# EFFECTIVENESS OF MUSIC DISTRACTION IN THE MANAGEMENT OF ANXIOUS PEDIATRIC DENTAL PATIENTS

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### ABSTRACT:

Management of Anxious Children in dental office still remains a challenge in day to day pediatric dental practice. The effect of different behavior management procedures in managing anxious children is well documented, for example distraction. This study is an attempt to evaluate the effect of music (audio) distraction in reducing the anxiety using Venham's picture test.

KEY WORDS: Dental Anxiety, Distraction, Venham's picture test

### INTRODUCTION

Pediatric dental patients can be placed at two extremes. At one end happy and relaxed children who readily accept dental treatment; at the other end are those extremely fearful children who resist every form of treatment offered. Some children unwillingly get dental treatment and show undesirable behavior management problems, which may complicate the treatment procedure. If behavior is not managed properly, it will promote negative attitude to dental treatment. If left untreated for a longer time it will deteriorate the oral health of such patients and leads to invasive and complicated dental treatment, which is likely to be unpleasant and in turn increases the negative attitude in an anxious child.<sup>1</sup>

Anxious children demand considerable dedication and expertise in child management techniques from the dentist and the dental staff. Although many management techniques are successful, the present trend is towards non-aversive techniques. Audio distraction is one such non-aversive technique which was successfully used in medical settings.<sup>2</sup>

The etiological factors for anxiety in a child patient can be classified into

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**Exogenous factor or Dental factor:**e.g. direct experience, indirect experience or familial trait, fear of unknown and lacking of control.

**Endogenous factor or non-Dental factor** (psychological factor):e.g. trait anxiety of children, general behavior problem of children, temperament of the child and socioeconomic status.<sup>3</sup>

Traditionally, there are many varied approaches to managing dental anxiety and fear. For example, children are given a sense of control over proceedings, may hold a toy, or the dentist can spend a little 'social' time with the fearful child before treatment (e.g. Wright et al.<sup>11</sup>). As an alternative to these 'traditional' approaches, the American Academyof Pediatric Dentistry has outlined a series ofbehavioural management techniques to deal with the problem, ranging from, for example,voice control, to distraction, to physical restraint<sup>12</sup>. When all else fails, sedation with drugs such as nitrous oxide has been advocated.All of the above techniques have the same purpose, to make cognitive orientation and promote coping ability.

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**AIM:** To determine if music distraction is an effective means of managing anxious dental patients

## MATERIALS AND METHODS:-

### Inclusion Criteria:

- 1. Children aged between 6 to 12 years
- 2. Children with no previous dental experience
- 3. Children well oriented with time and space

#### **Exclusion Criteria:**

 Children with any sort of mental or physical disability

Informed consent was obtained from the parents prior to the start of the treatment procedure Each child had 3 dental visits as follows

- 1. Screening
- 2. Restorative procedures or oral prophylaxis (scaling) without the need of a local anesthetic injection.
- 3. Invasive procedures necessitating the need of a local anesthetic injection.

Further the children were randomly divided into 2 equal groups of 10 children each

- 1<sup>st</sup> group Control group
- 2<sup>nd</sup> group Music group

The choice of the type of music depended on the patient's selection. The patient in the music group listened to the selected audio presentation through headphones through-out the treatment procedures during all the visits.

Child's anxiety level in each visit was measured using the Venham's Picture test<sup>6, 7</sup>(Fig.1), which comprises of eight cards, with two figures on each card, one 'anxious' figure and one 'non-anxious' figure. The children were asked to point at the figure they felt most like at that moment (Fig. 2 to 4). All cards were shown in their numbered order. If the child pointed at the 'anxious' figure a score of '1' was recorded, if the child pointed at the 'nonanxious' figure a score of '0' was recorded. The number of times the 'anxious' figure was chosen was totaled to give a final score with minimum score being '0' and maximum score being '8'.

#### **RESULTS:-**

The scores in table 1 depict the anxiety levels of the patients measured by the Venham's picture scale in the Control group



Patient	Exami-nation	Filling procedures	Injection
1	8	8	4
2	8	8	8
3	8	8	4
4	8	8	8
5	8	8	4
6	8	8	5
7	8	8	8
8	8	8	3
9	8	6	3
10	8	6	4

# **Table1** Depicting the scores of the patients in control group

The scores in table 2 depict the anxiety levels of the patients measured by the Venham's Picture Test in the Music group.

Statistical analysis was performed using the SPSS software 16.0 version and MS excel packages.

Patient	Examination	Filling procedures	Injection
1	8	8	7
2	8	8	7
3	8	8	6
4	8	8	7
5	8	8	7
6	8	8	8
7	8	8	8
8	8	8	7
9	8	8	8
10	8	8	8

# **Table 2.** Depicting the scores of the patients in music group

The results showed that the mean sum of scores for the examination procedure were similar in all the patients both in the control and the music group.Mean sum of scores for the restorative procedure in the control group was 7.6 and the music group was 8; which was statistically not significant.In the injection procedure for the control group the mean sum of scores was 5.1 and music

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group was 7.3, which was statistically significant with a p value of < 0.005. **DISCUSSION:-**

The aim of the present study was to evaluate the efficacy of using Venham's Picture test for anxious pediatric dental patients in 3 different treatment procedures.

Venham's picture test, which was used in this study, is one of the reliable measures of self-portrayed anxiety in children. It is very effective in measuring the emotional state of the child at the chair side (Venham et al in 1977).<sup>6,7</sup>

As per the observations made in the present study maximum level of anxiety was apparent in the procedures which involved the injection of the local anesthetic solution. But in the music group the anxiety level was shown to be reduced, confirming the physiologic relaxation due to music distraction. The choice of music was left to the patients because playing familiar music which might have helped the child gain control over the unpleasant stimulus and give them a feeling of being in familiar environment as done in a previous study

Reduction in anxiety can be attributed to two reasons as supported by two others<sup>9, 10</sup>

- 1. A child listening to music tends to close his/ her eyes to concentrate on the audio presentation, there by screening out the sight of dental treatment.
- 2. The sound of music will eliminate the unpleasant sounds in dental clinic like the sound of Air rotor hand-piece.

These above two advantages coupled with the effect of music will reduce the anxiety and provide relaxation and also help the dentist to effectively manage the anxious patient. We do confer that music did reduce the anxiety to some extent but not very significantly. Music distraction may be helpful as an adjunct along with other behavior management techniques therefore further research in this field is necessary along with other non-aversive techniques.<sup>11</sup>

## CONCLUSION:

Audio distraction did decrease the level of anxiety in anxious Pediatric dental patients although not to a significant level. Despite lack of any relief from pain

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the patient had an overwhelming positive response to the music presentation and looked forward to hear it in the subsequent visits.Venham's picture test proved to be a reliable measure of selfportrayed anxiety in children.

Venham's picture test has its own limitations such as the figures on the cards are all male; this may present problems if the young patient is a girl. In addition, some of the figures are vague in what they are depicting. Further studies with a larger sample size and modification of pictures to suit a girl patient are needed.

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Fig. 1. Venham's Picture test



Fig. 2 The child pointing at a picture which she feels that resembles her most at that movement



Fig. 3 Child in the music group – during the injection procedure



**Fig. 4** Child in the control(no music) group – During the injection procedure

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