CAREGIVERS' PSYCHOSOCIAL FACTORS UNDERLYING SUGAR-SWEETENED BEVERAGE INTAKE AMONG NON-HISPANIC BLACK PRESCHOOLERS USING THE THEORY OF PLANNED BEHAVIOR

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SSBs

- Soft drinks
- Fruit drinks, punches
- Lemonade, other “-ades”
- Sports drinks

THE PROBLEM: SSBs and Health

- Weight gain
- Adiposity
- Insulin resistance
- T2D
- Metabolic syndrome
- Hepatic de novo lipogenesis
- Hyperuricemia
- Decreased nutrients
- Kidney stones
- Kidney disease
- Bones
- Blood pressure
- Decreased nutrients
- Dental caries
- Decreased HDL
- Heart disease
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TRENDS IN CHILDREN'S SSB INTAKE

- 61.3%-70% of 2-5 years consume SSBs daily
- 70% Boys and 60% girls ages 2-19 years consume SSBs daily
- 50% of SSB kcal consumed at home
- Higher among non-Hispanic black than non-Hispanic white and Mexican-American children
- Higher among low-income families

PURPOSE

- To determine the relationships of caregivers’ attitude, beliefs, subjective norm, perceived behavioral control and past behavior with intent to serve SSBs to non-Hispanic black preschoolers
  - Using the Expanded Theory of Planned Behavioral as the guiding framework

THEORETICAL FRAMEWORK

- Dietary interventions aimed at youth are most successful when based on behavioral theories.
- Need to understand the mechanisms that motivate people to modify behavior when planning interventions to promote healthy eating patterns.

(Baranowski et al., 1999; Baranowski et al., 2003)
RESEARCH QUESTION

• “What is the relationship between caregivers’ beliefs, attitude, subjective norm, perceived behavioral control, and past behavior with caregivers’ intent to serve SSBs to non-Hispanic black preschoolers?”

STUDY HYPOTHESES

• Behavioral, normative and control beliefs (belief-based measures) will have an indirect effect on caregivers’ intention to serve SSBs to non- Hispanic black preschoolers.
• Caregivers’ behavioral, normative and control beliefs (belief-based measures) will have a direct effect on attitude, subjective norm and perceived behavioral control (direct measures) regarding serving SSBs to non-Hispanic preschoolers.
• Attitude, subjective norm, and perceived behavioral control (direct measures) will have a direct effect on caregivers’ intention to serve SSBs to non-Hispanic black preschoolers.
• Past behavior (direct measure) will have a direct effect on caregivers’ intention to serve SSBs to non-Hispanic black preschoolers.

THEORY OF PLANNED BEHAVIOR RESEARCH

• According To Ajzen (2006), IT IS NECESSARY TO DEVELOP A POPULATION-SPECIFIC INSTRUMENT TO STUDY THE BEHAVIOR OF INTEREST. A small sample of individuals representative of the research population is used to elicit readily accessible behavioral outcomes, normative referents, and control factors

METHOD

• Cross-sectional, correlational study
• Multiple regression with path coefficients
• Relationship of beliefs, attitudes, subjective norm, perceived behavioral control, and past behavior with caregivers’ intention to serve SSBs to non-Hispanic black preschoolers on a daily basis within the next week

STUDY POPULATION (All phases)

• Predominately low-income
• Caregivers of 2-5 year-old non-Hispanic black children
• Speak and read English
• Reside in same household
• Provide household meals
• > 18 years
  Public health clinics, childcare centers, and preschools
PHASE I: ELICITATION INTERVIEWS/INSTRUMENT DEVELOPMENT

- n=19 caregivers
- Semi-structured interviews, small groups
  - Nine questions to elicit salient beliefs, referents, and control beliefs
- Audio-taped interviews transcribed verbatim
- Thematic coding
- 20% inclusion criteria
- Themes ranked
- 100% agreement between PI and CI

PHASE II: PSYCHOMETRIC TESTING

- Content validity
  - N=5 experts
  - Instrument CVI =0.91
  - 5-CVI range 0.8 – 1.0
- Face validity
  - N= 5 caregivers from target population
- Internal consistency
  - N=30
  - Cronbach’s alpha ≥ 0.7 for each direct measure
- Temporal stability
  - N=13 (retest)
  - ICC ≥ 0.5 for direct and indirect measures

SUGAR-SWEETEND DRINK QUESTIONNAIRE (SSDQ)

- 58 items
- 49 items measured concepts related to intention
- 9 demographic items
- Flesch Reading Ease 91.1
- Flesch Kincaid Grade Level 4.3
**PHASE III: MODEL AND HYPOTHESES TESTING**

- **n = 165 caregivers**
- 11 Head Start Centers, Head Start Child Care Partner Centers, private preschools and childcare centers in metropolitan New Orleans area
- Self-administered SSDQ

