

Introduction

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 disproportionately 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 is 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.

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.

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.

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.

Method

The study design is a cross-sectional prospective study, that consisted of 12 question survey, that was given to 75 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, oral hygiene, prior knowledge of child caries rate percentage, previous dental emergency visits, and WIC program satisfaction. The questionnaire collected data related to participants' participation in the WIC (Women, Infants and Children) Program, frequency consumption of Sugary foods and beverages, OHI guidance in the WIC program and presence of dental caries by parent and Dentist. The Institutional Review Board of One Brooklyn Health reviewed the study and approved the conduct of this research. The collected data was analyzed by a statistician according to accepted statistical methodology. Frequencies and descriptive statistics were used to analyze the data.

Results

- 75 responses were received.
- 39 were from parents of children that participated in the Special Supplemental Program for Women, Infants, and Children (WIC) and 36 were from parents of children that did not participate in WIC.
- Children that participated in WIC had a lower caries rate ($P < .251$), than children that did not participate in WIC. On average, children that participated in WIC brushed fewer times per day, consumed less sugary foods per day ($P < .596$), and consumed less sugary beverages per day ($P < .040$).
- Of the 39 WIC participants, 7 parents ($P < .928$), reported receiving oral hygiene instructions and 30 parents ($P < .928$), reported not receiving oral hygiene instructions
- The frequency distribution graphs for survey responses are shown in Figures 1-4.

Results

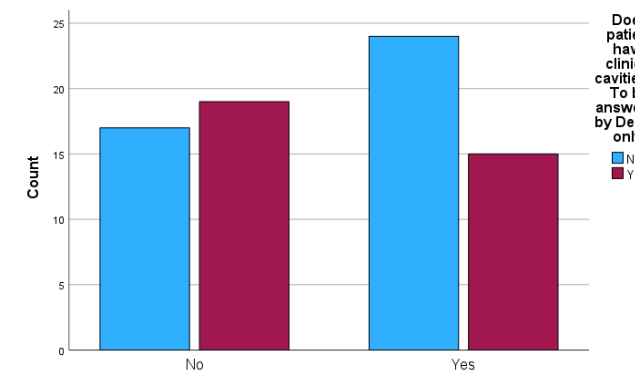


Fig 1: Do you and your child currently participate in the special supplemental nutrition program for women, infants, and children (WIC)?

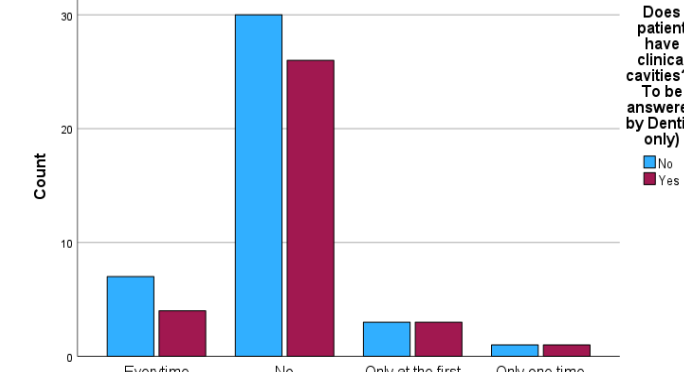


Fig 2: If you do participate in WIC, do you receive oral hygiene guidance from your WIC representative?

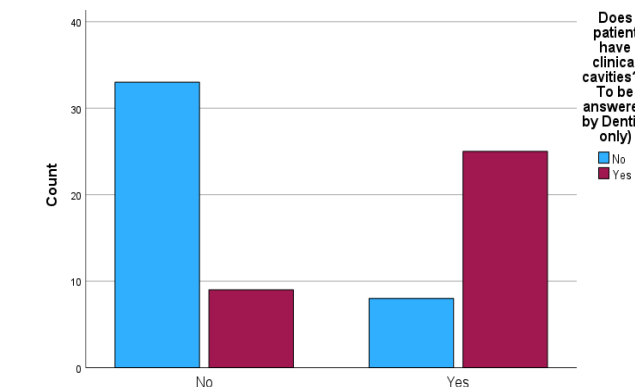


Fig 3: Has your child ever been diagnosed with having dental cavities?

