



Introduction

Dental caries is the most common chronic childhood disease in the United States and a major public health concern, particularly among low-income children. While preventable, untreated decay can lead to pain, infection, disrupted sleep and nutrition, missed school, and the need for complex treatment. Interventions targeting vulnerable populations, such as those served by Head Start, offer the greatest potential for impact. However, recent reports indicate that fewer than 50% of Head Start children receive education on preventive oral and medical health, highlighting a substantial gap in early health promotion efforts. Early childhood educators, as trusted figures in children’s lives, can serve as powerful oral health advocates and help fill this gap when properly trained. This study aimed to evaluate the efficacy of a 45-minute dental education program in enhancing early childhood educators' self-reported knowledge, attitudes, and confidence in discussing oral health topics.

Methods

Surveys were administered to groups of Head Start preschool educators before and after a structured oral health presentation, which was delivered by a dentist either in-person or virtually. Each survey consisted of 19 questions (rated on a 5-point Likert scale) designed to assess participants' self-perceived knowledge, views, and comfort level in discussing oral health with families. One-tailed independent t-tests with Bonferroni correction were conducted to identify significant increases in scores following intervention.

Figure 1: Sample presentation slide



Figure 2: Sample survey questions

SAMPLE SURVEY QUESTIONS	
Oral health knowledge	
How much knowledge do you have about what to do if a child has a toothache?	
How much knowledge do you have about what to do if a child has a dental injury?	
How much knowledge do you have about what untreated dental disease looks like?	
Comfort with discussing oral health topics	
How comfortable are you with discussing a child's oral health issues with a parent/caregiver?	
How prepared are you to give advice about the importance of tooth brushing?	
How prepared are you to give advice about the importance of a healthy diet on oral health?	
Attitudes towards oral health	
Poor dental health can affect a child's quality of life and overall health.	
Children from low-income families or underrepresented minority groups have more dental health problems.	
I am motivated to help students improve their dental health	

Results

Aggregate data from 100 participants (92 completed both pre- and post-intervention surveys; 89 answered all survey questions) revealed statistically significant improvements ( $P<.002$ ) in 16 of 19 survey questions. When results were stratified by presentation setting, significant improvements ( $P< .002$ ) were noted in 15 questions for the in-person group and 11 questions for the virtual group. Three questions related to oral health attitudes showed no significant change, with exceptionally high scores both before and after intervention.

PRE-SURVEY	POST-SURVEY
n total = 100	n total =92
n in-person = 54	n in-person = 54
n virtual = 46	n virtual = 38

Figure 3: Total participants in virtual only, in-person only, and combined pre-survey and post-survey groups

