Original Research

Assessment of effectiveness of different behavior guidance techniques in managing children with negative behaviour

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ABSTRACT:
Background: There are various behavior guidance techniques to deal with the problem, ranging from conventional Tell-Show-Do (TSD), voice control, to distraction etc. The present study was conducted to assess effectiveness of different behavior guidance techniques in managing children with negative behavior. **Materials & Methods:** 40 healthy children with negative behavior as per Frankl's rating scale were divided into 4 groups of 10 each. Group I was tell show do (TSD technique, control Group). Group II was audio distraction (AD technique). Group III was audio-visual distraction with through virtual reality(AVD) technique-VR). Group IV was mobile phone game distraction technique (MG). Parameters such as pulse rate, facial image scale, systolic blood pressure and diastolic blood pressure was recorded. **Results:** Out of 40 patients, boys were 22 and girls were 18. The mean preSBP (mm Hg) was 133.5, 133.8, 137.4 and 134.2 and post SBP was 126.3, 121.5, 105.7 and 115.4, preDBP (mm Hg) was 85.4, 86.7, 86.7 and 87.9 and post DBP (mm Hg) was 79.2, 75.4, 66.3 and 71.2, pre pulse rate (beats/min) was 111.2, 111.5, 112.3 and 111.7 and post pulse rate (beats/min) was 97.4, 89.3, 74.2and 83.2, pre- facial image scale was 4.56, 4.5.2, 4.72 and 4.82 and post facial image scale was 2.45, 2.41, 1.23 and 2.08 in group I, II, III and IV respectively. The difference was significant (P< 0.05). **Conclusion:** The AVD (VR) proved to be the most effective technique for reducing dental fear/anxiety in children with negative behavior requiring dental treatment.
Key words: Dental anxiety, behaviour, Children

INTRODUCTION
There is some uncertainty regarding the conceptualization of dental fear, dental anxiety and dental phobia in the scientific literature.[1,2] Usually, dental fear (DF) is considered a normal emotional reaction to one or more specific threatening stimuli in relation to the dental situation, whereas dental anxiety (DA) is considered a state of apprehension, coupled with a sense of losing control, which is linked to a feeling that something dreadful is going to happen in relation to dental treatment. Dental phobia (DP) would correspond to an intense fear that interferes with the individual's functioning.[3]
The American Academy of Pediatric Dentistry has outlined various behavior guidance techniques to deal with the problem, ranging from conventional Tell-Show-Do (TSD), voice control, to distraction.[4] Distraction techniques, in the recent past, have gained immense popularity among pediatric dentists in managing uncooperative children. These techniques work by diverting the patient's attention from what may be experienced as an unpleasantstimuli.[5] Audio distraction (AD) is one of the most commonly used distraction techniques, which works by partially occluding the environment while allowing child–clinician communication. It also presents a variety of programs that can be chosen as per the child's preference. In this, the patient listens to music or stories during dental treatment.[6]The present study was conducted to assess effectiveness of different behavior guidance techniques in managing children with negative behavior.

MATERIALS & METHODS
The present study comprised of 40healthy children with negative behavior as per Frankl's rating scale

between5 and 8 years of age requiring restoration of carious teeth of both genders.

Parental written consent for the participation in the study was obtained.

Data such as name, age, gender etc. was recorded. All were divided into 4 groups of 15 each.

Group I was tell show do (TSD technique, control Group). Group II was audio distraction (AD technique). Group III was audio-visual distraction with through virtual reality(AVD) technique-VR). Group IV was mobile phone game distraction technique (MG). Parameters such as pulse rate, facial image scale, systolic blood pressure and diastolic blood pressure was recorded. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS
Table I Distribution of patients

Total- 40		
Gender	Boy	Girls
Number	22	18

Table I shows that out of 40 patients, boys were 22 and girls were 18.

Table II Comparison of parameters

Groups	Parameters	Group I	Group II	Group III	Group IV	P value
SBP	Pre	133.5	133.8	137.4	134.2	0.05
	Post	126.3	121.5	105.7	115.4	
DBP	Pre	85.4	86.7	86.7	87.9	0.03
	Post	79.2	75.4	66.3	71.2	
Pulse rate	Pre	111.2	111.5	112.3	111.7	0.01
	Post	97.4	89.3	74.2	83.2	
Facial image scale	Pre	4.56	4.5.2	4.72	4.82	0.02
	Post	2.45	2.41	1.23	2.08	

Table II, graph I shows that mean pre SBP (mm Hg) was 133.5, 133.8, 137.4 and 134.2 and post SBP was 126.3, 121.5, 105.7 and 115.4, pre DBP(mm Hg) was 85.4, 86.7, 86.7 and 87.9 and post DBP (mm Hg) was 79.2, 75.4, 66.3 and 71.2, pre pulse rate (beats/min) was 111.2, 111.5, 112.3 and 111.7 and postpulse rate (beats/min) was 97.4, 89.3, 74.2 and 83.2, pre- facial image scale was 4.56, 4.5.2, 4.72 and 4.82 and postfacial image scale was 2.45, 2.41, 1.23 and 2.08 in group I, II, III and IV respectively. The difference was significant (P< 0.05).

