Caries Prevalence in Children That Participate in Government Assistance Programs

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Abstract

Purpose: The purpose of this study was to determine if children that participate in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) have higher/lower caries rates when compared to children that do not participate in the government assistance program.*Methods:* An anonymous 9 question survey was given to 70 parents that have children up to the age of 5, who would qualify to participate in The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). The Survey included questions about the child's diet, previous/current dental home, prior knowledge of child caries rate percentage, previous dental emergency visits, and WIC program satisfaction.
Results: There were a total of 70 parent surveys in the study. There were 48 participants in WIC and 22 non participants. WIC participants had a lower caries rate (P<.000), and reported receiving oral hygiene instructions (P<.000). WIC participants bushed fewer times per day (1.79 vs. 2.00), consumed less surgery foods (1.44 vs 1.82), and less sugary beverages (1.58 vs 1.77).
Conclusion: Children that participate in WIC have fewer caries, consume less sugary foods/beverages, but brush fewer times per day than children that do not participate in WIC. Parents that participated in WIC reported receiving oral hygiene instructions and were satisfied with the food/beverage choices that the program provides.

Background

Dental caries is still considered to be the most common chronic disease in children in the United States, even with increased access to oral healthcare and education (1,2). This chronic disease continues to disproportionally affect minority children living in communities where access to healthy food choices may come at a premium (3). More than often, children from low socioeconomic status are not provided with healthy options except when only attending school, which are mandated by state law (4). Most times, children who live in food shortage areas are only able to turn to food options that are cheap and readily available, especially in high density population areas where grocery stores are sparse (3). When a parent can access a grocery store with a higher variety of options, government assistance programs are available in order to aid parents with securing healthier food/beverage choices for their children.

Currently, the U.S. Department of Agriculture runs a federally funded organization called The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). This program provides supplemental foods, healthcare referrals, and nutrition education for low income pregnant, breastfeeding, and non-breastfeeding postpartum women, and to infants and children up to age 5 who are classified as having nutritional risk (5). This food assistance program is widely used by mothers and their infants/children (53% of all infants in US), from low socioeconomic status and continues to be an important recourse for basic nutritional needs (5). Some of the food/beverage choices include milk, cheese, canned fish, yogurt, peanut butter, fruits/vegetable, infant formula, cereal, ect. It is important to note that some food options provided may vary by different state agencies.

A previous study showed that children who are enrolled in WIC had an increased probability of having a dental visit and more likely to use preventative and restorative services, which could lead to improved oral health (7). Another study examined children enrolled in WIC and higher caries rates being associated with childhood obesity (6). Currently, there are no research studies available that exclusively examine caries rates of children who are enrolled in the WIC program.

The aim of this study would be to examine if children up to the age of 5 who participate in WIC have higher caries rates versus children up to the age of 5 who do not participate in the program. This information would be beneficial to the dental community and WIC program officials by better educating patient and parent populations about which foods/beverages available with WIC are less cariogenic for consumption, which could lead to lower incidence of severe early childhood caries. The long-term goal would be for WIC to provide anticipatory guidance about diet and hygiene in coordination with pediatric dentists to endure a brighter future for oral health into adolescence and adulthood.

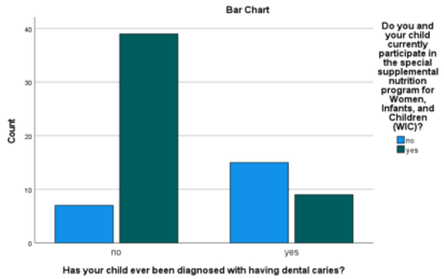
Study Objectives and Purpose

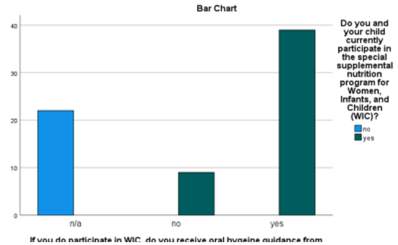
- To assess the overall caries rate in children who participate in the Special Supplemental Nutrition Program for Women, Infants and children (WIC).
- To see if there are higher/lower caries rates in children from different demographics.
- To have pediatric dentists and WIC program directors to work in tandem to educate parents on the importance of ensuring good oral hygiene practices at home and selecting healthy food/beverage options in order to prevent the incidence of severe early childhood caries in kids.

