

Effectiveness of Bubble Breath Play Therapy in the Dental Management of Anxious Children: A Pilot Study

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ABSTRACT

Play is an inseparable part of childhood and can act as a mode through which children can be desensitized toward dental treatment.

Aim: To assess and compare the efficacy of bubble breath play therapy (BBPT) and tell-show-do (TSD) technique in the dental management of anxious/fearful children.

Materials and methods: Forty-eight children aged 6–8 years were randomly divided into group I: BBPT and group II: TSD. The effectiveness of the BBPT and TSD technique in reducing anxiety/fear in children was assessed pretreatment, during, and posttreatment evaluation of the child's anxiety levels using finger pulse oximeter and Venham's anxiety and behavior rating scale. All children underwent rotary restorative treatment.

Results: The mean pulse rate in the BBPT and TSD group was 106.96 mm Hg and 102.25 mm Hg, respectively, at baseline. A decrease in the pulse rate was observed in both the groups after the application of behavior modification strategies. However, after the dental treatment, the mean pulse rate slightly increased in the BBPT group, while it showed a further improvement in the TSD group.

Conclusion: The BBPT acts as a distraction and can

Clinical significance: Application of appropriate

Keywords: Behavior, Dental anxiety, Dental fear, F

The Journal of Contemporary Dental Practice (2020

the dentist and children during dental treatment. essential to provide quality dental treatment and



INTRODUCTION

Pediatric dentists interact with children of various ages from infants to adolescents. The primary aim is to provide dental treatment in a safe environment and instill a positive attitude toward oral health. However, children often regard dental treatment to be painful; the cause of which can be an unpleasant medical or dental experience or vice versa. Dental anxiety or fear prevents children from seeking dental treatment, thereby leading to a negative impact on their general health. According to Armfield, the dental avoidance of dental treatment leads to a vicious cycle. Presence of dental fear/anxiety prevents a child from seeking dental treatment, thereby worsening dental problems, which in turn require intense and potentially traumatic interventions or further exacerbate the dental fear/anxiety leading to continued avoidance of dental treatment.

The successful management of these children depends on the ability of the dental practitioner to guide the children through their dental experiences by selecting behavior guidance strategies that will allay their fears and bring about a positive change.

Broadly, nonpharmacologic/psychotherapeutic interventions, pharmacologic interventions, or both can manage dental anxiety. Owing to drawbacks, such as patient safety and cost factor associated with pharmacologic interventions, nonpharmacologic/psychotherapeutic modes of behavior guidance are preferred.

The tell-show-do (TSD) technique based on the principle of learning theory is one of the most commonly used nonpharmacologic methods in pediatric dentistry.² The technique dictates that before any procedure is done, the child is to be well informed and a demonstration be given using a simulator and the procedure is performed without deviating from the explanation and demonstration. However, as this technique involves only explaining,

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Title: Azher U, Srinath SK, Nayak M. Effectiveness of Bubble Breath Play Therapy in the Dental Management of Anxious Children. *J Contemp Dent Pract* 2020;21(1):17–21.

Nil

Conflict of interest: None

demonstrating, or observing, it restricts children to only verbal expression and hence a barrier to effective resolution of anxiety issues.

Play is the singular central activity of childhood, occurring at all times and at all places.³ Play therapy can be defined as an interpersonal process where a trained therapist systematically applies the curative powers of play to help the clients resolve their current psychological difficulties and help prevent future ones. The bubble breath play therapy (BBPT) is a simple and concrete relaxation method designed to teach children deep and controlled breathing while creating an awareness in them of their own mind–body connections.⁴ Hence, as bubble blowing is fun for children, the present study was conducted to assess the effectiveness of BBPT in comparison with the TSD technique in reducing dental anxiety in children following treatment with air motor drill.

