

# The Effectiveness of Pre-Visit Positive Imagery in Reducing Dental Anxiety - Pilot Study

ARUSHA BHATIA, DMD, CATHERINE PHAM, DDS, MPH

HERMAN OSTROW SCHOOL OF DENTISTRY OF USC | ADVANCED PEDIATRIC DENTISTRY

Herman Ostrow School of Dentistry of USC

## INTRODUCTION

Dental fear and anxiety often emerge during childhood.<sup>1</sup> Dental fear is associated with avoidance of dental care which can lead to poor oral health related quality of life including pain, social avoidance, and trouble eating.<sup>1</sup> Preparing children before their dental visit can help them feel more relaxed and comfortable in the dental clinic. Pre-visit positive imagery is a basic behavior guidance technique and can be helpful in allowing patients to understand what will occur at their upcoming dental visit.

The purpose of this study is to determine whether pre-visit positive imagery has an impact in decreasing dental anxiety and fear in pediatric patients as well as increasing patient cooperation during treatment visits.

## METHODS

Patients were also asked to fill out a pre- and post-survey that allows them to express their level of dental fear and anxiety before and after the appointment using the Venham Picture Anxiety Test. Parents/caregivers of Group One were also given a post-operative survey asking whether they felt the pre-visit positive imagery helped improve patient's behavior.

Children were selected based on the following inclusion criteria:

- Healthy (ASA I/II) four- to six-year-olds with no history of dental treatment
- Patient requires at least one composite filling with local anesthesia and nitrous oxide.

Participants were randomly assigned to two groups:

- Group One: patients who received positive pre-visit imagery (a picture book explaining their dental treatment appointment with pictures and some words).
- Group Two: control group and did not receive any form of positive pre-visit imagery.

Patients' behavior (using the Frankl scale) were assessed by the treating provider at:

- Patient's new patient or recall appointment, and
- At the end of the treatment appointment

## RESULTS

Fourteen patients were recruited for the study with ten patients being in the experimental group and four patients being in the control group. Two of the fourteen patients did not complete all surveys due to treatment failure, therefore information was not available. The demographics of the patients recruited are listed below in **Table 1** (n=14).

| N=14             |   |
|------------------|---|
| <b>Age</b>       |   |
| 4 years          | 3 |
| 5 years          | 7 |
| 6 years          | 2 |
| <b>Ethnicity</b> |   |
| Hispanic         | 6 |
| African American | 1 |
| Caucasian        | 1 |
| Asian            | 4 |

|                 | Decreased      | Increased      | No Change |
|-----------------|----------------|----------------|-----------|
| <b>Anxiety</b>  | 3              | 3 <sup>b</sup> | 3         |
| <b>Behavior</b> | 3 <sup>a</sup> | 3              | 3         |

\*One patient from this group did not complete all surveys due to treatment failure

<sup>a</sup> = two of these patients received only extractions at this visit, composite fillings planned for future treatment appointment

<sup>b</sup> = two of these patients received only extractions at this visit, composite fillings planned for future treatment appointment

|   | Great improvement | Moderate improvement | Unanswered |
|---|-------------------|----------------------|------------|
| <b>Parent Survey: Did photobook help?</b> | 7                 | 1                    | 1          |

\*One parent from this group did not complete all surveys due to treatment failure

All patients in the experimental group, except one, that had composite fillings as their first treatment had either an increase in behavior and a decrease in anxiety or no change in behavior or anxiety. Two of the three patients that had a decrease in behavior and an increase in anxiety had extractions as their first procedure (**Table 2**). There was a general sentiment from parents that the pre-visit imagery improved their child's visit (**Table 3**).

|                 | Decreased | Increased | No Change |
|-----------------|-----------|-----------|-----------|
| <b>Anxiety</b>  | 0         | 1         | 2         |
| <b>Behavior</b> | 1         | 0         | 2         |

\*One patient from this group did not complete all surveys due to treatment failure

Two of the four control patients had no change in behavior or anxiety. One patient had an increase in anxiety, and one patient had a decrease in behavior. There was overall no improvement in increasing behavior or decreasing anxiety in any of the control patients (**Table 4**).

## CONCLUSIONS

- Preliminary results showed a possible trend towards decreasing anxiety and improving behavior when using pre-visit imagery for restorative treatment.
- Overall, parents felt pre-visit positive imagery helped their child with the treatment visit.
- The protocol is appropriate and will be continued to recruit additional patients

### References:

1. Selligman LD, Hovey JD, Chacon K, Ollendick TH. Dental anxiety: An understudied problem in youth. Clin Psychol Rev. 2017 Jul;55:25-40.
2. Shindova MP, Belcheva AB. Dental fear and anxiety in children: a review of the environmental factors. Folia Med (Plovdiv). 2021 Apr 30;63(2):177-182.
3. Ibrahim Rashwan, Zohour, et al. "Effect of Virtual Reality Distraction versus Positive Pre-Visit Imagery Intervention on Children's Dental Fear and Anxiety during Local Anaesthesia Injection: Implications for Evidence-Based Practice." Egyptian Journal of Health Care 11.4 (2020): 886-901.