Caregivers' Psychosocial Factors Underlying Sugar-Sweetened Beverage Intake Among Non-Hispanic Black Preschoolers: An Elicitation Study

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The purpose of this study was to explore caregivers’ beliefs and perceptions regarding serving sugar-sweetened beverages (SSBs) to non-Hispanic black preschoolers. The Theory of Planned Behavior (TPB) was used as the framework for conducting elicitation interviews among a sample of (n = 19) caregivers. Thematic coding of interview transcripts revealed that the decision to serve SSBs to preschoolers is driven by numerous individual, familial, cultural, and environmental factors. Salient factors associated with serving SSBs included convenience, cost, taste, potential health consequences, availability, and pressure from other parents. Population-specific interventions aimed at reducing SSB intake among non-Hispanic preschoolers are discussed. © 2013 Published by Elsevier Inc.

HEALTH PROFESSIONALS AND policy makers have become increasingly concerned about dramatic increases in sugar-sweetened beverage (SSB) consumption among U.S. children (Robert Wood Johnson Foundation, 2009; United States Department of Agriculture, 2010). According to the Centers for Disease Control (CDC), SSBs are defined as beverages to which caloric sweeteners, most commonly sucrose and high fructose corn syrup, have been added (CDC, 2010). SSBs include soft drinks, fruit drinks, punches, “-ade” drinks, sports drinks, sweetened coffee, sweetened tea, energy drinks, and sweetened milk drinks (CDC, 2010).

SSBs are currently a leading source of energy intake from added sugars among 2-18 year-old children in the U.S. (Reedy & Krebs-Smith, 2010; United States Department of Agriculture, 2010). National data estimates that 70% of boys and 60% of girls between 2-19 years consume SSBs on any given day (Ogden, Kit, Carroll, & Park, 2011). Energy consumed from SSB intake among youth increases with age. During the period 2005-2006, the mean daily intake in kilocalories from SSBs among 2-6 year-olds, 7-12 year-olds and 13-18 year-olds was 87, 140, and 242 respectively (Popkin, 2010). Among youth ages 2-19 years, non-Hispanic blacks consumed the highest percentage of total dietary calories from SSBs when compared to non-Hispanic white and Mexican-American youth (Ogden et al., 2011). Children ages 2-19 years in low-income households consume a higher mean percentage of daily kilocalories from SSBs than youth living in higher-income households (Ogden, 2010).
et al., 2011). In fact, evidence indicates that low-income households spend a higher percentage of home beverage dollars on SSBs compared to higher income households (French, Wall, & Mitchell, 2010).

High intake of SSBs has been linked to increased weight status among children and is a contributing factor to the current childhood obesity epidemic (Malik, Schulze, & Hu, 2006; Vartanian, Schwartz, & Brownell, 2007).

Evidence indicates that the risk for obesity among children increases by 60% for each additional can or glass of SSB consumed each day (Ludwig, Peterson, & Gortmaker, 2001). It is estimated that prevalence of childhood obesity has more than tripled since 1980 and that nearly 17% of U.S. children aged 2-19 years are currently classified as obese (Ogden, Carroll, Curtin, & Flegal, 2012). Overweight and obese children are at higher risk for developing long-term complications including type 2 diabetes, hypertension, cardiovascular disease, respiratory problems and musculoskeletal problems (American Heart Association, 2010; Dietz, 1998; Freedman, Mei, Srinivasan, Berenson, & Dietz, 2007; Sarof & Daniels, 2002).

Regular consumption of SSBs has been linked to serious health conditions including insulin resistance-associated metabolic parameters, decreased high-density lipoprotein cholesterol, increased systolic blood pressure, and metabolic syndrome (Bremer, Auinger, & Byrd, 2009). Evidence indicates that SSB intake contributes to type 2 diabetes, hepatic de novo lipogenesis, visceral adiposity, and hyperurecemia (Hu & Malik, 2010; Malik, Popkin, Bray, Despres, & Hu, 2010). Other health conditions that have been linked to consumption of SSBs include kidney disease, possible osteoporosis and fractures, poor diet quality, and dental caries (American Academy of Pediatrics, 2006; Dubois, Farmer, & Girard, 2007; Lim et al., 2009; Ogden et al., 2011; Sohn, Burt, & Sowers, 2006; Vartanian et al., 2007; Warren et al., 2009).

