

# The effectiveness of an informational video in changing sugar sweetened beverage consumption habits.



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## INTRODUCTION

In 2020, about 20% of US children and adolescents between the ages 2-19 were estimated to have obesity.<sup>1</sup> As a result, these patients are at a higher risk for developing conditions such as high blood pressure, high cholesterol, type 2 diabetes, asthma, sleep apnea, and joint problems. <sup>1</sup> This costs the US healthcare system approximately \$173 billion a year.<sup>2</sup> Obesity remains a major preventable health concern that requires more effective interventions.

While the WHO recommends that no more than 5% of total energy comes from added sugar, about 66% of if school-aged children in California are consuming at least one sugar sweetened beverage (SSB) each day.<sup>3</sup> SSB intake contributes to many preventable health conditions including dental caries, obesity, and type 2 diabetes.<sup>3</sup> One intervention to address SSB consumption is to displace them with nutrient dense beverages, such as plain dairy milk, that provide children a source of calcium, potassium, and vitamin D.<sup>4</sup>

Environmental conditions and familial behavior can influence the child's behaviors and attitudes surrounding SSBs. Eck et al noted a positive correlation between parent and child SSB consumption and that availability at home appears to facilitate intake.<sup>4</sup> Additionally, lack of knowledge of the school food environment was found as a barrier to limiting SSB intake.<sup>4</sup> Parents are the food gatekeepers of the house and education about their children's nutritional requirements and the deleterious effects of harmful items is of the utmost importance.<sup>5</sup>

## PURPOSE

The primary objective of this study is to determine the usefulness and likelihood of caregivers sharing a multi-generation multi-lingual information video regarding the harmful effects of sugar sweetened beverages (SSBs) and alternatives to SSBs.

## METHODS

**Survey Participants:** Caregivers (18+) of pediatric patients that are:

- ages 0-12 years of age
- BMI >85% and/or have a history of dental caries diagnosis
- ASA I or ASA II mild asthma

**Procedure**  
Participants were asked to watch a 4-minute informative video that highlights the harmful effects of sugar sweetened drinks on oral and overall health and offers alternatives The video was distributed via a QR code found on a pamphlet. After watching the video participants completed a two-part survey to evaluate pediatric patients' current use of sugar sweetened beverages and their caregivers' likelihood to change their consumption habits. Additionally, the survey evaluated the video usefulness, the likelihood of sharing the video, with whom they would share it, and existing barriers to changing consumption habits.

**Statistical Analysis**  
Data was collected in RedCap (NYU Langone Hospital in New York). Analysis of responses was completed with significance level set  $P=0.05$ .

