



Children's National

# Improvement of Self-Management Goals of Dental Caries through Image Depiction: A Descriptive Study

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## Background

Per WHO Global Oral Health 2022 status report, 514 million children suffer from caries of primary teeth globally with nearly one in five children under the age of 5 having experienced dental decay<sup>1</sup>. Dental decay is not an equal opportunity disease with children living in poverty being twice as likely to suffer tooth decay<sup>2</sup>. Prevention and management of dental caries are dependent on a clear understanding of the dynamics of the multifaceted variables that determine not only the initiation of the disease but also its course over an extended period<sup>1</sup>.

Pediatric dentists and general dentists have a critical role in preventing and reducing the severity of childhood caries. Several techniques and therapies have proven to improve self-management of caries such as: caries risk assessment, diet counseling, and motivational interviewing<sup>3</sup>. The utilization of a motivational interviewing approach empowers clinicians to establish counseling objectives while recognizing and investigating the diversity in individuals' dedication to and enthusiasm for altering their behavior<sup>3</sup>.

## Objective

This quality improvement project aims to enhance the tools utilized for self-management of caries and empower parents with complete autonomy in decision making regarding their child's oral care at home.

## Methods

This is a project undertaken as a Quality Improvement Initiative at Children's National Hospital and it does not constitute human subjects research, as such it was not under the oversight of the Institutional Review Board.

This QI project involved development of a dental specific image chart demonstrating self-management caries goals including routine preventative exam, healthy diet options, drinks/foods to avoid, and OH instructions. The image chart shown was developed by the CNH dental department with hopes to then be modified as needed based on recommendations from current residents and faculty. A survey with images was emailed to residents and faculty with anonymous responses. A protocol and establishment of for the implementation of the caries self-management image chart during anticipatory guidance was then developed.

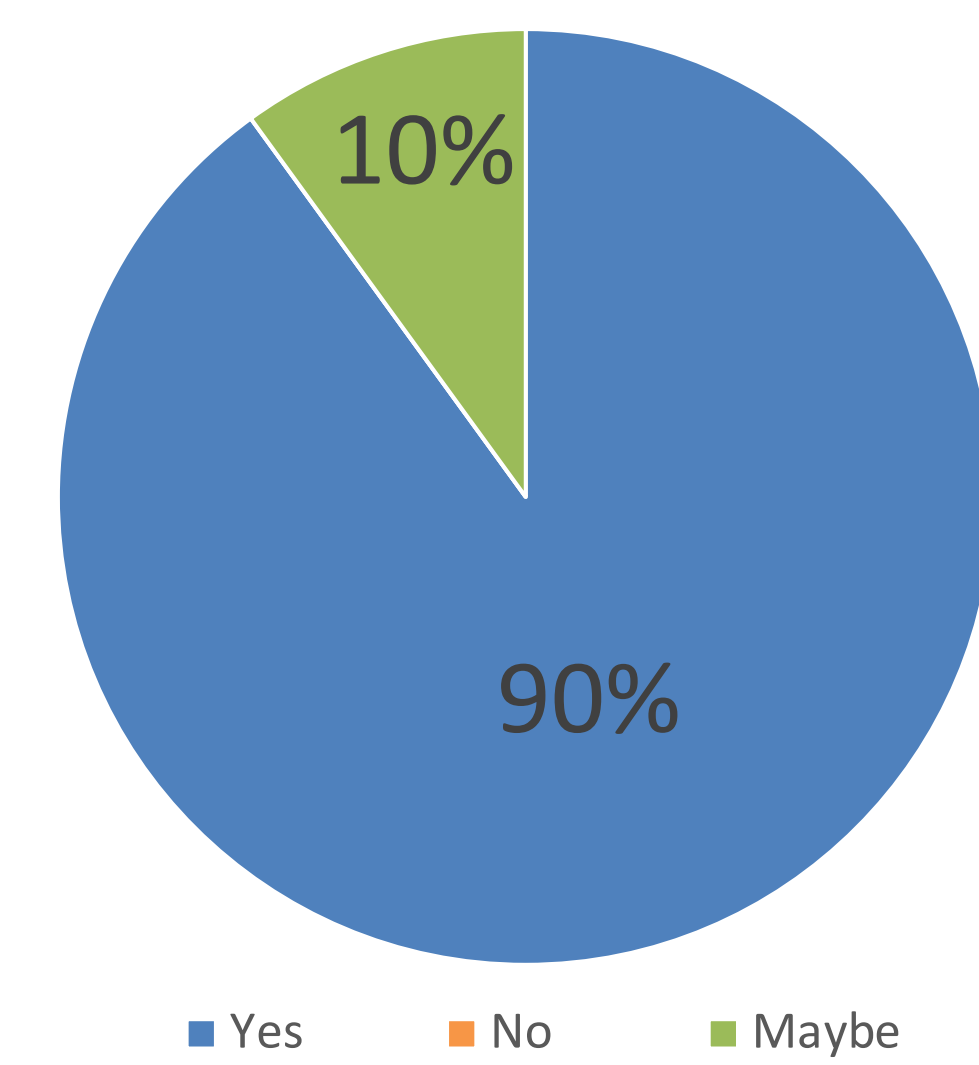
## Results

- A survey along with picture diagram was given to colleagues for feedback.