More than 60% of soft drinks contain caffeine which can negatively impact the health of children (Keast & Riddell, 2007; Temple, 2009). Twelve ounce servings of Pepsi, Coca-Cola, and Mountain Dew contain 38.9, 33.9, and 54.8 mg of caffeine respectively (Chou & Bell, 2007). A 16 oz energy drink, such as Full Throttle, can contain as much as 200 mg of caffeine (Center for Science in the Public Interest, 2012). Children who consume more than 50 mg of caffeine each day are at increased risk for experiencing caffeine withdrawal symptoms (Temple). Caffeine doses between 100 mg and 400 mg have been associated with nervousness and jitteriness among youth (Temple). Caffeine consumption can also contribute to disrupted sleep patterns, depression, and dependence in children (Calamaro, Yang, Ratcliffe, & Chasens, 2012; Luebbe & Bell, 2009; Temple). Consumption of energy drinks, which contain high levels of caffeine, has been associated with seizures, liver damage, kidney failure, hypertension, and sudden death among youth (Seifert, Schaechter, Hershorn, & Lipshultz, 2011).

Low-income and non-Hispanic black individuals are at higher risk for developing several SSB-related health problems (American Academy of Pediatrics, 2006; Dubois, Farmer, & Forthofer, 2010; Ogden et al., 2011; van der Horst et al., 2007), lower relative cost (Bevan & Reilly, 2011; Thompson et al., 2003), and increased consumer price index (Wilcox, 2009). Numerous parent-related factors including moderate and restrictive parenting practices (de Brujin, Kremers, de Vries, van Mechelen, & Brug, 2009; Woodruff et al., 2010), eating meals with family (McClain et al., 2009, Woodruff et al., 2010), purchasing of meal items at a discount SSBs include kidney disease, possible osteoporosis and fractures, poor diet quality, and dental caries (American Academy of Pediatrics, 2006; Dubois, Farmer, & Girard, 2007; Lim et al., 2009; Ogden et al., 2011; Sohn, Burt, & Sowers, 2006; Vartanian et al., 2007; Warren et al., 2009).

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Low-income and non-Hispanic black individuals are at higher risk for developing several SSB-related health problems (American Academy of Pediatrics, 2006; Dubois, Farmer, & Forthofer, 2010; Ogden et al., 2011; van der Horst et al., 2007), lower relative cost (Bevan & Reilly, 2011; Thompson et al., 2003), and increased consumer price index (Wilcox, 2009). Numerous parent-related factors including moderate and restrictive parenting practices (de Brujin, Kremers, de Vries, van Mechelen, & Brug, 2009; Woodruff et al., 2010), eating meals with family (McClain et al., 2009, Woodruff et al., 2010), purchasing of meal items at a discount (Gortmaker, Ebbeling, Pereira, & Ludwig, 2004; Pieper & Whaley, 2011; Woodruff, Hanning, & McGoldrick, 2010), parental consumption of SSBs (Campbell et al., 2007; Grimm et al., 2004; McClain, Chappius, Nguyen-Rodriguez, Yaroch, & Spruijt-Metz, 2009; van der Horst et al., 2007; Vereecken, Keukelier, & Maes, 2004; Woodward et al., 1996), preference for taste, peer intake (Grimm et al., 2004; McClain et al., 2009; van der Horst et al., 2007; Woodward et al., 1996), increased television viewing (Grimm et al., 2004; Miller, Taveras, Rifas-Shiman, & Gillman, 2008; van der Horst et al., 2007), and media exposure (Hitchings & Moynihan, 1998). Ethnicity has been implicated as a 156 facilitator of SSB intake. Balian (2009) reported that 157 minority school-aged children were more likely than their 158 white counterparts to perceive that friends and family 159 members approved of daily soft drink consumption. 160

Decreased SSB consumption among children has been 161 associated with healthy eating behaviors such as fruit and 162 vegetable intake (Pieper & Whaley, 2011; Vereecken et al., 163 2004), milk consumption (Keller, Kirzner, Pietrobelli, St- 164 Ong, & Faith, 2009) and liking water (McClain et al., 165 2009; Woodruff et al., 2010), purchasing of meal items at a 166 grocery store, preparation of meals by family members 167 (Woodruff et al., 2010), eating meals with family (McClain et al. 168 et al., 2009, Woodruff et al., 2010), and increased consumer 169 price index (Wilcox, 2009). Numerous parent-related factors 170 have been associated with reduced SSB intake among youth 171 including moderate and restrictive parenting practices (de 172 Brujin, Kremers, de Vries, van Mechelen, & Brug, 2007; 173 Gubbels et al., 2009; Nickelson et al., 2010), higher 174 maternal education and restraining from negative modeling 175 (Vereecken et al., 2004).
Higher rates of SSB intake coupled with increased prevalence of SSB-related health problems among non-Hispanic black children underscore the need for pediatric nurses and other healthcare professionals to address dietary habits with adult caregivers. Reduction in SSB intake among children can reduce the risk of developing obesity and other health conditions. Little is known about factors that influence SSB intake among non-Hispanic black children during the preschool years. An understanding of caregivers’ underlying attitudes and beliefs surrounding SSB intake among young children will enable healthcare professionals to tailor programs aimed at reducing SSB intake among non-Hispanic black preschool-age children.