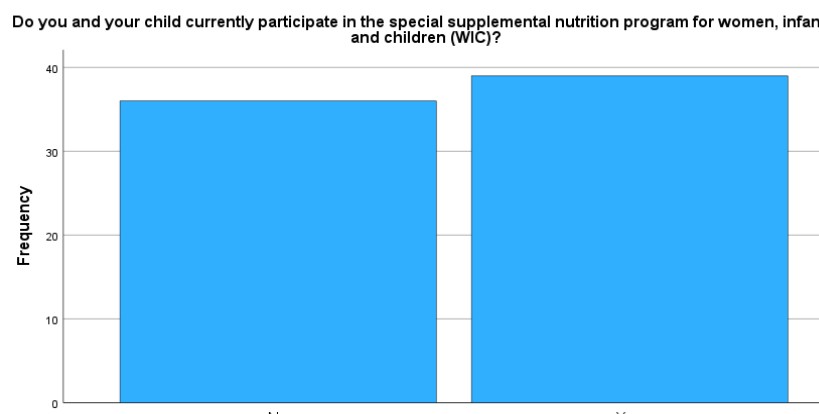


Fig 4: Do you and your child currently participate in the special supplemental nutrition program for women, infants, and children (WIC)?

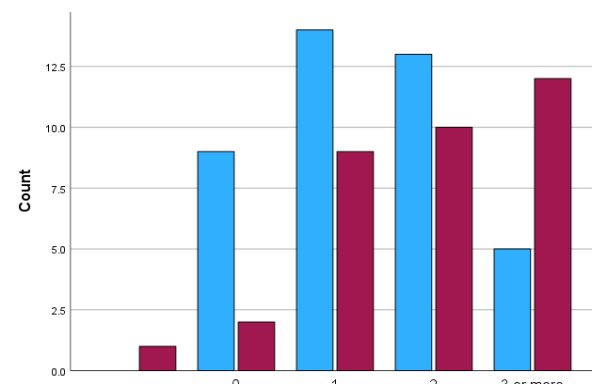


Fig 5: How many sugary beverages does your child consume a day?

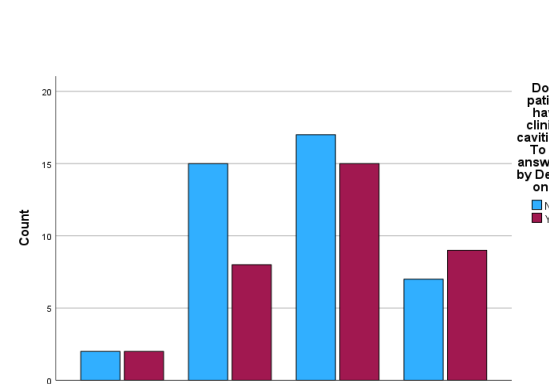


Fig 6: How many sugary foods does your child consume a day?

Discussion

The Survey results show from the parent survey responses, that 39 parents from the 75 participants are currently enrolled in the WIC Program (Fig:4). It was also found that children who participated in WIC had fewer caries than those who did not (Fig 1). The children who participated in WIC consumed less sugary foods/beverages but brushed less than children that did not participate in WIC but also had fewer cavities than the children who did not participate (Fig:5 & Fig:6). These results show that the nutrition program provided by WIC has a healthy diet which reduces the incidence of cavities by limiting the sugary food and beverages available.

Parents that have their children enrolled in WIC did report that they have not received oral hygiene instructions on a regular basis from their WIC representative (Fig:2) 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 (39 vs. 36). 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 responses based on stigma from participating in government assistance programs. However being able to include a clinical exam to assess overall caries compared to parent's response showed that parents can be poor historians. Going forward, it would be advantageous for the study to include WIC participants to study in order to increase Oral hygiene instructions during WIC visit.

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.

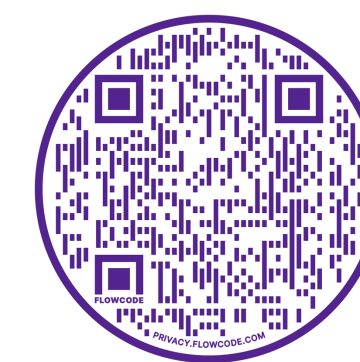
Conclusion

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 low percentage of receiving oral hygiene instructions from their WIC
5. A limitation in this study is 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.
6. Parents may have also skewed their answer choice of WIC vs Non-WIC to gain providers approval based on which ever they thought was best

References



Survey



References