Figure 1. Survey participants by relationship to child

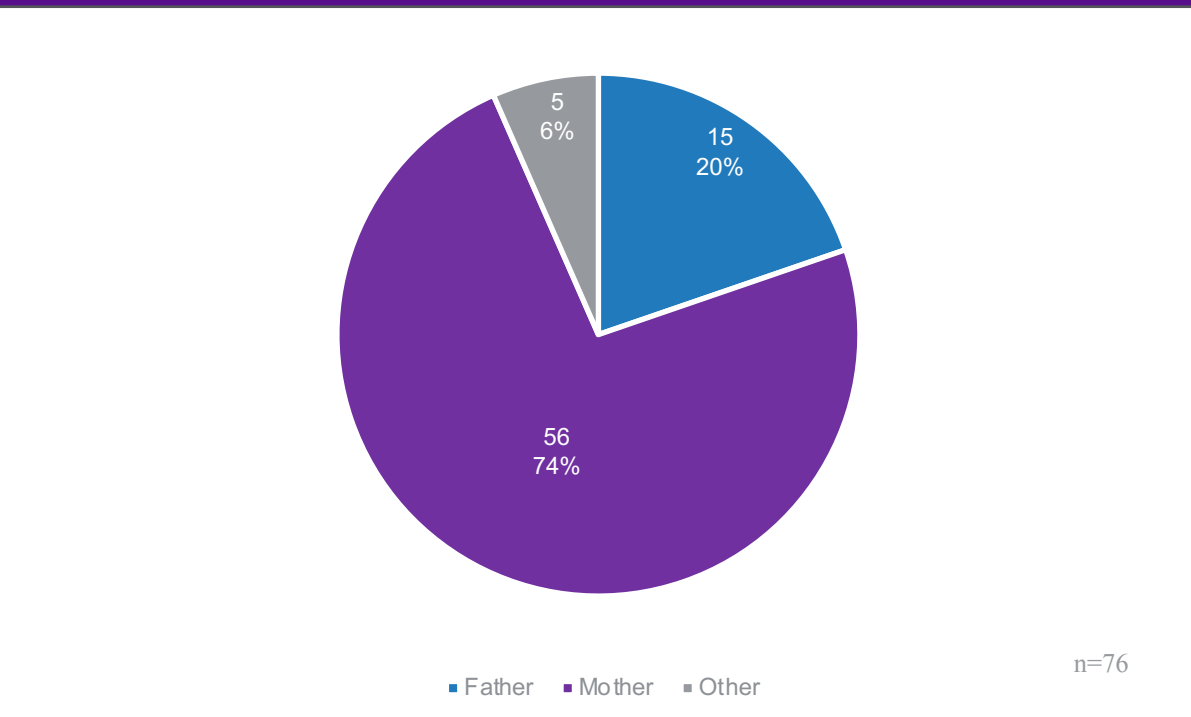


Figure 2. Usefulness of video

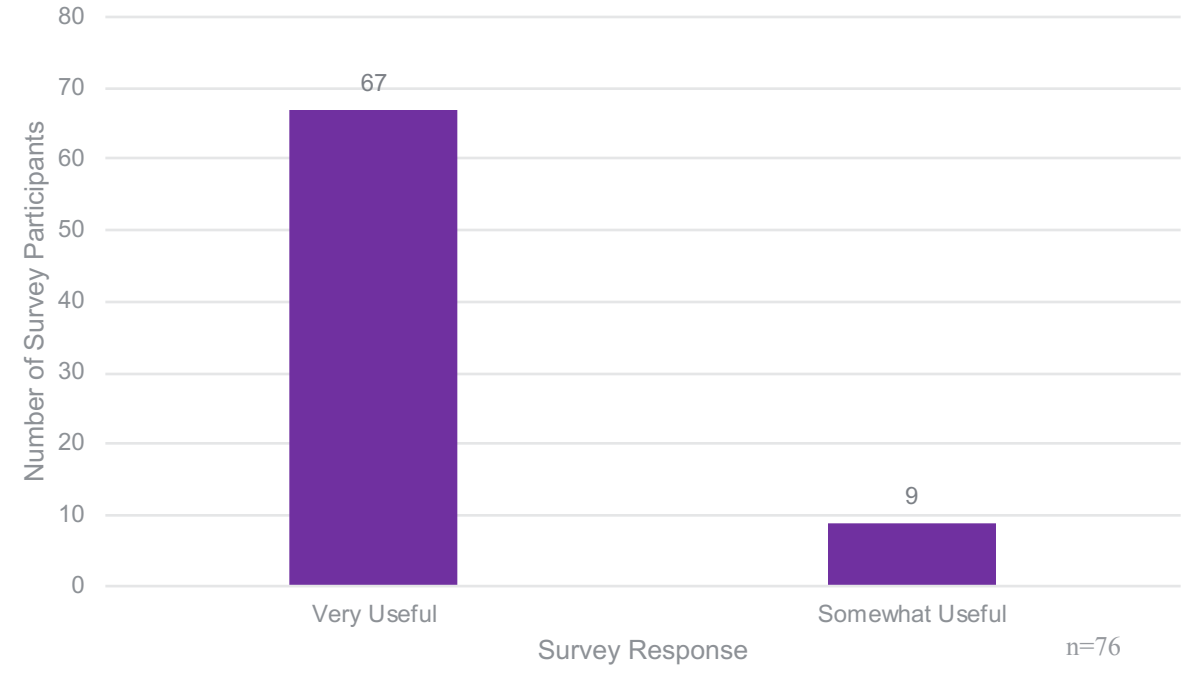


Figure 3. Likelihood of implementing recommendations.