Table 1: Comparison of mean heart rate at different intervals between the two groups

Pulse rate	BBPT	TSD	Mean difference	t	Significant (two tailed)
Baseline	106.95 ± 11.16	102.25 ± 7.95	4.70	1.682	0.099
After intervention	102.66 ± 17.41	96.08 ± 10.66	6.58	1.579	0.121
After treatment (with airotor)	103.50 ± 13.52	93.58 ± 8.18	9.91	3.073	0.004*

*Statistically significant

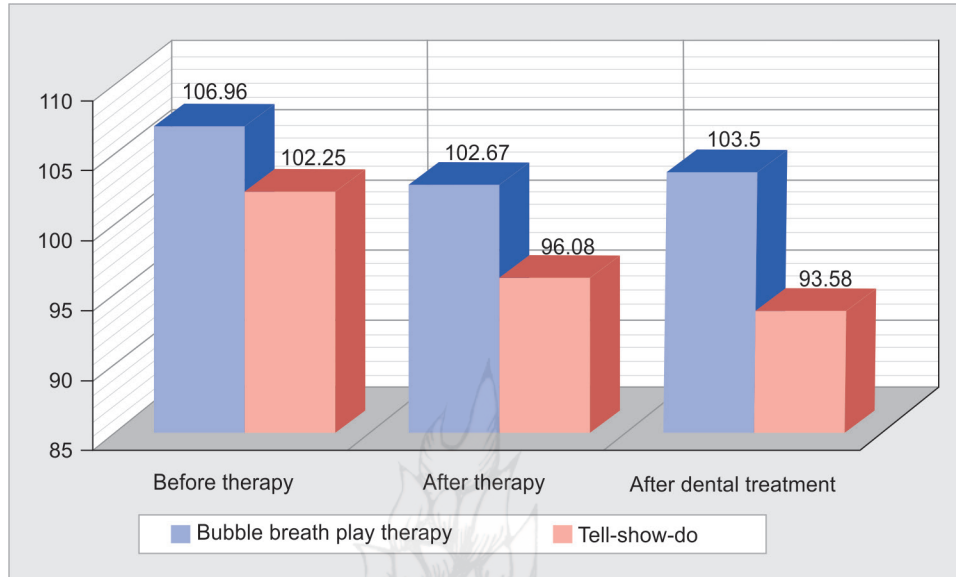


Fig. 1: Mean pulse rate between the groups at different time intervals

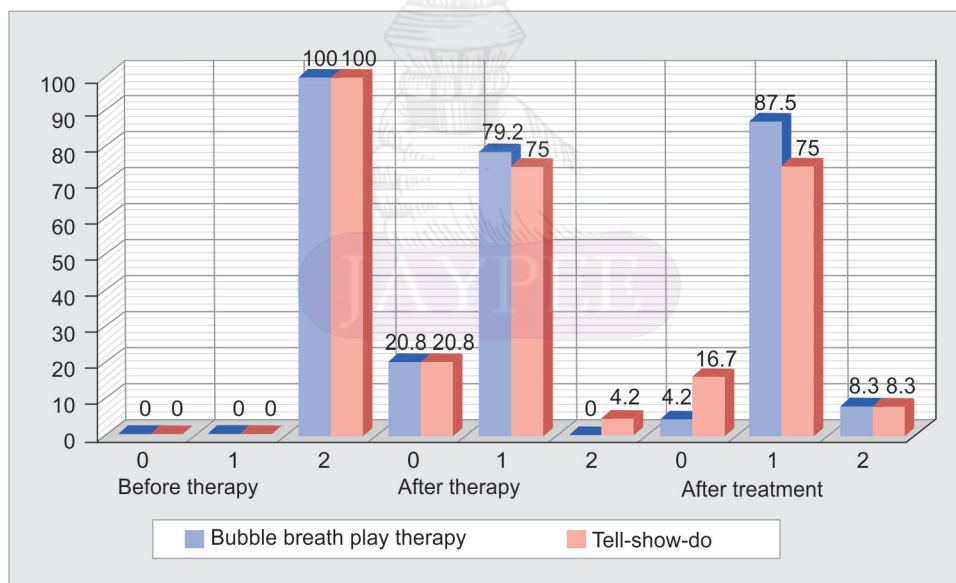


Fig. 2: Comparison of the behavior rating score using Venham's interval rating scale for behavior and anxiety of the patients in both bubble breath play therapy and tell-show-do group

measure of physiological arousal and its increase is attributed to stress during dental procedures, it was used to measure the anxiety levels of children in the present study.