The purpose of this study was to explore caregivers’ beliefs regarding SSB consumption among predominately low-income non-Hispanic black preschoolers using the Theory of Planned Behavior (TpB) as the guiding framework. Therefore, the following research questions were addressed: (a) What do caregivers perceive to be advantages and disadvantages regarding daily SSB consumption among preschoolers? (b) Who are the people or groups that may approve or disapprove of serving SSBs to preschoolers on a daily basis? (c) What factors facilitate or impede serving SSBs to preschoolers on a daily basis?

This qualitative study served as the first of a larger three-phase research project investigating the determinants of SSB intake among preschoolers. Qualitative data generated from this study provided information concerning cultural and social influences on SSB intake which can guide the design of SSB reduction interventions.

Theory of Planned Behavior

The Theory of Planned Behavior (TpB) is used to explain and predict health-related behaviors and is based on the premise that intent to perform a behavior is the most proximal determinant of that behavior (Ajzen, 1991; Armitage & Conner, 2001). Three variables are believed to be predictive of a person’s intent to engage in a specific behavior: attitudes of the individual related to the behavior; subjective norms; and the individual’s perceived behavioral control as illustrated in Figure 1 (Ajzen, 1991). Attitude, subjective norms, and perceived behavioral control are determined by three categories of salient beliefs (beliefs related to a behavior): behavioral beliefs; normative beliefs; and control beliefs (Ajzen, 1991).

More favorable attitudes towards a behavior should increase behavioral intent. Attitude is determined by behavioral beliefs about the attributes and expected outcomes associated with a behavior (Ajzen, 1991). Subjective norm “refers to the social pressure to perform or not perform” a specific behavior and is shaped by normative beliefs, and the individual’s motivation to comply with normative beliefs (Ajzen, 1991, p. 188). Normative beliefs reflect the perception of beliefs held by peer groups or “referent individuals” related to the performance of a behavior (Ajzen, 1991). The construct of perceived behavioral control is based upon the premise that an individual’s degree of confidence in one’s own ability to engage in a behavior is a strong determinant of behavioral intention (Ajzen, 1991). Control beliefs (subjective beliefs about existing factors that either assist or hinder the performance of a behavior) and perceived power to perform the behavior are determinants of perceived behavioral control (Ajzen, 1991).

The TpB has been successfully used to predict SSB intention and practices among school-age children, adolescents, and parents (Balian, 2009; de Brujin et al., 2007; Enzendam, Evans, Stigler, Brug, & Oenema, 2009; Jordan, Piotrowski, Bleakley, & Mallya, 2012; Kassem & Lee, 2004; Kassem, Lee, Modeste, & Johnston, 2003; van der Horst et al., 2008). However, no studies have been published that specifically explore the usefulness of the TpB to explain SSB

Figure 1  Theoretical Model of Hypothesized Relationships. Note. Direct effect indicated by arrow (➞). Adapted from “Constructing a Theory of Planned Behavior Questionnaire,” by Ajzen, 2006.
behaviors and intention among preschoolers, caregivers of preschoolers, or non-Hispanic black children.

Method

This study was conducted using semi-structured interviews to elicit salient behavioral, normative, and control beliefs underlying caregivers’ intention to serve SSBs to predominately low-income non-Hispanic black preschoolers. According to Ajzen (2006), participants should be asked a set of questions about their salient, or accessible, beliefs about behavioral outcomes, normative referents and control factors surrounding the behavior of interest. Such elicitation interviews are conducted using a free-response format and can be conducted individually or in groups (Ajzen, 2006). Small group interviews consisting of 2-3 caregivers were conducted in the metropolitan New Orleans area. Approval to conduct the study was obtained from the Louisiana State University Health Sciences Center-Institutional Review Board and the Louisiana Department of Health and Hospitals-Institutional Review Board.

Sample and Setting

A purposive sample of 19 caregivers was recruited from two publically funded supplemental nutrition clinics located in the metropolitan New Orleans area. Caregivers were eligible to participate in the study if they were at least 18-years-old, resided in the same household as a non-Hispanic black child between the ages of 2-5 years, and reported providing most meals and snacks to the preschooler in the home setting. Caregivers were excluded from participation if the preschool child was on a special diet. Based on TpB-based research, investigators planned to interview an initial sample of 25 caregivers (Francis et al., 2004). However, data saturation was reached after 19 participants were interviewed.

Data Collection

After completing a brief demographic questionnaire, face-to-face elicitation interviews were conducted in a quiet room. Semi-structured interviews were guided by nine open-ended questions based on the TpB constructs of attitude, subjective norm, and perceived behavioral control (Table 1). Questions addressed the advantages and disadvantages of serving SSBs to preschoolers, individuals and groups who would approve or disapprove of serving SSBs to preschoolers, and factors that impede or facilitate serving SSBs to preschoolers. Each elicitation interview session was audiotaped and lasted approximately 30 minutes. A total of nine interview sessions were conducted on five separate days during December 2011. No participants withdrew from the study.

