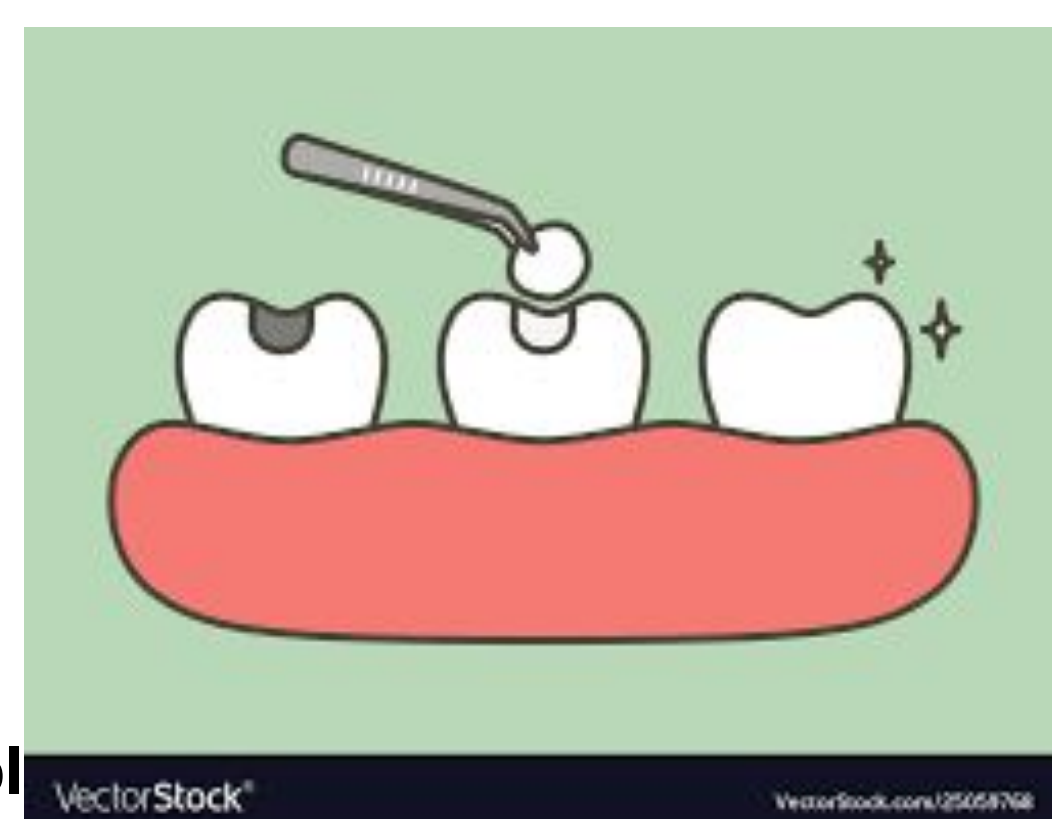




Introduction

Children may sometimes be afraid of the dentist and may not exhibit cooperative behavior. The concept behind this study follows previously tested concepts in which fearful dental patients participated in tell-play-do. This study demonstrated patients had less dental anxiety when they participated in a simulated play experience than those who watched a live dental procedure (Vishwakarma AP, et al 2017). This study will explore further different methods to ease fear and anxiety. As of now, treatment modalities for fearful and anxious patients can be invasive with sedation options ranging from PO sedation to IV sedation to even general anesthesia. Non medical anxiolysis is beneficial in that it poses less risk to the patient and may have broader parental acceptance.



Sample participants

Study Objectives

The objective of this study was to determine the strength of the correlation between exposure to dental procedures in an innocuous way via picture books and the level of fear/anxiety that patients have after this exposure.

Methods

Subjects

Twenty five patients aged 4-10 years old were the participants of this study.

Patient Selection

Inclusion Criteria:

Inclusion Criteria: Fearful participants between ages 4-10 years old presenting to a new patient or recall exam who have previously never had dental treatment (beyond exam and prophylaxis) will be eligible for this study. Patients will be selected for the study if they score above A3 on the visual anxiety scale and if they require a subsequent dental appointment where an operative procedure (restoration, stainless steel crown, extraction). Patients will be asked to choose the face that most closely matches their perceived anxiety, and those that select A4 and above will be asked to participate in the study.

Exclusion Criteria:

Exclusion Criteria: Participants who are not fearful or anxious. Participants who do not require a subsequent appointment for operative/extraction. Participants who had already experienced an operative procedure once before.

Baseline heart rate and facial anxiety scores were measured of patients presenting for their first dental appointment (either comprehensive exam or recall). Past dental history included no operative treatment. This acted as the control. Selected participants were asked to review a picture book that was given to them at their first dental appointment and heart rate was measured. The selected patients then returned for their subsequent dental appointment which consisted of operative procedures and were asked to score their anxiety using the facial anxiety scale. Heart rate was also obtained at this visit approximately 3 minutes after exposure. This acted as the intervention. The provider was kept the same for both appointments. Data was analyzed using a correlated t-test to compare the results.

Results

	Heart Rate prior to exposure to picture book	Heart Rate after exposure to picture book
Mean	103.1666667	111.0416667
Variance	64.92753623	58.73731884
Observations	24	24
Pearson Correlation	0.7841891946	
Hypothesized Mean Difference	0	
df	23	
t Stat	-7.450913766	
P(T<=t) one-tail	0.00000007103921183	
t Critical one-tail	1.713871528	
P(T<=t) two-tail	0.0000001420784237	highly significant
t Critical two-tail	2.06865761	

	Facial Scale Rating prior to exposure to picture book	Facial Scale Rating after exposure to picture book
Mean	3.28	2.64
Variance	0.46	1.74
Observations	25	25
Pearson Correlation	0.07079112372	
Hypothesized Mean Difference	0	
df	24	
t Stat	2.222365126	
P(T<=t) one-tail	0.01796862847	
t Critical one-tail	1.71088208	
P(T<=t) two-tail	0.03593725693	significant
t Critical two-tail	2.063898562	

Discussion

- Based on the p values, both results were statistically significant.
- It is interesting to note that the heart rate trend went in the opposite direction as hypothesized. Reasons for this may include that there was a greater number of younger children in the study than older children, skewing the heart rate trend mean higher.
- The facial anxiety scale average went in the direction as hypothesized, indicating that exposure to picture book is correlated with a less anxious participant.
- The sample size of the study was small, so it may not be possible to conclude that this study has external validity. Reasons for small sample size include difficulty scheduling with same provider for multiple appointments, high no show rates, and not qualifying for the study based on the inclusion criteria. In the patient population available for this study, it was difficult to find patients who were naive to operative treatment.

Conclusions

Based on these preliminary results, more research in this field is needed to determine if exposure to pictures representing different aspects of dental procedures can help alleviate anxiety.

Study Limitations

- Limited number of participants
- Short duration of the study
- Different age groups have different ranges of heart rates

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