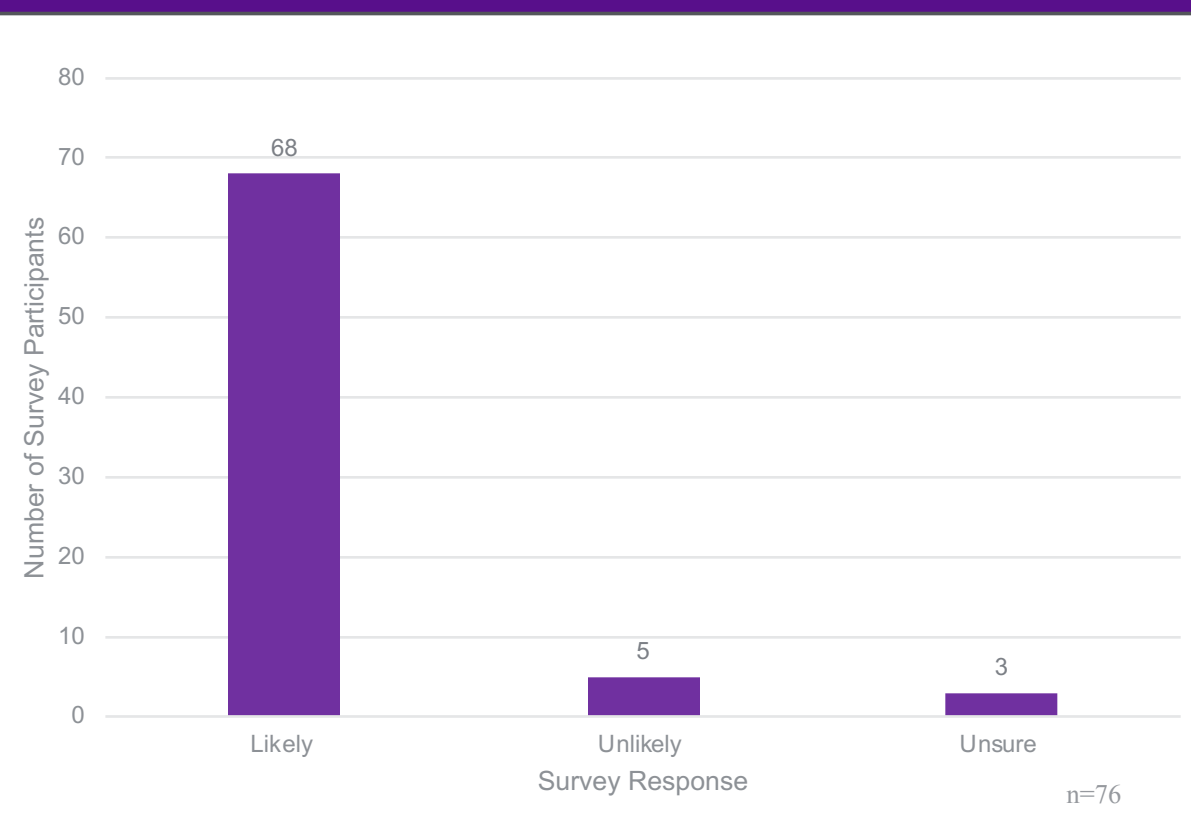


Table 1. Video usefulness compared to other variables.

Variable	P-value
Age	0.976
Relationship	0.025
Likelihood of decreasing SSBs consumption	0.033
Likelihood of decreasing juice consumption	0.004

Table 2. Likelihood of decreasing SSBs compared to other variables.

Variable	P-value
Age	0.523
Relationship	0.034
Video Usefulness	0.033
Likelihood of Sharing Video	<0.001

Figure 4. Personnel with whom caregivers wanted to share video.