Data Analysis

Demographic data were analyzed to describe sample characteristics such as age, gender, and household income. Elicitation interviews were transcribed verbatim and compared with audiotaped interviews to ensure accuracy by the moderator. Tesch (2002) recommended organizing data according to concepts from the research questions and/or the guiding theoretical framework. Each line of interview transcripts was reviewed during the coding process. Responses were coded for themes based on related words, phrases or concepts using NVivo9 software and were classified as behavioral beliefs, normative beliefs or control beliefs. Text was coded into themes by identifying central and repeated concepts, reviewing the context in which major concepts arose, and searching for contradictory themes. Participant responses were re-read and compared against

<table>
<thead>
<tr>
<th>t1.1</th>
<th>Table 1 Elicitation Interview Questions.</th>
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<tbody>
<tr>
<td></td>
<td>Construct</td>
</tr>
<tr>
<td>t1.4</td>
<td>Attitude</td>
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<tr>
<td>t1.5</td>
<td>Subjective Norm</td>
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<tr>
<td>t1.6</td>
<td>Perceived Behavioral Control</td>
</tr>
</tbody>
</table>
themes. Two researchers separately reviewed the transcripts and compared them with thematic groupings and rankings prior to meeting to verify definitions and coding of themes. Overlapping themes with the same definitions were condensed into a single theme. Belief themes were then summed and percentages were calculated. In accordance with Ajzen and Fishbein (1980), beliefs identified by at least 20% of participants were ranked in numerical order based on frequency of responses. The two researchers were in 100% consensus concerning inclusion and ranking of themes for the initial instrument.

### Results

#### Demographics

Table 2 depicts the demographic characteristics of the sample. Nearly 37% of participants \((n = 7)\) reported that their preschooler consumes at least one serving of SSBs each day. Approximately 32% of participants \((n = 6)\) indicated that their preschooler consumes SSBs on a weekly basis. More than 26% of participants \((n = 5)\) reported that their preschooler consumes SSBs less than once a week. The qualitative findings are presented according to the TpB concepts of behavioral, normative, and control beliefs and include themes identified by at least 20% of participants.

#### Behavioral Beliefs

Behavioral beliefs concerning the advantages and disadvantages of serving SSBs to preschoolers are presented in Table 3. The most frequently identified disadvantage associated with SSBs was hyperactivity. Another perceived disadvantage was that SSBs contain “too much sugar.” Caregivers believed that SSBs could cause negative health problems including tooth decay, diabetes, and urinary and kidney problems. However, some caregivers expressed the belief that there were no major disadvantages associated with SSB intake. One caregiver explained that any possible health threat posed by SSB intake was relatively minor compared to environmental hazards.

Several positive attitudes towards serving SSBs to preschoolers were revealed during elicitation interviews. Convenience was the most salient reported advantage of

<table>
<thead>
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<th>Table 2</th>
<th>Demographics.</th>
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<tbody>
<tr>
<td>Variable</td>
<td>Frequency</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>18</td>
</tr>
<tr>
<td>Male</td>
<td>1</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>18 to 24 years</td>
<td>6</td>
</tr>
<tr>
<td>25 to 34 years</td>
<td>10</td>
</tr>
<tr>
<td>35 to 44 years</td>
<td>3</td>
</tr>
<tr>
<td>Annual Household Income</td>
<td></td>
</tr>
<tr>
<td>less than $22,000</td>
<td>16</td>
</tr>
<tr>
<td>$22,000 to $44,000</td>
<td>1</td>
</tr>
<tr>
<td>did not respond</td>
<td>2</td>
</tr>
<tr>
<td>Preschooler SSB intake</td>
<td></td>
</tr>
<tr>
<td>several times/day</td>
<td>2</td>
</tr>
<tr>
<td>1 to 2 times/day</td>
<td>5</td>
</tr>
<tr>
<td>several times/week</td>
<td>4</td>
</tr>
<tr>
<td>1 to 2 times/week</td>
<td>2</td>
</tr>
<tr>
<td>less than once/week</td>
<td>5</td>
</tr>
<tr>
<td>did not respond</td>
<td>1</td>
</tr>
</tbody>
</table>

