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Original Research

Effectiveness of different behavior guidance techniques in managing uncooperative child patients

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ABSTRACT:
Background: Behavior guidance techniques, both non-pharmacological and pharmacological, are used to alleviate anxiety, nurture a positive dental attitude, and perform quality oral health care safely and efficiently for infants, children, adolescents, and persons with special health care needs. The present study was conducted to assess effectiveness of different behavior guidance techniques in managing uncooperative child patients. **Materials & Methods:** 80 children with negative behavior as per Frankl's rating scale age ranged 5- 8 years of age requiring restoration of carious teeth were divided into 4 groups of 20 each. Group I were managed with TSD technique, group II with AD technique, group III with audio-visual distraction (AVD)technique and group IV with mobile phone game distraction technique (MG). Pre- and post-intervention levels of the child's fear/anxiety were assessed using both physiological (blood pressure and pulse rate). **Results:** Group I had 12 boys and 8 girls, group II had 11 boys and 9 girls, group III had 10 boys and 10 girls and group IV had 9 boys and 11 girls. Pre-operative and post- operative pulse rate (beats/min) in group I was 112.4 and 98.6, in group II was 110.4 and 88.4, in group III was 112.4 and 74.2 and in group IV was 114.2 and 84.5 respectively. The difference was significant (P< 0.05). Pre-operative and post- operative systolic blood pressure (SBP) (mm Hg) in group I was 134.2 and 124.2, in group II was 133.6 and 120.4, in group III was 132.4and 106.4 and in group IV was 136.2 and 114.2 respectively. Pre-operative and post-operative diastolic blood pressure (DBP) (mm Hg) in group I was 85.4 and 80.2, in group II was 86.2 and 76.3, in group III was 86.3and 66.8 and in group IV was 87.4 and 70.4 respectively. The difference was significant (P< 0.05). **Conclusion:** AVD (VR) proved to be the most effective technique for reducing dental fear/anxiety in children with negative behaviour requiring dental treatment.
Key words: Behavior, guidance, Child

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INTRODUCTION

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.[1] 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 unpleasant stimuli.[2]

Behavior guidance techniques, both non-pharmacological and pharmacological, are used to alleviate anxiety, nurture a positive dental attitude, and perform quality oral health care safely and efficiently for infants, children, adolescents, and persons with special health care needs (SHCN).[3] Selection of techniques must be tailored to the needs of the individual patient and the skills of the practitioner. The AAPD offers these recommendations to inform health care providers, parents, and other interested parties about influences on the behavior of pediatric dental patients and the many behavior guidance techniques used in contemporary pediatric dentistry.[4]

There were various techniques such as audio distraction (AD), audio-visual distraction (AVD), tell show do (TSD) and mobile phone game distraction technique (MG). AD is one of the most commonly used distraction techniques, which works by partially occluding the environment while allowing child–

clinician communication.[5]The present study was conducted to assess effectiveness of different behavior guidance techniques in managing uncooperative child patients.

MATERIALS & METHODS

The present study comprised of 80 children with negative behavior as per Frankl's rating scale age ranged 5- 8 years of age requiring restoration of cariousteeth. The consent was obtained from all parents.

Data such as name, age, gender etc. was recorded. They were divided into 4 groups of 20 each. Group I were managed with TSD technique, group II with AD technique, group III with audio-visual distraction (AVD)technique and group IV with mobile phone game distraction technique (MG).Pre- and post-intervention levels of the child's fear/anxiety were assessed using physiological (blood pressure and pulse rate).Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I	Group II	Group III	Group IV
Method	TSD technique	AD technique	AVD technique	MG technique
M:F	12:8	11:9	10:10	9:11

Table I shows that group I had 12 boys and 8 girls, group II had 11 boys and 9 girls, group III had 10 boys and 10 girls and group IV had 9 boys and 11 girls.

Table II Comparison of pulse rate

Groups	Pre-operative	Post- operative	P value
Group I	112.4	98.6	0.05
Group II	110.4	88.4	0.03
Group III	112.4	74.2	0.01
Group IV	114.2	84.5	0.04

Table II, graph I shows that pre-operative and post- operative pulse rate (beats/min) in group I was 112.4 and 98.6, in group II was 110.4 and 88.4, in group III was 112.4 and 74.2 and in group IV was 114.2 and 84.5 respectively. The difference was significant (P< 0.05).