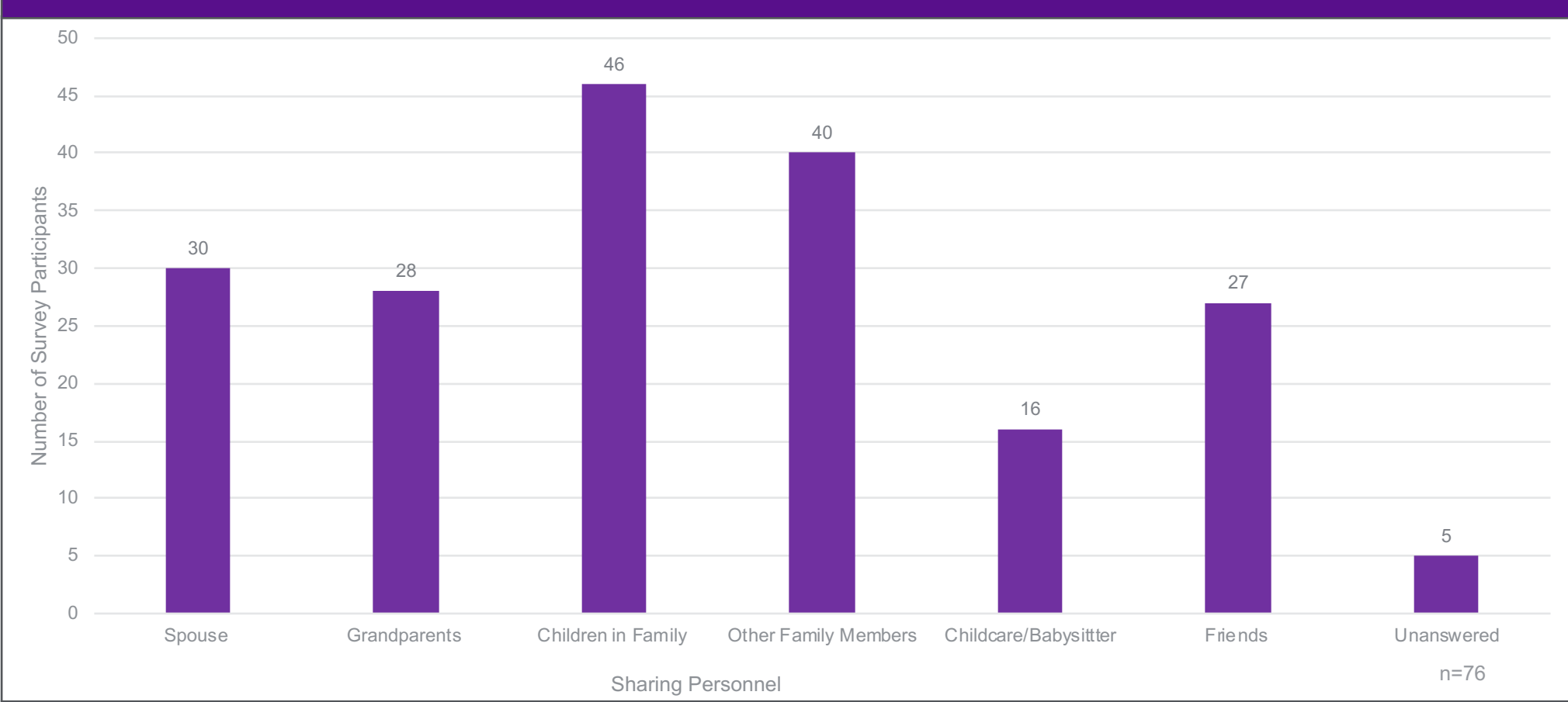


Figure 5. Barriers to implementing video recommendations.



## REFERENCES & ACKNOWLEDGEMENTS

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## RESULTS

- There were a total of 76 survey participants with 73.7% completed by mothers (Figure 1).
- Pediatric patients had a mean age of 7.87 (SD 2.56).
- With respect to daily SSB intake, 11 (14.4%) reported 0 beverages/day, 62 (81.6%) reported 1-3 beverages/day, and 3 (3.9%) reported 4-5 beverages per day.
- With respect to daily juice intake, 18 (23.6%) reported 0 beverages/day, 55 (72.4%) reported 1-3 beverages/day, and 3 (3.9%) reported 4 beverages/day.
- 74 (97.4%) participants reported the length of the video was just right.
- After watching the video, 58 participants (76.3%) and 53 participants (69.7%) reported they were very likely to decrease consumption habits of SSBs and 100% juice, respectively.
- Children in the family were the most common personnel with whom participants wanted to share the video, with 46 survey participants (60.5%) followed by other family members (40 responses, 52.6% ), and friends (27 participants, 36.5%) (Figure4).
- The most frequently reported barrier was related was the inability to prevent other caregivers from providing SSBs and juice (Figure 5).
- There was a statistical significance in video usefulness when compared to relationship ( $P = 0.025$ ), likelihood of decreasing SSB consumption ( $P = 0.033$ ), and the likelihood of decreasing juice ( $P = 0.004$ ); but no significance when compared to age ( $P = 0.976$ ). (Table 1).
- There was a statistical significance in the likelihood of decreasing SSBs compared to relationship ( $P = 0.034$ ), likelihood of sharing video( $P < 0.001$ ), and video usefulness ( $P = 0.033$ ); but no significance when compared to age ( $P = 0.523$ ) (Table 2).

## DISCUSSION

- The results of this study demonstrate that a 4-minute video may be useful tool in disseminating information about the harmful effects of sugar sweetened beverages and juice to caregivers of ASA I and II pediatric patients with a history of high BMI and dental caries.
- A significant strength of the study is that all survey participants found the video useful and identified the individuals with whom caregivers wanted to share the video. This highlights how informational pamphlets can be used in a pediatric dental setting and be made available for distribution to others that are directly or indirectly involved with they patient’s beverage intake.
- This study also identified common barriers to implementing the recommendations of the video, with “the inability to prevent other caregivers from providing these beverages” and “I, or other family members, drink these types of drinks and therefore, I need to keep buying them” the most commonly reported. This is consistent with previous research that identifies the parent or caregiver as the food gatekeeper of the house.
- Helping caregivers inform other individuals involved in their child’s care about the harmful effects of SSBs and juice may help with decreasing not only the child’s caries risk, but also risk for metabolic conditions such as obesity and diabetes. In the dental context, this is significant in the management of pediatric patients that require sedation to complete their treatment.
- A significant limitation of this study is the low sample size, which is associated with: (1) caregivers uninterested in completing a survey during their child’s dental appointment, (2) difficulty conducting a survey study without the use of supportive administrative and clinical staff, and (3) a change in the electronic medical record system at San Ysidro Health during the study that significantly influenced daily operations. A larger sample size with equal distribution of types of caregivers may allow for more conclusive trends.
- Another limitation of the study is that a survey design provides only a snapshot of what caregivers choose to report as their thoughts and intentions, which may not always be accurate. Further, without the ability to follow up after the caregivers watch the video (i.e. 3, 6, 12 months) the long-term success of implementing behavioral change cannot be identified. Future studies that incorporate multiple questionnaires about beverage intake and follow up for longer periods of time can provide more information on the video’s effectiveness.