| Table 3 | Behavioral Beliefs of Sample Regarding Serving SSBs to Preschoolers. |
|---------|----------------|-------------------|
| Behavioral Beliefs | Frequency | Percent | Examples of Participant Responses |
| Makes child hyperactive | 15 | 78.9% | “It makes them really hyper, so I don’t like that part of it.” |
| Convenient | 7 | 36.8% | “It was convenient for me cause they’re already, you know, pre-packaged and so all I got to do is give it to them and go.” |
| Too much sugar | 7 | 36.8% | “…the drinks can cause damage to their teeth.” |
| Child feels rewarded/special | 4 | 21.1% | “I just feel that giving him the sugary drinks just adds more sugar than he needs in a day.” |
| Causes urinary/kidney problems | 4 | 21.1% | “Any good things about it? It tastes good, for the kids, yeah.” |
| Risk for diabetes | 6 | 31.6% | “They’ll kind of keep him, you know, preoccupied.” |
| No major disadvantages | 4 | 21.1% | “Diabetes does run on both sides of my family. So I just know that the less sugar they’re having in their diet, that’s better than anything else.” |
| No advantages | 4 | 21.1% | “There’s really nothing good about it.” |
| Keeps child content | 6 | 31.6% | “It makes them feel like they’re being rewarded—it’s like, okay, I fit in. I’m special.” |
| Child likes taste | 7 | 31.6% | “The cola drinks cause kidney failure.” |
| Bad for teeth | 7 | 36.8% | “When we walk outside and there’s chemical plants all over, so it’s like the biggest of the biggest problems with the little knick knack problem as far as a cola drink or a candy bar. Yeah, compared to things that can actually kill a person, like, it’s at the bottom of the list.” |

The qualitative findings are presented according to the TpB concepts of behavioral, normative, and control beliefs and include themes identified by at least 20% of participants.
regularly serving SSBs to preschoolers. Caregivers pointed out that the packaging of SSBs made them convenient for trips and packing snacks for preschool. Several caregivers felt that a positive aspect of serving SSBs to children is that it keeps children content and prevents them from “acting out.” Other reported advantages of SSBs included the belief that children like the taste and that children felt “special” or “rewarded” when served SSBs. Several caregivers felt that there were no advantages associated with serving preschoolers SSBs.

Normative Beliefs and Referents

Referents, or the individuals or groups, who would disapprove or approve of caregivers serving SSBs to preschoolers, are shown in Table 4. Parents of young children and staff at preschools and daycare centers were perceived as people who would approve of serving SSBs to preschoolers. Several caregivers reported that SSBs were often served at their child's preschool and daycare centers. One caregiver speculated that the “cheap” cost might play a role in preschool staff serving SSBs to children. However, another caregiver credited preschool and daycare staff for making an effort to serve more healthful beverages to children. Caregivers stated that parents of children involved in sports and playground activities would approve of serving SSBs to preschoolers and observed that those parents often provide their children with sports drinks and sugary drinks. Stores and restaurants that sell SSBs emerged as a referent group. There was a general perception that stores and restaurants aggressively marketed SSBs “because they want to make their money.” Several caregivers believed that no one would approve of serving SSBs to young children.

Control Beliefs

Factors that would facilitate or impede caregivers from serving SSBs to preschool-age children are listed in Table 5. Cost was the primary facilitator of serving SSBs to preschoolers. Caregivers expressed a sense of powerlessness concerning the relatively inexpensive cost of SSBs compared to other more healthful beverages. One caregiver explained that juice drinks can be watered down to make them last longer. Taste was identified as a facilitator. Caregivers tended to believe that the sweet taste of SSBs made them easier to serve to preschoolers than more healthful beverages due to the sweet taste of SSBs. Availability at stores, eating out, and children’s persistence were each identified as factors that make it easier to serve SSBs. A general perception among caregivers was that stores aggressively market SSBs.

### Table 4: Salient Referents Regarding Serving SSBs to Preschoolers.

<table>
<thead>
<tr>
<th>Referents</th>
<th>Frequency</th>
<th>Percent</th>
<th>Examples of Participant Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents of young children</td>
<td>10</td>
<td>52.6%</td>
<td>“I know people-parents that love to give it to them.”</td>
</tr>
<tr>
<td>Preschool/daycare staff</td>
<td>7</td>
<td>36.8%</td>
<td>“That’s all she drinks at school.”</td>
</tr>
<tr>
<td>Healthcare professionals (other than pediatrician)</td>
<td>6 *</td>
<td>35.3%</td>
<td>“Even here at the WIC, they even sent out a video about, you know, not giving it, and giving more calcium and not as much fruit and not fruit drinks and sugary drinks and stuff like that.”</td>
</tr>
<tr>
<td>Grandparents</td>
<td>6</td>
<td>31.6%</td>
<td>“My kids’ grandparent[s] they love giving them whatever they want and since they know they don’t get a lot of the sweet stuff with me then they go by grandma and grandpa.”</td>
</tr>
<tr>
<td>No one approves</td>
<td>6</td>
<td>31.6%</td>
<td>“There’s no one I know that would say they would prefer to give children sugary drinks at all.”</td>
</tr>
<tr>
<td>No one disapproves</td>
<td>5 *</td>
<td>29.4%</td>
<td>“You know, I can’t really think of no one like oh, it’s bad to drink.”</td>
</tr>
<tr>
<td>Pediatrician</td>
<td>5 *</td>
<td>29.4%</td>
<td>“Doctors, especially the dentist-they are all against the sugary drinks.”</td>
</tr>
<tr>
<td>Parents of children at sports/ playground activities</td>
<td>5</td>
<td>26.3%</td>
<td>“When you go out to the playgrounds and stuff, you know, where the kids do sports…they serve a lot of that PowerAde and Gatorade stuff.”</td>
</tr>
<tr>
<td>Stores/restaurants</td>
<td>4</td>
<td>21.1%</td>
<td>“They offer what type of drink they want you want to get them, soda, you know, juice. They never offer milk or water. I say give her some water, you know, some water or some milk.”</td>
</tr>
</tbody>
</table>

