ex: Medicaid, CareSource, Molina)
☐ Subsidized insurance (ex: via the affordable healthcare act; Obamacare)
☐ Military insurance (ex: Tricare, VA healthcare)
☐ Uninsured

Please answer the following questions about your preschool age child

1. Do you think your preschool age child overweight or obese?
   ___Yes ___No

2. Is being overweight/obese a health concern for you regarding your preschool age child?
   ___Yes ___No

3. How concerned are you about your child’s weight?
   
   ![Sad Face] 0----1----2----3----4----5  ![Happy Face]
   Not at All Very Much

4a. Do you have concerns about your preschool age child’s eating habits?
   ___Never ___Rarely ___Sometimes ___Often
Examining Health Behaviors in Urban Preschool Age Children

4b. Why or Why not?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

5a. Do you think your preschool age child gets enough physical activity?

___Never  ____Rarely  ___Sometimes  ____Often

5b. Why or Why not?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

6. How easy do you think it is for families in your community to purchase healthy foods (like fresh fruits and vegetables and whole grains, for example) for their children?

👍👍👍👍👍  0----1----2----3----4----5  😞😞😞😞😞

Very Easy  Very Hard
Examining Health Behaviors in Urban Preschool Age Children

7. How easy is it for you to provide the following for your child? (circle one for each)

<table>
<thead>
<tr>
<th></th>
<th>Very Hard</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Very Easy</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Daily Breakfast</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>(b) Fresh Fruit/Vegetables</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>(c) Making Dinners at Home</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>(d) Eating Family Meals Together</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

8. What challenges, if any, do you face trying to provide your preschool age child with healthy foods (e.g. balanced meals, whole grains, fresh fruits & vegetables)?

<table>
<thead>
<tr>
<th></th>
<th>Never a Challenge</th>
<th>Rarely a Challenge</th>
<th>Sometimes a Challenge</th>
<th>Often a Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Child’s food preferences</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>b) Limited money for healthy foods</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>c) Transportation to grocery stores</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>d) Eating habits of others in the house</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>e) Not enough time to prepare food</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>f) Other (describe):</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Examining Health Behaviors in Urban Preschool Age Children

9a. Do you ever feel that you need more information about how to help your preschool age child eat healthy (like suggested portion sizes, healthy shopping on a budget, information on nutrition)?

___Never  ____Rarely  ___Sometimes  _____Often

9b. Do you ever feel that you need more information about how to help your preschool age child be more physically active (like exercises for children, how to be active inside)?

___Never  ____Rarely  ___Sometimes  _____Often

9c. What type of information would be helpful? (circle one for each)

<table>
<thead>
<tr>
<th>Information Type</th>
<th>Not Helpful</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Very Helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Menu guide</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>b) Recipe/Quick meal tips</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>c) Cooking classes</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>d) Taste tests for kids</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>e) Healthy eating on a budget</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>f) Exercises for children</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>g) How to be active inside</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>h) Local physical activity programs for children</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>h) Other (describe):</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
10. How easy is it to find the following in your community: (circle one for each)

<table>
<thead>
<tr>
<th></th>
<th>Very Hard</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Grocery Store</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>b) Fresh Food Market</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>c) Safe Places to Play</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>d) Recreation Center Programs for Preschool Age Children</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>e) Adult Fitness Center</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>f) Green Spaces/Parks</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

11. How often does your preschool age child enjoy these activities?

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Play Outside</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>(b) Watch TV</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>(c) Read</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>(d) Play on the Computer/Tablet</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>(e) Play Video Games</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>(f) Play/Walk in the Park</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>(g) Free Play (drawing, toys)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
12. How easy is it for you to do the following: (circle one for each)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Very Hard</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Limit TV and Video Games</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>(b) Find Safe Places to Play</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>(c) Provide Structured Activities for Your Child (dance, basketball)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>(d) Eating Family Meals Together</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

13. How easy is it for you to get your preschool age child to be physically active for 60 minutes?

Very Hard

0----1----2----3----4----5

Very Easy
14. What challenges, if any, do you face trying to get your child to be more physically active?

<table>
<thead>
<tr>
<th></th>
<th>Never a Challenge</th>
<th>Rarely a Challenge</th>
<th>Sometimes a Challenge</th>
<th>Often a Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Work schedule</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>(b) Transportation</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>(c) Limited Parks</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>(d) Limited ability to supervise child</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>(e) Needs of other children in the house</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>(f) Other (describe):</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
15. Are you aware of any efforts or programs in your community that promote the following? If so, please briefly describe the program.

