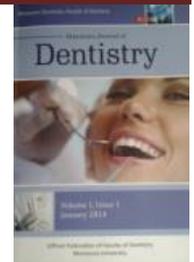




Evaluation of Children's Anxiety Using Different Behavior Management Techniques



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Abstract:

Back ground: Dental Anxiety is a worldwide problem and the main barrier for successful completion of dental treatment. The main target of the pediatric dentist is to treat children in an anxiety-free environment along with rendering highest quality of the dental care.

Aim: Evaluation of the anxiety levels among children in the dental clinic using two different behavior management techniques.

Methods: 60 children aged 4–7 years indicated for restorative treatment under local anesthesia in their first dental visit were selected from the Pediatric Dental clinic, Faculty of Dentistry, Mansoura University. They were randomly divided into two equal groups according to the type of behavior management technique. Group 1: Tell Play Do (TPD) technique and Group 2: distraction using video eyewear (audiovisual distraction). Assessment of child's behavior was done during examination stage, anesthetic stage and restorative stage using Facial Anxiety Scale (FAS). Data were collected, tabulated and statistically analyzed using IBM-SPSS software version 25.

Results: There was a statistically significant difference using FAS as the video eyewear group had more anxious behavior than TPD group during the restorative procedure (p value= 0.007). TPD technique significantly improved the child behavior during restorative stage compared to examination stage.

Conclusion: Tell play do technique is better than video eyewear distraction technique in reducing the anxiety levels.

Key words: Anxiety, TPD, Distraction, video eyewear.

Introduction

One of the cornerstones in pediatric dentistry is the ability to encourage positive dental attitude and guide children positively throughout their dental treatment to improve their oral health through the application of many behavior management techniques.⁽¹⁾

Addelston (1959)⁽²⁾ introduced Tell Show Do (TSD) technique which is the most commonly used technique in pediatric dentistry then it is modified into Tell Play Do (TPD) technique to reduce the dental anxiety as the child is allowed to play with dental imitating instrument toys which provides more explanatory concept of the dental procedure.⁽³⁾

Distraction is a non-aversive approach used to modify discomfort of the child by disrupting his/her attention away from the main task to render a successful and qualified treatment. It is one of the psycho-behavioral approaches used in medical and dental treatment.⁽⁴⁾

MATERIALS AND METHODS

Sixty children aged 4–7 years indicated for restorative treatment under local anesthesia in their first dental visit selected from the Pediatric Dental Clinic, Faculty of Dentistry, Mansoura University. Prior to any treatment, parents were asked to sign consent for their children to be included in this study. They were randomly divided into two equal groups ($n=30$) according to the type of behavior management technique. Group 1: Tell Play Do (TPD) technique and Group 2: distraction using video eyewear (audiovisual distraction). Clinical examination was performed by the operator using mouth mirror, probe and

tweezer. Topical anesthesia was applied at the site of the needle injection and Local anesthesia was given for each child. Cavity preparation and tooth restoration were carried out according to the standard techniques

Evaluation: the child's behavior was assessed during examination stage, anesthetic stage and restorative stage using facial anxiety scale.

RESULTS

In the comparison between the examination and the anesthetic stages using FAS in the two groups, the child had the worst behavior during the anesthetic stage as all p values were significant (<0.001). The mean value of the examination and the restorative stages in TPD group were 2.47 and 2.17 respectively as this group had significant p value= 0.01 which suggested that the children had better behavior in the restorative stage than in the examination stage in group 1. In comparing between the anesthetic and the restorative stages, the worst behavior was during the administration of the local anesthesia as all p values were significant. **(Table 1)**

There was a statistically significant difference only during the restorative stage. The mean value of FAS score were 2.17 and 2.60 for group 1 and group 2 respectively as FAS scores ranged from 1 (the most positive face) to 5 (the most negative face); p value =0.007. This results clearly illustrates the bad effect of video eyewear distraction technique during the restorative procedure. **(Table 2)**

Table (1):Evaluation of the anxiety levels during the examination, anesthetic and restorative stages in each group using FAS.

Group	Examination	Anesthesia	Restoration	P	P1	P2	P3
	Mean ±SD	Mean ±SD	Mean ±SD				
Group 1	2.47±0.51	3.17 ± 1.12	2.17±0.46	<0.001*	<0.001*	0.01*	<0.0001*
Group 2	2.3±0.73	3.40 ± 1.11	2.60 ± 0.81	<0.001*	<0.001*	0.17	0.001*

P1: Difference between at examination and anesthesia.

p2: difference between examination and restoration.

p3: difference between anesthesia and restoration.