Note: Responses of two participants were inaudible when asked the question of “who would disapprove of serving SSBs to preschoolers on a daily basis over the next two weeks?”

* Frequency of responses from a total of n = 17 participants.
Caregivers’ Psychosocial Factors

Table 5  Control Beliefs Regarding Serving SSBs to Preschoolers.

<table>
<thead>
<tr>
<th>Control Beliefs</th>
<th>Frequency</th>
<th>Percent</th>
<th>Examples of Participant Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>7</td>
<td>36.8%</td>
<td>“The little bottles of water are higher priced than buying two or three packs of juice drinks, so why do it?”</td>
</tr>
<tr>
<td>Taste</td>
<td>6</td>
<td>31.6%</td>
<td>“They don’t know nothing about the sugar part in it, that’s the thing. It must be their taste buds that trigger that and they know it’s a different taste.”</td>
</tr>
<tr>
<td>Availability at store</td>
<td>5</td>
<td>26.3%</td>
<td>“The stores, whatever they have on their shelves is what they want you to buy.”</td>
</tr>
<tr>
<td>Eating out (fast food/restaurants)</td>
<td>5</td>
<td>26.3%</td>
<td>“I’ll get him a Hi-C or a sweet tea because, like, that’s your choices at a fast-food place.”</td>
</tr>
<tr>
<td>Child persistence/acting out</td>
<td>5</td>
<td>26.3%</td>
<td>“Sugary drinks they, I guess it’ll keep a kid calm cause sometimes...cause if a parent comes home from work, they don’t feel like hearing no whining and crying and alright, here.”</td>
</tr>
<tr>
<td>Child likes water</td>
<td>5</td>
<td>26.3%</td>
<td>“She likes the water and there’s no reason to even start her with too much sugary drinks.”</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>5</td>
<td>26.3%</td>
<td>“If you don’t want to give it to them, then you don’t have to give it to them.”</td>
</tr>
<tr>
<td>Packaging</td>
<td>4</td>
<td>21.1%</td>
<td>“You got to look at the way they have it advertised—the different characters and stuff on the front, I think that’s big on.”</td>
</tr>
<tr>
<td>Child likes milk</td>
<td>4</td>
<td>21.1%</td>
<td>“I’m just saying you know, she’ll, she’ll actually want to have milk.”</td>
</tr>
<tr>
<td>Caregiver milk</td>
<td>4</td>
<td>21.1%</td>
<td>“It’s all about what you’re doing at home.”</td>
</tr>
</tbody>
</table>

by prominently displaying them on shelves. When discussing eating out at fast-food establishments and restaurants, caregivers conveyed the sense that they had little control over which beverages their preschoolers consume. Offering SSBs to calm children who are “acting out” arose as a common practice. Caregivers recounted serving SSBs as a method of controlling negative behavior, particularly after coming home tired after a day at work. Packaging of SSBs emerged as a facilitator. Caregivers explained that SSBs are packaged in a manner that is appealing to children and convenient for “on the go” families. Some caregivers believed that similar packaging for more healthful beverages would influence beverage choices for their children.

Factors that would keep caregivers from serving SSBs to preschoolers included caregivers’ self-efficacy and children’s consumption of water and milk. Caregivers discussed their own sense of personal control and confidence when making dietary decisions for their children. Caregivers believed that preschoolers who “liked” water and milk tended to drink more of those beverages and fewer SSBs. Caregiver modeling of dietary habits arose as both a facilitator and barrier to serving SSBs to preschoolers. Comments revealed the belief among caregivers that their own patterns of beverage consumption influenced the dietary habits of their children.

Recurring Themes
Some overlap existed among salient behavioral, normative, and control beliefs. For example, caregivers cited packaging and taste as both advantages and facilitators of serving SSBs. Stores and restaurants were discussed by caregivers when questioned about people or groups who would approve serving SSBs and factors that made it easier to serve SSBs. Caregivers conveyed the belief that stores and restaurants purposefully marketed SSBs to young children to increase sales. The theme of serving SSBs to children to keep them from “acting out” arose when discussing advantages and facilitators associated with serving SSBs.