Graph I Comparison of parameters
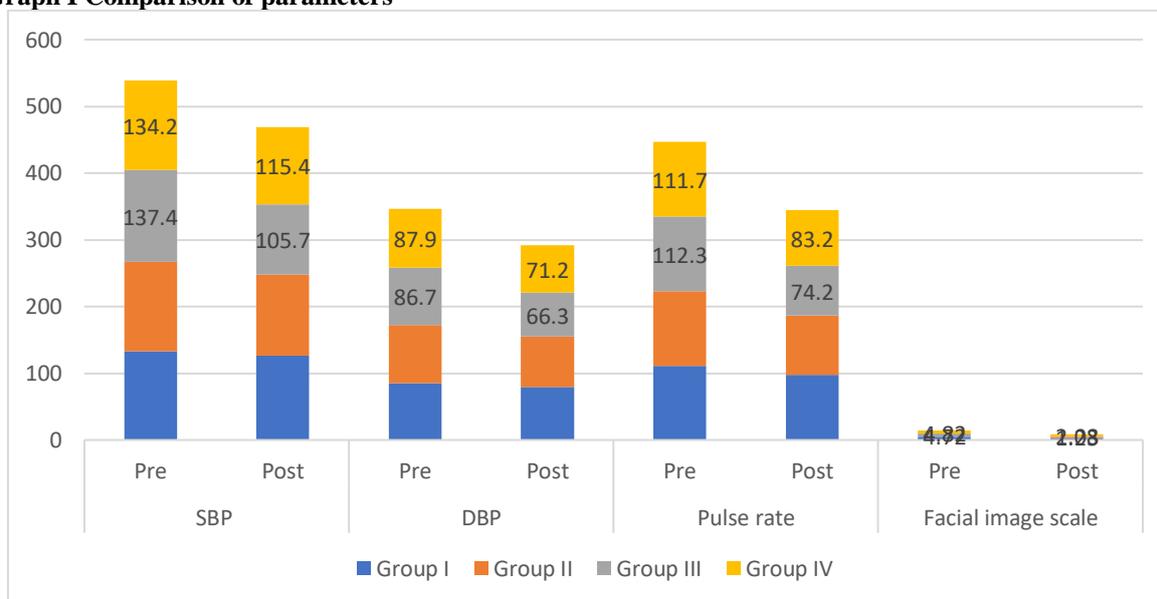
DISCUSSION

DA is a universal phenomenon that affects people of all ages across different countries.[7] The condition negatively impacts oral health-related quality of life in children and adults and may also impose a substantial burden to society. Furthermore, dentists perceive anxious patients as more difficult to deal with and treating people with DA require more time.[8]Estimates of DA prevalence in children and adolescents ranges from 5.7% to 20.2% and factors such as age, sex,

cultural context, socioeconomic status, presence of dental caries, history of toothache and previous dental treatments seem to be associated with DA occurrence.[9] Additionally, DA prevalence estimates may be influenced by methods used to assess it. There is a large pool of multi-item self-report scales and single item questionnaires that can be used to measure DA in children and adolescents.[10] The present study was conducted to assess effectiveness of different behavior guidance techniques in managing children with negative behavior.

We found that out of 40 patients, boys were 22 and girls were 18. Pande P et al[11] in their study sixty systemically healthy children were divided into four equal groups (n = 15), based on the guidance techniques used: Tell-Show-Do (TSD) as a control group and audio distraction, audiovisual distraction (AVD) (virtual reality [VR]) and Mobile Phone Game Distraction as test groups. Pre- and post-intervention levels of the child's fear/anxiety were assessed using both physiological (blood pressure and pulse rate) and non-physiological (facial image scale) parameters. A statistically significant difference was observed in both physiological and non-physiological parameters post-intervention in the groups with a maximum decrease in the AVD (VR) group.

We found that mean preSBP (mm Hg) was 133.5, 133.8, 137.4 and 134.2 and postSBP was 126.3, 121.5, 105.7 and 115.4, preDBP (mm Hg) was 85.4, 86.7, 86.7 and 87.9 and postDBP (mm Hg) was 79.2, 75.4, 66.3 and 71.2, pre pulse rate (beats/min) was 111.2, 111.5, 112.3 and 111.7 and post pulse rate (beats/min) was 97.4, 89.3, 74.2 and 83.2, pre- facial image scale was 4.56, 4.5.2, 4.72 and 4.82 and post facial image scale was 2.45, 2.41, 1.23 and 2.08 in group I, II, III and IV respectively. Chhabra et al[12] estimated the prevalence of dental anxiety and fear among the 5-10 years aged Indian child population. A total of 523 children aged 5-10 years were included. The estimated prevalence of dental anxiety among 5 to 10 years old children in the study population was 6.3%. The overall median CFSS-DS score was 23 and the overall mean value of CFSS-DS score was 24. The prevalence of dental anxiety in children aged 5 years was 7.9%, 7.1% for 6 years old, 6.6% in 7 years old, 6.5% in 8 years old, 6.3% for 9 years old children and 5.8% in children aged 10 years. No statistically significant gender differences were found in the dental anxiety scores. The most fear provoking situations was the sight of injections, the drilling procedures by the dentist, touch of a stranger and noise of drilling by the dentist.

Carson and Freeman[13] demonstrated the effectiveness of TSD in reducing anticipatory anxiety in emergency pediatric dental patients and showed that there is high acceptability of this technique by the children. Various distraction techniques have gained immense popularity in the recent past for reducing dental fear and anxiety among children.

The limitation the study is small sample size.

CONCLUSION
Authors found that AVD (VR) proved to be the most effective technique for reducing dental fear/anxiety in children with negative behavior requiring dental treatment.

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