Primary Children's Hospital

Parental Knowledge and Dietary Impact on Dental Health

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No conflicts of interest to disclose.

Background

The caries disease process affects many children contributing to pain, missed school and work, emergency visits, and diminished health. Worldwide, the pervasiveness of caries in children is high in both primary and permanent dentition at 46% and 53%, respectively.[1] The AAPD recommends establishing a dental home by 12 months of age to receive dental health education and promote prevention. Parents receive information from a variety of sources including their pediatrician, the internet, family, parenting books, and schools. Is the timing and source of information consistent and accurate for the development of dental caries and does it translate to daily practices within the home?

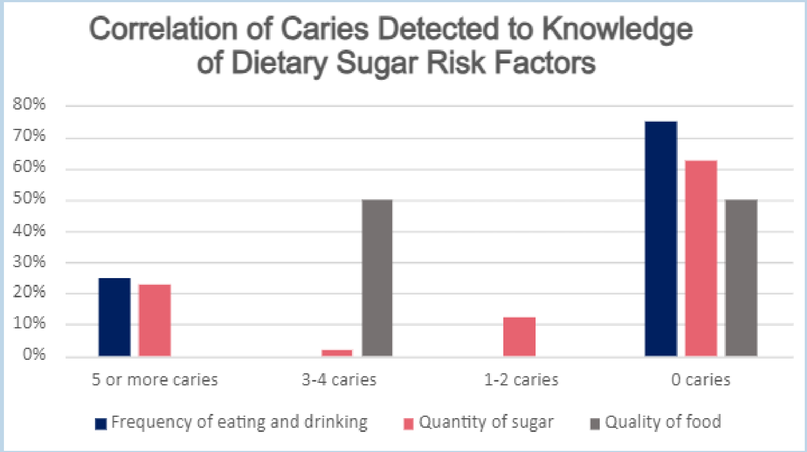
This education is important because caries is a multifactorial disease, with several modifiable factors patients that parents can directly influence, including oral hygiene, fluoride use, and dietary exposure to fermentable carbohydrates. As it relates to diet specifically, the AAPD's Policy on Dietary Recommendations for Infants, Children, and Adolescents advocates for avoiding added sugars to the diets of children under age two, encouraging eating non-sweetened and nutrient-dense snacks, and establishing healthy beverage habits before age five - primarily drinking fluoridated water.[2] Unfortunately, in children 2-5 years of age, 44% consume a sugar sweetened beverage (SSB) every day.[3] Because parents and caregivers generally have control of what their children eat or drink, their knowledge of how diet impacts dental health plays a key role in caries risk. Previous studies have investigated parental knowledge of certain foods, but many of the children have been older, in a school setting, or have focused more on parental knowledge of oral hygiene practice.

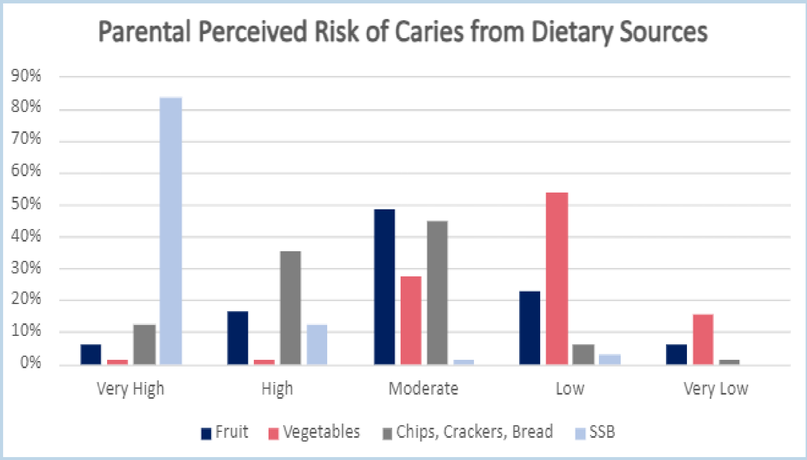
Purposes

- Identify sources and timing of parental knowledge and its correlation to dental caries
- Assess the resulting dietary habits with incidence of dental caries
- Correlate parental knowledge with actual dietary practices

Methods

- The study population included parents and caregivers of children presenting for a new patient dental exam, 4 years or younger, and classified as ASA 1 or 2 at Primary Children's Hospital dental clinic and community based pediatric dental private practices.
- Consent was obtained and the survey responses were confidential and no personally identifiable information about the parents or their child was shared or linked to their answers.
- The survey included questions regarding their source of dietary information, understanding of diet and dental health, their child's nutritional habits, and population data (race/ethnicity and income level). Following completion of the new patient exam, the dentist recorded the child's age, health status, and DMFT.
- 67 surveys were collected. Answers were reviewed for correctness and level of health literacy and then compared to the number of caries diagnosed at the end of the exam. Each survey received a dietary knowledge score and a dietary habits score. Utilizing the data collected, descriptive statistics and comparisons were made to identify relationships between oral health education, dietary practices, and risk of dental caries.





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Results

- 83% of parents believe quantity contributes more to dental caries risk than frequency of sugar intake. However, of those who selected frequency as the highest risk factor, 75% of their children exhibited no carious lesions as opposed to 63% of respondents who selected quantity of sugar, and 50% of those who selected quality of food, a statistically significant difference in caries rates (p=0.02).
- No other questions regarding parental knowledge or the child's dietary habits produced a significant difference in the number of caries observed. Furthermore, when composite knowledge and habit scores were compiled and compared to the caries detected, there was no statistical difference.
- A one-way analysis showed there is a significant difference in knowledge score based on bottle feeding habits at night (p=0.016). People who gave their child a bottle at night until 6 months had a significantly higher average knowledge score than people selecting no bottle at night, until 12 months and greater than 12 months. There was no significant difference in the knowledge score between parents selecting other amounts of time bottle feeding their child.
- 40% of children were 13-24 months at their first dental visit, while only 19% established a dental home at recommended time of 0-12 months.
- 95% of parents thought that SSBs have a high to very high risk of causing dental caries, yet 73% of children receive these beverages anywhere from one to five times per day.
- Parents overwhelmingly thought that dietary information should come from pediatricians and dentists.

Conclusions

Most parents believe they have a good understanding of the impact of diet on dental health. Data from this study indicates a correlation between parents understanding the impact of frequency of consuming fermentable carbohydrates and DMFT scores, yet no other knowledge or habit questions produced a significant impact on the child's caries risk at the first dental exam. This further underscores the multifactorial nature of dental caries. Other descriptive information from this study includes the heavy reliance on pediatricians and dentists for dietary information. When discussing dietary habits with parents, it is important to emphasize the role frequency of ingesting food and drink plays in the caries disease process.