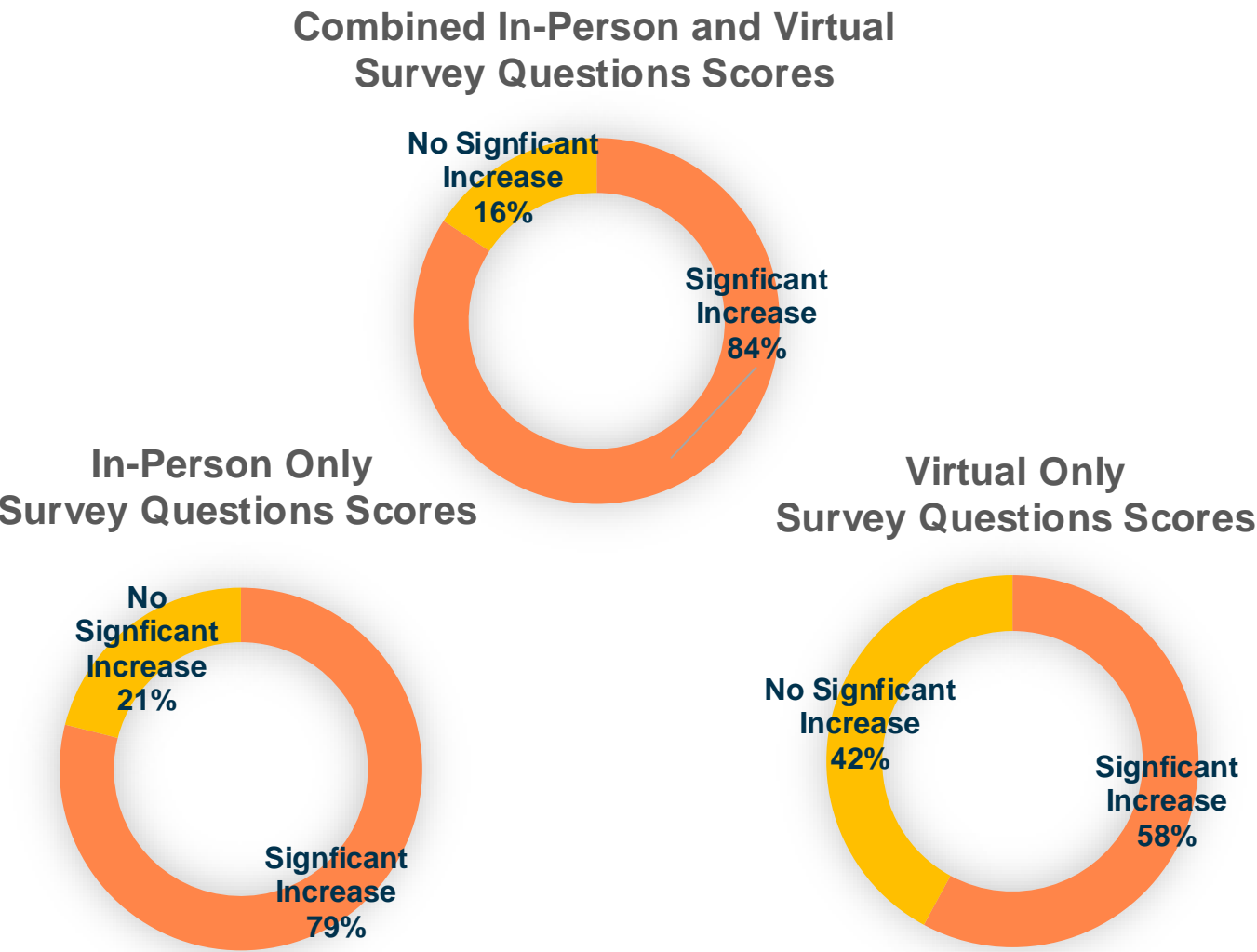


Figure 4: Graphs representing the percentages of survey questions with significant versus no significant increases in scores after the dental education presentation in virtual only, in-person only, and combined groups.

Discussion

This study demonstrated the program’s positive impact on participants’ self-perceived knowledge and comfort in discussing oral health topics. The in-person format showed greater improvements, likely due to higher engagement. However, the virtual format still yielded significant gains in over half of the survey items and provided access to educators who were geographically remote or had scheduling barriers. The three questions with no significant increases had high baseline scores, suggesting pre-existing positive oral health attitudes. Participant feedback supports adding more specific presentation examples and distributing summary flyers to reinforce key messages.

To strengthen future evaluations, pre- and post-surveys should be assigned matching IDs to identify pairs and exclude pairs with incomplete responses—allowing for paired t-tests. Strategies such as reminding participants to complete all pages and favoring in-person formats, when possible, may reduce dropout and incomplete data rates. Additionally, objective knowledge questions directly tied to presentation content should be included.

Though the short-term outcomes are promising, follow up studies are needed to assess its long-term impact. Periodic reinforcement may be essential for sustained benefits. As early childhood educators engage regularly with children and families, empowering them as oral health advocates could significantly improve outcomes in underserved communities.

Conclusion

Participants consistently showed a strong commitment to advancing students' oral health and recognized its importance for overall well-being. The program significantly enhanced their knowledge and confidence in discussing oral health with families. In-person delivery showed greater gains, but virtual options remain valuable for accessibility. By empowering educators to identify early oral disease and promote prevention, the program holds promise for improving children's oral health outcomes in vulnerable communities.

References

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