Graph I Comparison of pulse rate

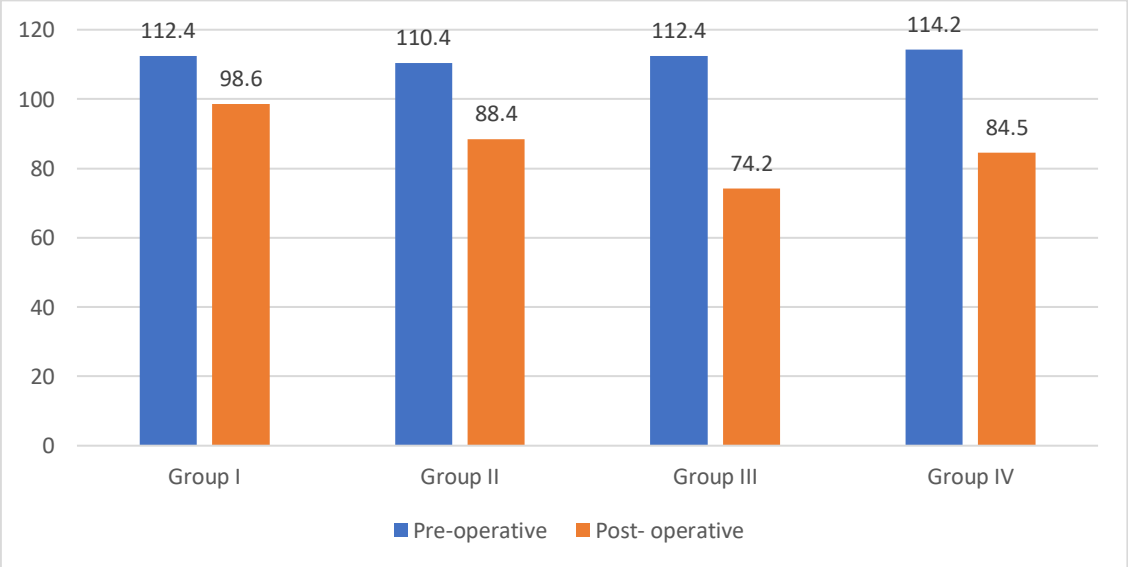

Table III Comparison of systolic blood pressure

Groups	Pre-operative	Post- operative	P value
Group I	134.2	124.2	0.05
Group II	133.6	120.4	0.03
Group III	132.4	106.4	0.01
Group IV	136.2	114.2	0.05

Table III shows that pre-operative and post- operative systolic blood pressure (SBP) (mm Hg) in group I was 134.2 and 124.2, in group II was 133.6 and 120.4, in group III was 132.4 and 106.4 and in group IV was 136.2 and 114.2 respectively. The difference was significant (P< 0.05).

Table IV Comparison of distolic blood pressure

Groups	Pre-operative	Post- operative	P value
Group I	85.4	80.2	0.15
Group II	86.2	76.3	0.04
Group III	86.3	66.8	0.01
Group IV	87.4	70.4	0.02

Table IV shows that pre-operative and post- operative diastolic blood pressure (DBP) (mm Hg) in group I was 85.4 and 80.2, in group II was 86.2 and 76.3, in group III was 86.3 and 66.8 and in group IV was 87.4 and 70.4 respectively. The difference was significant (P< 0.05).

DISCUSSION

Advanced behavior guidance techniques are considered higher risk and therefore require advanced training and informed consent from a parent or legal guardian.[6] Advanced techniques include pharmacologic intervention and protective stabilization, which has been known as active or passive restraint.[7] Protective stabilization with a Papoose Board has been shown to garner positive attitudes towards its use by mothers whose children have required the technique. Some younger pediatric dentists predict use of protective stabilization will decline in the future.[8]The present study was conducted to assess effectiveness of different behavior guidance techniques in managing uncooperative child patients.

We found that group I had 12 boys and 8 girls, group II had 11 boys and 9 girls, group III had 10 boys and 10 girls and group IV had 9 boys and 11 girls. Pande et al[9]compared and evaluated the effectiveness of four different behavior guidance techniques in managing uncooperative pediatric patients by measuring pre- and post-operativedental fear/anxiety levels using physiological andnon-physiological parameters. Sixtysystemically healthy children aged 5–8 years with negative behavior as per Frankl's Rating Scale, requiring restoration were included in the study andrandomly divided into four equal groups (n = 15),based on the guidance techniques used: Tell-Show-Do (TSD) as a control group and audio distraction, audio-visual distraction (AVD) (virtua lreality [VR]) and Mobile Phone Game Distraction as test groups. A statistically significant difference was observed in both physiological and non-physiological parameters post-interventionin the groups with a maximum decrease in theAVD (VR) group.

We found that pre-operative and post- operative pulse rate (beats/min) in group I was 112.4 and 98.6, in group II was 110.4 and 88.4, in group III was 112.4 and 74.2 and in group IV was 114.2 and 84.5 respectively. Al-Halabi et al[10] evaluated the effectiveness oftwo different AVD techniques: AV eyeglasses-VR Boxand tablet and concluded that distraction using videoshown on tablet-device was the best in relieving dentalanxiety and pain as compared to the VR box.

We found that pre-operative and post- operative systolic blood pressure (SBP) (mm Hg) in group I was 134.2 and 124.2, in group II was 133.6 and 120.4, in group III was 132.4and 106.4 and in group IV was 136.2 and 114.2 respectively. Singh et al[11] in their study compared AD with the TSDtechnique and found that "AD" was efficacious inalleviating the anxiety of pediatric dental patients.

We found that pre-operative and post- operative diastolic blood pressure (DBP) (mm Hg) in group I was 85.4 and 80.2, in group II was 86.2 and 76.3, in group III was 86.3 and 66.8 and in group IV was 87.4 and 70.4 respectively. Carson and Freeman[12] demonstrated the effectiveness of TSD in reducing anticipatory anxiety in emergency pediatric dental patients and showed that there ishigh acceptability of this technique by the children.

Parental acceptance of behavior guidance techniques is an important part of successful dental treatment of pediatric patients as well as for any other specializes that may benefit from the use of these techniques. Multiple studies have investigated what guidance techniques are accepted by parents for their children, and what factors determine parental attitudes. These studies have shown highly variable results ranging from all presented behavior guidance techniques having some degree of parental acceptance10 to no technique having universal acceptance.[13,14]

CONCLUSION

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

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