Discussion
Research aimed at understanding how families and culture influence the dietary patterns of children has been identified as a priority in the efforts to prevent childhood obesity and to reduce of SSB intake among children (American Dietetic Association, 2008; CDC, 2010; Robert Wood Johnson Foundation, 2009). In fact, the African American Collaborative Obesity Research Network (2011) has advocated for research targeting individual behavioral determinants of SSB purchasing and consumption among non-Hispanic blacks. Although many obeseogenic dietary behaviors among children have been studied, no published research has examined the factors that contribute to caregivers’ decisions to serve SSBs to non-Hispanic black preschoolers. Elicitation interviews guided by the TPB provide insight into caregiver beliefs that drive SSB consumption among young children. Qualitative data generated from elicitation interviews reveals that the decision by caregivers to serve SSBs to preschoolers is influenced by the TPB constructs of behavioral, normative, and control beliefs. Results from this study provide a basis for tailoring culturally appropriate interventions aimed at decreasing SSB intake among non-Hispanic black preschoolers. Furthermore, the findings from this study will be used to develop a quantitative instrument to that will be used in a larger research project.

Physical, behavioral, and social advantages and disadvantages of serving SSBs were identified as behavioral...
beliefs underlying caregivers’ decision-making process. The primary disadvantage associated with SSB intake was hyperactivity. Although previous research does not support a relationship between sugar intake and children’s behavior, evidence does indicate that children’s consumption of caffeine is negatively correlated with average number of sleep hours (Warzack, Evans, Floress, Gross, & Stoolman, 2011; Wolraich, Wilson, & White, 1995). The effects of caffeine derived from SSB consumption on the well-being of children should be further explored. Caregivers were correct to believe that many SSBs are high in sugar content of SSBs. Twelve ounce servings of cola, Hawaiian Punch, and lemonade contain an average of 41, 45, and 33 grams of sugar respectively (Harvard University, School of Public Health, 2009). Concern that about the health risks associated with SSB intake is well-founded. SSB consumption increases the risk for diabetes, dental caries, and kidney problems (Hu & Malik, 2010; Sohn et al., 2006; Vartanian et al., 2007).

Two factors appeared to underlie the belief among that there are no major disadvantages associated with serving SSBs to preschoolers. First, several comments indicated a lack of awareness concerning SSB-related health problems. Second, possible disadvantages associated with SSB intake were considered to be relatively unimportant compared to environmental factors that threaten their children’s well-being. These findings highlight the need to develop a population-specific educational curriculum about the health effects of SSBs.

Use of the TpB to elicit normative beliefs revealed various individualistic and groups (i.e. parents of young children, preschool staff, and stores) that might increase social pressure to serve SSBs. According to Ajzen and Fishbein (1980), individuals consider the normative expectations of others when deciding whether or not to engage in a behavior. Thus, the perception that preschool staff and parents of other young children would approve of serving SSBs to preschoolers may be an important determinant in the decision to serve SSBs to preschoolers. Caregivers perceived parents of children involved in playground sports as being supportive of SSB intake among children. Evidence suggests that children involved in sports do consume higher amounts of SSBs (Nelson et al., 2011). The perception that staff at preschools and daycare centers approve of SSB intake among preschool-age children is supported by previous research which suggests that SSB intake is influenced by the preschool facility that a child attends (Pieper & Whaley, 2011; Vereecken, Huybrechts & De Henauw, 2008). Future research examining nutrition practices at preschools and daycare centers is warranted. Grandparents were among the salient referents that emerged during interviews. However, normative beliefs concerning perceived pressure from grandparents were inconsistent. Future research should further explore the normative expectations of grandparents. Reports of conflict between caregivers and grandparents arose during elicitation interviews. Evidence that minority school-age children tend to more strongly perceive friends and family members as approving of daily SSB intake (Balian, 2009) supports the need for culturally-based educational programs targeting grandparents and other close family members.

According to the TpB, intention and behavior are, in part, determined by the beliefs concerning the presence or absence of factors that increase or decrease an individual’s perceived ability to engage in a specific behavior (Ajzen, 1991). TpB factors that emerged as facilitators and barriers to serving SSBs suggest that individual, familial and environmental determinants underlie caregivers’ decisions to serve SSBs to preschoolers. Findings from this study suggest that cost and taste are major determinants of beverage purchasing patterns among caregivers. In fact, price and taste have been identified as the top driving forces of food purchasing choices at grocery stores (Glanz, Bader, & Iyer, 2012). The sweet taste and relatively inexpensive cost of SSBs have been identified as facilitators of SSB intake among youth in previous studies (Bevan & Reilly, 2011; Grimm et al., 2004; Thompson et al., 2003). Furthermore, a disproportionate amount of money is spent on SSBs among low-income households compared to higher income households (French et al., 2010).