The TSD technique is the cornerstone of behavior management in pediatric dentistry. The BBPT is a simple, inexpensive, exceptionally engaging and nonthreatening technique. In this technique, the children are encouraged to blow

big bubbles and exhale slowly. In an attempt to blow them, they take deep breaths from the stomach. This modality helps to train them in controlled breathing, which physiologically enhances children's relaxation.

Kiran et al. evaluated the efficacy of BBPT among children (5–10 years) undergoing dental treatment by the graphological method. The BBPT was found to be highly significant in reducing

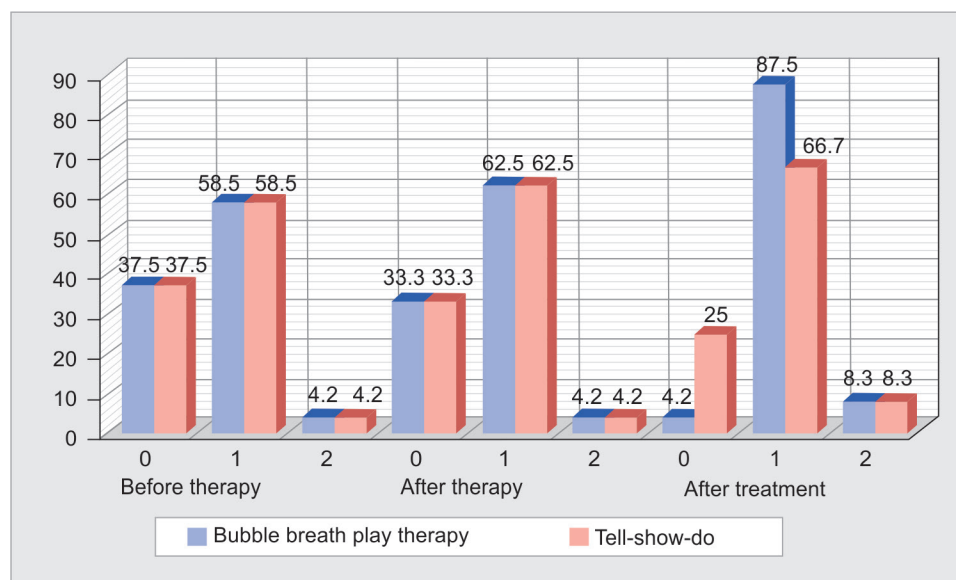


Fig. 3: Comparison of the anxiety rating score using Venham's interval rating scale for behavior and anxiety of the patients in both bubble breath play therapy and tell-show-do group

anxiety and distress among children undergoing routine dental procedure.¹⁵ In the present study, results showed a reduction in the pulse rate and improvement in the behavior and anxiety ratings following application of BBPT and TSD, compared to the baseline. The pulse rate again slightly increased in the BBPT group compared to the TSD group following the dental treatment with airmotor, indicating an increase in the anxiety levels. However, it was less than the baseline values, indicating a relaxing influence on the anxious child.

However, the study's limitations include a small sample size and inability to generalize the results to a larger population.

CONCLUSION

Within the limitations, it can be concluded that the BBPT acts as a distraction and can be considered a child-friendly method to enhance rapport with the children; however, it does not allay the fears; while the TSD technique is successful in achieving this. Hence, the BBPT can aid in relaxing the child and thereby help in desensitizing the child's fear by using appropriate behavior shaping strategies.

Further studies on a combination of BBPT and TSD are warranted.

CLINICAL SIGNIFICANCE

- Desensitization of children toward dental treatment is very important in instilling a positive attitude and allaying dental fear.
- Play can be used as a strategy to manage fearful children in a dental clinic and thereby help the dentist to render quality treatment in a safe environment.
- Bubble breath play therapy can help in relaxing the child during dental procedures.

AUTHOR CONTRIBUTIONS

The idea was conceived by Dr Umme Azher and Dr SK Srinath. Data collection by Umme Azher. Data analysis by Dr Umme Azher,

Dr SK Srinath and Dr Mihir Nayak. Preparation of manuscript by Umme Azher. Manuscript editing and review by Dr SK Srinath and Dr Mihir Nayak.

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