* Statistically significant (if $p \leq 0.05$)

Table (2):Evaluation of the anxiety levels between the two groups in each stage using FAS.

	Group 1 n=30	Group 2 n=30	Test of significance
	Mean ±SD	Mean ±SD	
Examination	2.47±0.51	2.43±0.73	p=0.81
Anesthesia	3.17±1.12	3.40±1.11	p=0.42
Restoration	2.17±0.46	2.60±0.81	p=0.007*

* Statistically significant (if $p \leq 0.05$)

DISCUSSION

In pediatric dentistry, Stimuli found in every dental procedures can easily produce dental anxiety which is the universal barrier to oral health care. It renders treatment difficult or even impossible and causes occupational stress among dental staff. (5, 6)

This study aimed to evaluate the anxiety levels among children in the dental clinic using two different behavior management techniques because the pediatric dentist desire to treat children in an anxiety-free environment through the application of many behavior management techniques.

The number of selected children in this study was 60 children of both genders divided equally into 2 groups (n=30). This number range was in accordance with these previous studies.(7-9) Sufficient number of children was selected to decrease variation in results and to detect any significant difference between the two groups.

In the present study, the age range of selected children was 4-7 years old as an inclusion criteria. This age range was chosen in agreement with Marzo et al. 2003(10) andTaher et al. 2018(11). The probable explanation is that dental problems are difficult to treat in this age group because they have more disruptive behavior so, they are the most difficult to manage. A child less than 4 years old is classified as pre-cooperating, showing limited understanding and poor cognitive mechanism while, the child over 7 years become more stable and less fearful.(10)

In the current study, none of the children had a previous exposure to dental treatment to standardize the data and decrease the variables between the two groups. This criteria was used in agreement with Al-Khotani et al. 2016,(9)Shah et al. 2018, (8)Taher et al.2018,(11)Ghadimi et al. 2018(12)and Khandelwal et al. 2018.(13) Hence, the child's first dental visit is an important factor to establish a qualified dental treatment.

Children's anxiety in the current study was assessed using FAS. The records of this scale were done by the dentist not by the children as the children were unable to assess their feelings of anxiety because they were guided more by their personal preferences than by their feelings and they chose those figures in the test that looked happier and more relaxed. In comparing between the examination and the restorative stages in TPD group using FAS, there was a statistically significant difference as the child behavior improved during the restorative stage than the examination stage. This technique was a successful alternative to TSD technique in reducing anxiety levels in this study. This was supported by Vishwakarma et al. 2017,(3) who concluded that TPD technique worth practicing in pediatric dentistry and might be an alternate method to TSD to control 5–7-year-old children's anxiety and achieve cooperative behavior. The good results of this technique owing to the development of a

sense of confidence along with reduction in fear and anxiety as it is based on learning theory where interchange of

thoughts and two-way interchange of information occurs by performing dental treatment on dental imitating toys. It has a greater impact on younger children because the child understands the dentist's frame of reference, feels more comfortable and develops cooperative behavior.

In our study, TPD technique was statistically significant better than audiovisual distraction video eyewear technique in behavior management. While the result of Shah et al. 2018,(8) was that there was no statistically significant difference in between audiovisual distraction eye glass method and TPD technique among 4-7 years old children and both techniques were equally effective in behavior management. The possible explanation of our findings could be due to larger sample size than their study.

Results of the current study revealed that there was a statistically significant difference as the video eyewear group had more anxious behavior than TPD group during the restorative procedure. This result came in agreement with Sullivan et al. 2000,(14) who found that wearing audiovisual glasses during dental treatment had no significant effect on the behavior as they concluded that anticipation and negative emotions increased in children when they could not see or hear what is happening around them.

On the other hand, the results of Prabhakar et al. 2007,(15) Wiederhold et al. 2014,(16) Fakhruddin et al. 2015,(7) Al-Khotani et al. 2016(9) and Khandelwal et al. 2018(13) argued our results as they found that the video eyewear distraction technique was very effective distraction technique for behavior management. This could be attributed to the occlusive eyewear that projects the images right in front of the eyes of the user and blocks out real world's (visual, auditory or both) stimuli. So, the child's attention would be more or less "diverted" from the real surrounding environment.

Conclusion:

Tell play do technique is better than video eyewear distraction technique in reducing the anxiety levels.

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