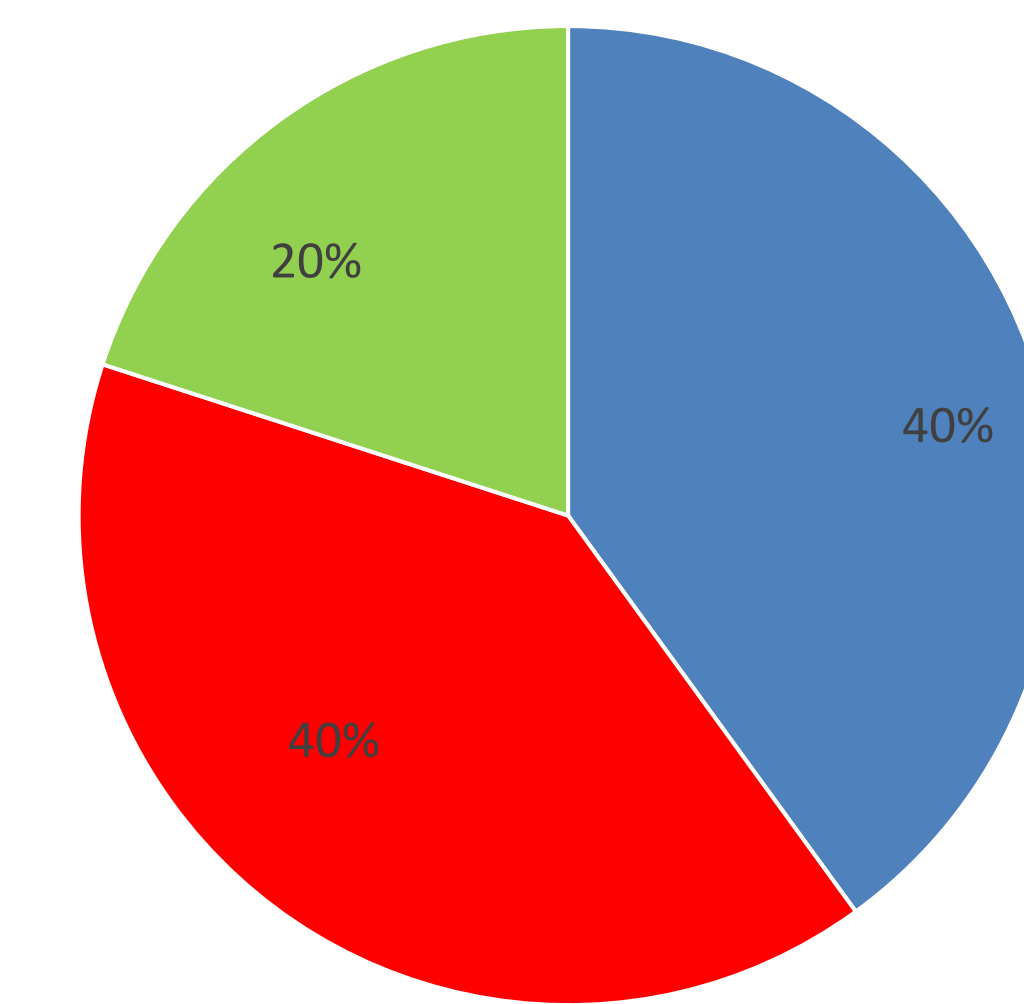


Figure 1. Image depiction for motivational interview

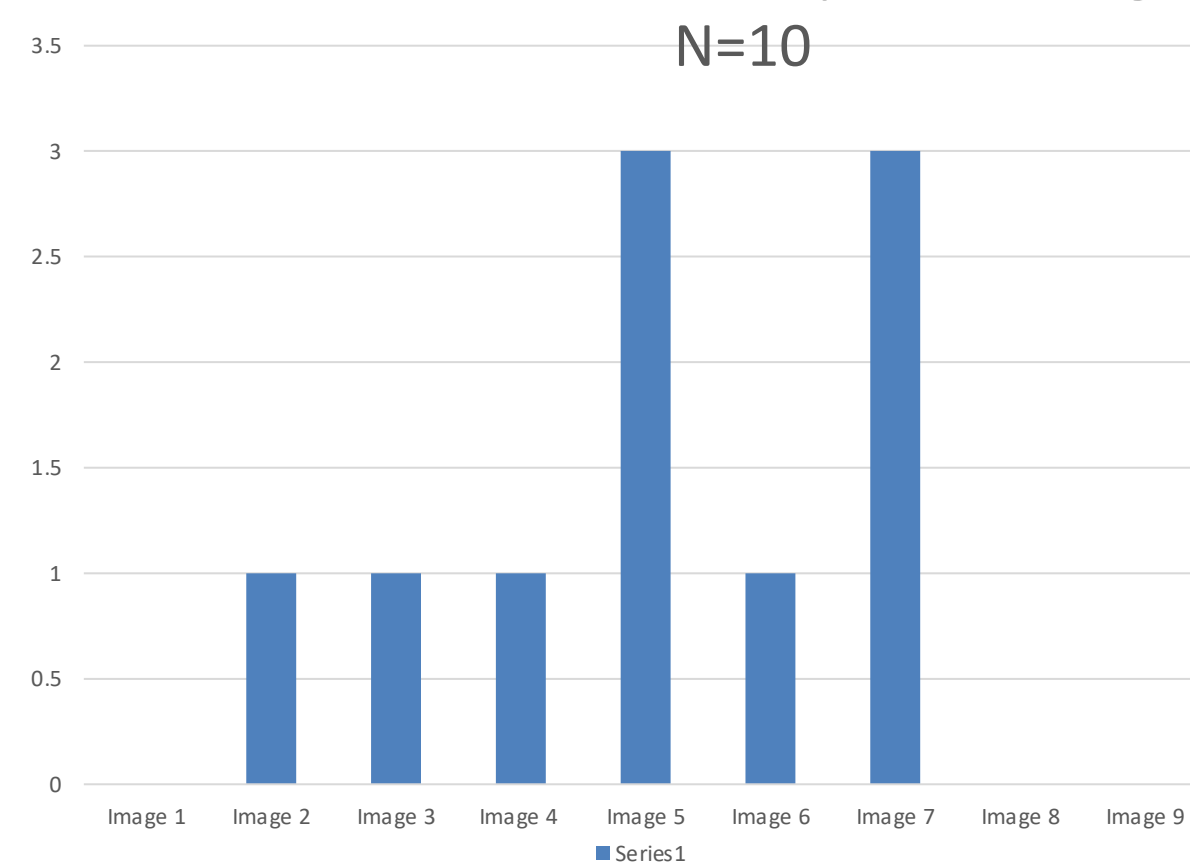
Would you prefer to have a separate image chart for different age groups and medical conditions? (e.g., adolescents, special health care needs...) N=10