<table>
<thead>
<tr>
<th>Nutrition Programs (please describe)</th>
<th>Are you participating in the program?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>□ Yes □ No</td>
</tr>
<tr>
<td>2)</td>
<td>□ Yes □ No</td>
</tr>
<tr>
<td>3)</td>
<td>□ Yes □ No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical Activity Programs (please describe)</th>
<th>Are you participating in the program?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>□ Yes □ No</td>
</tr>
<tr>
<td>2)</td>
<td>□ Yes □ No</td>
</tr>
<tr>
<td>3)</td>
<td>□ Yes □ No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Health Programs (please describe)</th>
<th>Are you participating in the program?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>□ Yes □ No</td>
</tr>
<tr>
<td>2)</td>
<td>□ Yes □ No</td>
</tr>
<tr>
<td>3)</td>
<td>□ Yes □ No</td>
</tr>
</tbody>
</table>

16. In your experience, what sorts of things are NOT helpful or effective in getting a preschool age child to eat more healthy foods?

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
17. In your experience, what sorts of things are NOT helpful or effective in getting a preschool age child to be more physically active?

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

18. Do you have any final thoughts on how children and families can eat healthier and be more physically active?

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________

Thank you for Participating
Appendix C

Child Health Behavior Survey

1. How many cups of VEGETABLES does your child eat each DAY... not including French fries or other potatoes? **Circle your answer**

<table>
<thead>
<tr>
<th></th>
<th>0 cups</th>
<th>1 cup</th>
<th>2 cups</th>
<th>3 cups</th>
<th>4 cups</th>
<th>5 or more cups</th>
</tr>
</thead>
</table>

2. How many cups of FRUIT does your child eat each DAY... not including French fries or other potatoes? **Circle your answer**

<table>
<thead>
<tr>
<th></th>
<th>0 cups</th>
<th>1 cup</th>
<th>2 cups</th>
<th>3 cups</th>
<th>4 cups</th>
<th>5 or more cups</th>
</tr>
</thead>
</table>

3. How many times does your child eat breakfast **AT HOME** during school days? **Circle your answer**

<table>
<thead>
<tr>
<th></th>
<th>0 days</th>
<th>1 day</th>
<th>2 days</th>
<th>3 days</th>
<th>4 days</th>
<th>5 days</th>
</tr>
</thead>
</table>
4. Where does your child eat breakfast during the week? Circle your answer

- Only at Home
- Only at School
- Both

5. How many minutes of EXERCISE does your child get in a DAY? (Examples: running, climbing, sports that cause your child to breathe harder than usual) Circle your answer

- 15 minutes
- 15 to 30 minutes
- 30 to 60 minutes
- more than 60 minutes

6. How many hours a DAY does your child spend watching a screen? (Examples: TV, video games, computer…) Circle your answer

- 30 minutes
- 1 hour
- 2 hours
- 3 hours
- 4 hours
- 5 or more hours
7. During a week, how many meals (breakfast, lunch or dinner) does your child eat from a drive-thru, carry-out or restaurant? **Circle your answer**

<table>
<thead>
<tr>
<th>0 times a week</th>
<th>1 to 2 times a week</th>
<th>3 to 4 times a week</th>
<th>5 or more times a week</th>
</tr>
</thead>
</table>

8. How many cups **a DAY** does your child **USUALLY** drink of … **Circle your answer**

**A. 100% Fruit juice**

<table>
<thead>
<tr>
<th>0 cups</th>
<th>1 cup</th>
<th>2 cups</th>
<th>3 cups</th>
<th>4 cups</th>
<th>5+ cups</th>
</tr>
</thead>
</table>

**B. Soft drinks, pop, soda**

<table>
<thead>
<tr>
<th>0 cups</th>
<th>1 cup</th>
<th>2 cups</th>
<th>3 cups</th>
<th>4 cups</th>
<th>5+ cups</th>
</tr>
</thead>
</table>

**C. Other sugary drinks (Gatoraid, Kool-Aid, or Fruit Punch)**

<table>
<thead>
<tr>
<th>0 cups</th>
<th>1 cup</th>
<th>2 cups</th>
<th>3 cups</th>
<th>4 cups</th>
<th>5+ cups</th>
</tr>
</thead>
</table>
D. Water

<table>
<thead>
<tr>
<th></th>
<th>0 cups</th>
<th>1 cup</th>
<th>2 cups</th>
<th>3 cups</th>
<th>4 cups</th>
<th>5+ cups</th>
</tr>
</thead>
</table>

E. Milk

<table>
<thead>
<tr>
<th></th>
<th>0 cups</th>
<th>1 cup</th>
<th>2 cups</th>
<th>3 cups</th>
<th>4 cups</th>
<th>5+ cups</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>E1. What type of milk product does your child drink the most?</th>
<th>Please mark only one</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Milk</td>
<td></td>
</tr>
<tr>
<td>Low Fat (2%, 1%, or Skim)</td>
<td></td>
</tr>
<tr>
<td>Non-Dairy Milk Product (soy, almond, etc.)</td>
<td></td>
</tr>
</tbody>
</table>