The perception that SSB intake is facilitated by availability of SSBs at restaurants and stores is consistent with the TpB construct of control beliefs in which the perceptions of available resources determines the perception of control over a specific behavior (Ajzen, 1991). Furthermore, this finding is supported by previous research. Evidence indicates that SSB consumption among youth is linked to fast-food consumption, eating out at restaurants, and availability at stores (Ayala et al., 2008; Bowman et al., 2004; Wang, Bleich, & Gortmaker, 2008). This information can be used to support policies aimed at promoting more healthful beverage purchases at stores and restaurants.

A positive finding was that caregivers reported that they were less likely to serve SSBs to young children who preferred milk or water. “Liking” water and milk intake (Keller et al., 2009; McClain et al., 2009) have been negatively associated with SSB intake among youth. Future research should examine the effect of interventions that promote water and milk intake during early childhood on SSB consumption.

According to Ajzen (1991), an individual’s confidence in their ability to engage in a behavior is a determinant of whether or not they perform that behavior. Therefore, it is not surprising that self-efficacy among caregivers emerged as a control belief. Caregivers cited a high level of self-efficacy among as a factor that made it less likely to serve SSBs to young children. Interventional research may aid in determining the effectiveness of measures designed to increase and reinforce caregivers’ sense of confidence when restricting SSBs for children. The belief that caregiver modeling can influence SSB intake among children is supported in the literature. SSB consumption among youth is positively
associated with parental modeling (McClain et al., 2009; van der Horst et al., 2008). These findings reinforce the importance of developing family-based programs aimed at reducing SSB intake.

A major strength of this study was the ability of the TpB to serve as the framework for eliciting important salient beliefs regarding SSB intake among preschoolers. Little is known about the psychosocial factors that drive SSB intake among non-Hispanic black children despite racial disparities in SSB consumption and SSB-related health consequences. Although previous studies have used the TpB to explain SSB consumption among youth, none have specifically targeted non-Hispanic black children, preschoolers, or caregivers of preschoolers. Qualitative data generated from this study provided meaningful insight into the underlying factors that influence SSB intake among young children. Face-to-face interviews allowed the moderator to summarize, clarify and confirm participant responses. Findings from this study can be used to tailor culturally specific family and community based strategies for decreasing SSB intake among non-Hispanic black children. For example, healthcare professionals need to address pressures from social and cultural groups when providing dietary counseling to children and families. Initiatives to increase awareness about the importance of counseling about SSBs among healthcare professionals are supported by evidence that SSB consumption among children decreases when youth and parents receive counseling on the detrimental health effects of SSBs, overweight, and obesity (Doymaz & Neuspiel, 2009).

Findings from this study are limited due to several factors. Use of purposive sampling methods coupled with the requirement that participants be able to read English may result in a study sample that is not reflective of the actual target population. Participation was limited to a small sample of one cultural group and findings cannot be applied to other populations. Despite the small sample size, adequate data saturation was achieved. Only one male participated in the study, therefore the findings reflect a primarily female perspective. Although questions designed to elicit salient beliefs were constructed in accordance with recommendations set forth by Ajzen (2006), the use of open-ended questions to identify salient beliefs generally fail to elicit important affective beliefs (Sutton et al., 2003). Use of the TpB to facilitate thematic coding of data limited the ability to identify factors that drive SSB consumption among preschoolers beyond the constructs of the TpB. Furthermore, it is possible that participant responses were influenced by what they perceived to be socially acceptable responses.

Conclusion

Non-Hispanic black children and adolescents disproportionately consume foods with added sugar, including SSBs (Corwin, Sargent, Rheume, & Saunders, 1999; Reedy & Krebs-Smith, 2010; Storey, Forshee, & Anderson, 2006). The TpB provided an appropriate framework for understanding the salient beliefs that shape SSB intake patterns during the preschool years. Findings from this study underscore that importance for nurses to listen to caregivers about their concerns and pressures when counseling families on nutrition. Nurses must collaborate with caregivers to identify realistic strategies to serve affordable, healthful beverages to children. Both beliefs that have been reported in previous research and beliefs that have not yet been explored were identified by caregivers. Findings from this study generated new knowledge about behavioral beliefs concerning SSB intake among preschoolers such as the disadvantage of hyperactivity and the benefits of convenience and keeping children content. New insight on normative and control factors that emerged include conflict with grandparents, the perception that preschool staff and other parents of young children would approve of serving SSBs to preschoolers, and the belief that serving SSBs will prevent children from acting out. Salient beliefs that arose during this study can be integrated into population-specific interventions aimed at decreasing SSB intake among non-Hispanic black preschoolers in the New Orleans metropolitan area. For example, nurses need to better educate caregivers about the negative health consequences of SSB intake. Interventions aimed at decreasing SSB intake among children should target caregivers, children, grandparents, and preschool staff. Educational interventions need to stress the importance of adult role modeling of healthful dietary habits to children by consuming more healthful beverages, such as water and milk.

References


Hyattsville, MD: National Center for Health Statistics.


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