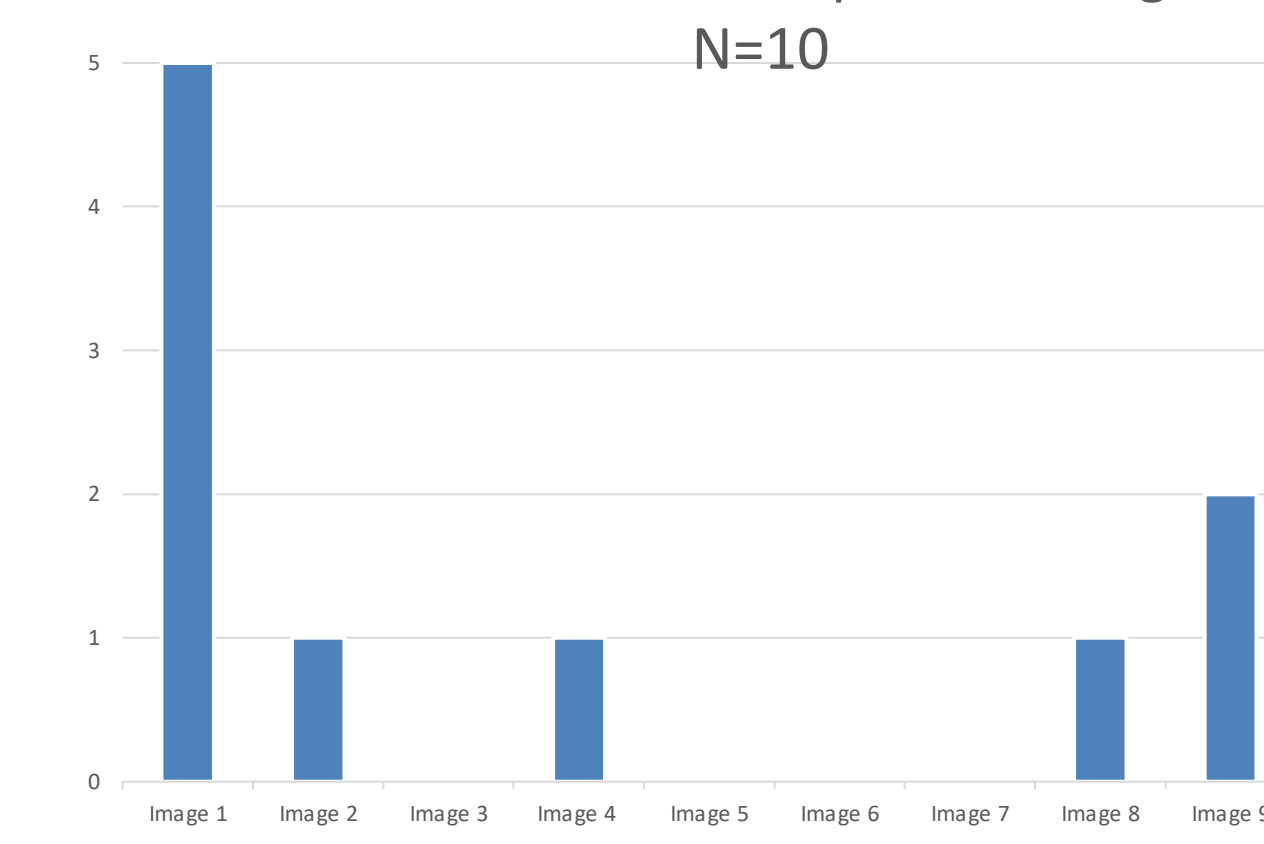
Do you use the currently available motivational interviewing chart during your recall appointments? N=10



Which is the most important image? N=10



Which is the least important image? N=10



## Results

Qualitative feedback:

- "Instead of soda add chocolate/strawberry milk"
- "Add daily flossing"
- "Replace candy picture with fruity/sticky snacks"
- "Combine juice/soda and make 'sweetened beverages' "
- "Adult supervision brushing"

## Discussion

The quality improvement project aims to empower parents with autonomy in managing their child's oral health at home. With the enhancement of the anticipatory guidance image chart, the need for multiple different versions of this chart emerged, most notably for those with special healthcare needs.

Of the other several key points to highlight, the most important images were noted to be 'Regular Visits' and 'Limit juice'. These images reiterate the need for all primary health care providers to identify young children who are at highest risk and the need for a dental home<sup>1</sup>.

Knowing the varied success of motivational interviewing, its important to deliver the message as community tailored as possible<sup>4</sup>. By removing images one and nine this allows for the introduction more relatable images such as fruit/gummy snacks and daily flossing.

Overall, participants provided valuable insights into enhancing the effectiveness and relevance of the MI chart in pediatric dentistry. The next steps would include the creation of multiple versions of the image chart tailored to better serve our patient population at CNH.

## Conclusion

- This quality improvement project contributed to caries self-management strategies by refining imaging techniques at CNH.
- Through improved visual aids this project gave insight for the need of modified charts to empower parents with better decision-making tools tailored to their child's needs.

## References

- Kagihara, Lynette E., Victoria P. Niederhauser, and Mariliana Stark. "Assessment, management, and prevention of early childhood caries." *Journal of the American Academy of Nurse Practitioners* 21.1 (2009): 1-10.
- Games, Francisco & Ng, Man Wai. (2011). Into the Future: Keeping Healthy Teeth Caries Free: Pediatric CAMBRA Protocols. *Journal of the California Dental Association*. 39. 723-33. 10.1080/19424396.2011.12221950.
- Ramos-Gomez FJ, Crystal YO, Ng MW, Crall JJ, Featherstone JD. Pediatric dental care: prevention and management protocols based on caries risk assessment. *J Calif Dent Assoc*. 2010 Oct;38(10):746-61. Erratum in: *J Calif Dent Assoc*. 2010 Nov;38(11):790. PMID: 21162350; PMCID: PMC3470809.
- Gillam DG, Yusuf H. Brief Motivational Interviewing in Dental Practice. *Dent J (Basel)*. 2019 May 1;7(2):51. doi: 10.3390/dj7020051. PMID: 31052431; PMCID: PMC6631588.
- Baskaradoss JK. Relationship between oral health literacy and oral health status. *BMC Oral Health*. 2018 Oct 24;18(1):172. doi: 10.1186/s12903-018-0640-1. PMID: 30355347; PMCID: PMC6201552.