**Variable** | **Frequency** | **Percent**
---|---|---
Caregiver Age (n=154, mean = 31.33, s.d. = 8.6) | | |
18-29 | 80 | 51.95 |
30-39 | 52 | 33.77 |
40-49 | 15 | 9.74 |
50-59 | 5 | 3.24 |
60-69 | 2 | 1.3 |
Caregiver Gender (n=161) | | |
Male | 14 | 8.7 |
Female | 147 | 91.3 |
Caregiver Race/Ethnicity (n=160) | | |
Black, non-Hispanic | 147 | 91.88 |
White, non-Hispanic | 8 | 5.0 |
Hispanic | 2 | 1.25 |
Other | 3 | 1.88 |
Child Age (n=162, mean= 3.41, s.d. = .84) | | |
2 | 20 | 12.35 |
3 | 72 | 44.44 |
4 | 55 | 33.95 |
5 | 15 | 9.26 |
Child Gender (n=160) | | |
Male | 84 | 52.5 |
Female | 76 | 47.5 |
Preschooler SSB Intake (n=165) | | |
Never | 5 | 3.03 |
less than once per week | 9 | 5.45 |
1 to 2 times per week | 44 | 26.67 |
3-4 times per week | 29 | 17.58 |
5 or more times per week | 21 | 12.73 |
1 to 2 times per day | 36 | 21.82 |
3 or more times per day | 21 | 12.73 |

**PHASE III: DATA ANALYSIS**

- **Zero-order correlation matrix**
  - Measure relationship between an independent variable and a dependent variable with the influence of other variables held constant
- **Multiple regression with path coefficients**
  - Evaluate strength of linear relationship between 2 variables
  - Beta > 0.1 considered significant

**Hypothesis one**

**BEHAVIORAL BELIEFS, NORMATIVE BELIEFS, AND CONTROL BELIEFS WILL HAVE AN INDIRECT EFFECT ON INTENTION-PARTIALLY SUPPORTED**

![Diagram](image-url)
Hypothesis two
Behavioral, normative, and control beliefs will have a direct effect on attitude, subjective norm and perceived behavioral control, respectively—partially supported

Behavioral Beliefs → Attitude
Normative Beliefs → Subjective Norm
Control Beliefs → Perceived Behavioral Control

Hypothesis TWO
Behavioral, normative, and control beliefs will have a direct effect on attitude, subjective norm and perceived behavioral control, respectively—Partially supported

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Hypothesis three
Attitude, subjective norm, and perceived behavioral control will have a direct effect on intention—Partially supported

Attitude → Intention to serve SSBs to preschoolers
Subjective Norm → Intention to serve SSBs to preschoolers
Perceived Behavioral Control → Intention to serve SSBs to preschoolers

Hypothesis three
Attitude, subjective norm, and perceived behavioral control will have a direct effect on intention—Supported based on beta weights. However, PBC was not significantly correlated with intention

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Hypothesis four
Past behavior will have a direct effect on intention—Supported

Past Behavior → Intention to serve SSBs to preschoolers

Hypothesis four
Past behavior will have a direct effect on intention—Supported

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conclusions

- Expanded Theory of Reasoned Action explained 58.7% of variance in intention to serve SSBs to preschoolers
- Past behavior strongest predictor, followed by subjective norm, then attitude
- 35% of caregivers reported serving SSBs daily compared to previous evidence that 61.3% to 70% of 2-5 year-olds consume SSBs daily

Implications for nursing practice and patient education

- Programs aimed at reducing SSB intake needed at individual, family, group and community level
- Clinics and community-based settings
- Develop tool to screen nutrition patterns and SSB intake patterns
- Integrate teaching/screening during health promotion and anticipatory guidance
- Assess individual beliefs and tailor counseling/education accordingly
- Strategies to make water more appealing to young children (fruit slices in water)
- Limit exposure to sweet-tasting food/beverages during early childhood

Recommendations for policy

- Policy and position papers in support of taxes on SSBs
- Regulate availability and marketing of SSBs to children
- Vending machine policies
- Only healthful beverages through SNAP
- Numerous policy changes targeting food industry
- Prohibit licensed childcare sites and preschools in Louisiana from serving SSBs
- Medicaid reimbursement for nutritional screening and counseling
- Restrict sale of SSBs at concession stands/vending machines at parks and playgrounds
- Local media campaigns
- Promote access to fresh drinking water at preschools and childcare centers

Recommendations for nursing education

- Incorporate content on consequences of obesity and obesity-prevention interventions
- Design innovative strategies to promote healthy lifestyle behaviors
- Integrate links between nutrition, health and disease processes throughout curricula
- Community-based practices that include opportunities for nursing students to provide nutritional counseling to children, adolescents and adults
- Educate on the develop of food preferences during early childhood
- Stress importance of addressing not only knowledge, but attitudes and beliefs, when incorporating healthy behavior strategies

Conclusion

- "No major disadvantage" most significant predictor of attitude.
  - Lower level of parental education has been identified as a predictor of soft drink intake among youth
- Other significant predictors of attitude include convenience, contentment, and "liking"
  - Past research reveals that convenience plays role in adult SSB intake and is a determinant of food choices among children
  - Mixed results concerning use of SSBs to control behavior
  - Supports past research that liking the taste of SSBs is a predictor of attitude

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RECOMMENDATIONS FOR RESEARCH

- On-site investigator
- Larger sample with more male caregivers
- Examine influence of caregiver gender and age on constructs
- Expanded TRA with larger sample
- Test effectiveness of interventions developed based on findings

CLOSING

- Focus groups to explore use of SSBs for rewarding behavior and making children “feel special”
- Investigate caregivers’ knowledge of sugar and caffeine content in various SSB products
- Investigate caregivers’ knowledge of SSB-related health problems

- Findings supported utility of constructs of past behavior, attitude and subjective norm in understanding factors that drive caregivers’ decisions to serve SSBs to preschoolers
- Findings did not adequately support constructs of perceived behavioral control or control beliefs
- Findings can be integrated into strategies aimed at decreasing SSB consumption among young children
- Important to tailor interventions for individuals
- “One size fits all” approach should be avoided