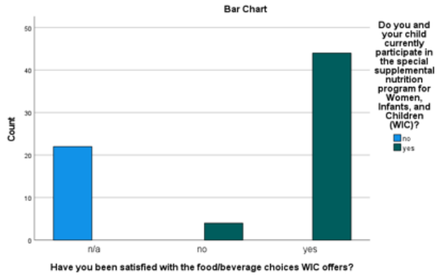
Study Design

Parameters	
Study Design	• Cross-sectional, prospective study paper study • Measures: 9 item survey questionnaire assessing participation in WIC, types/frequency of cariogenic foods the child consumes, and presence of a dental home.
Participants	Parents with infants and children up to the age of 5
Procedures	• The study was conducted during approved IRB time frame of December 2021-June 2022. • Paper surveys given to parents during dental visit with the child
Methods	• Frequency and descriptive statistical analyses were conducted for all study variables. • Chi-square analysis assessed relationships where variables are categorical and correlational analysiswill be used when variables are continuous. • Logistic regression analysis was used to determine best predictors of caries rates and WIC participation
Missing Data	Incomplete data will not be used in this study

Results







Do you and your child currently participate in the special supplemental nutrition program for Women, Infants, and Children (WIC)?	1= YES 2= NO	N	Mean	Std. Deviation	Std. Error Mean
How many times a day does your child brush?	1	48	1.79	0.544	0.079
	2	22	2.00	0.309	0.066
How many sugary foods does your child consume a day?	1	48	1.44	1.147	0.166
	2	22	1.82	0.907	0.193
How many sugary beverages does your child consume a day?	1	48	1.58	1.048	0.151
	2	22	1.77	0.973	0.207

Results

There were 70 total parent surveys collected during this study, 48 were from parents of children that participated in the Special Supplemental Program for Women, Infants, and Children (WIC) and 22 were from parents of children that did not participate in WIC. Children that participated in WIC had a lower caries rate (P<.000), than children that did not participate in WIC. On average, children that participated in WIC brushed fewer times per day (1.79 vs. 2.00), consumed less sugary foods per day (1.44 vs. 1.82), and consumed less sugary beverages per day (1.58 vs 1.77). Of the 48 WIC participants, 39 parents (*P*<.000), reported receiving oral hygiene instructions and 44 parents (*P*<.000), reported being satisfied with the food and beverage choices that WIC offers.

Discussion

From the parent survey responses, it was found that children who participated in WIC had fewer caries, consumed less sugary foods/beverages, but brushed less than children that did not participate in WIC. Parents that have their children enrolled in WIC did report that they received oral hygiene instructions on a regular basis from their WIC representative and reported an overall satisfaction with the food/beverage choices that the WIC program provides. There were no significant statistical findings in children that did participate in WIC vs children that do not participate in WIC when it came to having a regular dental home and number of emergency dental visits.
Even though there were some significant findings in this study, special consideration should be given to there being a higher amount of WIC participants vs non-WIC participants (48 vs. 22). Other considerations that should be made are that some parents may be poor historians when it comes to their child's overall dental health, parent's inflating responses based on stigma from participating in government assistance programs, and being unable to include a clinical exam to assess overall caries percentage due to liability during this stage of the research. Going forward, it would be advantageous for the study to add an exam and x-ray component, include a WIC participation question during patient registration, and to include participants from diverse socioeconomic status. Overall, this study shows that pediatric dentists and WIC program representatives can coordinate together to play a major role in aiding parents with young children in making better food/beverage choices, which can help lower the chance of developing caries.

Conclusion

1. Children that participated in WIC had fewer caries than children that did not participate in WIC.
2. On average, children that participated in WIC consumed less sugary foods and beverages than children that did not participate in WIC.
3. On average, children that did not participate in WIC brushed more times per day than kids that did participate in WIC.
4. Parents that did utilize WIC for their children did report a high level of satisfaction from the program and on average, did report a high percentage of receiving oral hygiene instructions from their WIC

References