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EVALUATION OF EFFICACY OF DOODLE THERAPY TO REDUCE ANXIETY IN PEDIATRIC PATIENTS

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ABSTRACT

Background: Dental anxiety in children presents a challenge to the child and the dental team. It leads to difficulty in behaviour management resulting to avoidance of dental care. Art making – helps neurological system relax. Brain chemical levels will decrease and bring about relaxation for many people, which also help nervous system calm down. Doodling Therapy is used as a projective measure to calm the racing mind and bring back to it in more quiet, restful space. **Aim:** To evaluate the efficacy of Doodle Therapy to reduce anxiety among Pediatric patients. **Methodology:** An evaluative approach and one group pre-test –post-test design aged 5-11 years was used for this study. Samples were selected with the convenient sampling technique. The level of anxiety was assessed using anxiety scale. Data were collected and analysed. **Result:** Mean anxiety score was reduced from pre- operative time period (4.06 ± 0.83) to post operative time period (2.45 ± 0.83). Statically, significant difference was observed in anxiety score from pre-test assessment to post-test assessment time period. **Conclusion:** Doodle Therapy is cost effective modality that can help to reduce anxiety in Pediatric Patients.

KEYWORDS

Anxiety, Anxiety scale, Art, Dental anxiety, Doodle therapy and Pediatric dentistry.

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INTRODUCTION

Dental anxiety is considered as one of the most common problems in Pediatric dentistry. Dental anxiety is described as anxiety which occurs due to the dental treatment procedure and is related with negative expectations which are often linked to earlier traumatic experiences, negative attitudes in the family, fear of pain and trauma and perceptions of an unsuccessful and/or a painful previous dental treatment¹. Three broad methods of assessing children's dental anxiety include: i) direct

observation of the child's physiological state or behavioural response in the dental context (usually by either dental personnel and/or researchers) ii) the completion of a questionnaire by the parent as a proxy measure of how anxious the child is and iii) self-report scales completed by the child². Overall, self-report measures of dental anxiety completed by the child themselves (where this is feasible) are the most reliable and valid method of assessing anxiety with many benefits for the dental team, service providers and dental public health practitioners³. FIS is a valid measure of dental anxiety for employment with young children in the clinical context⁴. It has been used as a standalone measure which provides an immediate reflection of how the child is feeling, which may be useful for clinicians. Dental anxiety can be managed by psychotherapeutic interventions, pharmacological interventions, or a combination of both, depending on the dentist's expertise and experience, degree of dental anxiety, patient characteristics, and clinical situations. Psychotherapeutic interventions are either behaviourally or cognitively oriented, and recently, the use of cognitive behaviour therapy (CBT) has been shown to be highly successful in the management of extremely anxious and phobic individuals⁵. Mindfulness-based therapy, breath-body-mind-workshop, guided imagery with relaxation, solution-focused therapy, yoga, and multicomponent interventions, art therapy, music therapy have been used to increase the effectiveness of treatment of dental anxiety in Pediatric patients⁶. Art therapy (AT) is a tool which could be used to empower children to improve their self-expression, communication and social skills⁷. It includes simple drawing, painting, sculpting, clay modelling and doodling. While other forms of art therapy may provide an outlet for stress relief, doodling is an outlet for an expression which allows the doodler to find a calm way that doesn't require staying within the lines. Doodling is an aimless sketch, design or scribble often created while listening to or thinking about something else-doesn't really have to turn out a certain way at all⁸. It facilitates children's ability to talk, particularly about those events or concept they might otherwise find difficult to describe. Doodles

have been defined as "diagrams of Subconscious". It is an escape valve for feelings, frustration, anger and other blocked emotions of the subconscious mind and might help in reduce anxiety in dental operator. So, our aim is to evaluate the efficacy of Doodle therapy to reduce anxiety in Pediatric patients.

METHODOLOGY

The present study was conducted in the Department of Pediatric and Preventive Dentistry, College of Dental Sciences and Research Centre, Bopal, Ahmedabad.

A study was conducted among 80 participants of both genders aged 5-11 years attending the outpatients Department of Pediatric and Preventive Dentistry of the institution.

Inclusion criteria

Visiting the department for the first time

Complete physical and mental health without any confounding medical history

Exclusion criteria

Acute pain that required emergency dental treatment
Children suffering from any illness requiring special medical care

Pretest assessment and posttest assessment was done in the children who were selected for the study. After taking parents' consent, patient comes in the department are first evaluate for anxiety by facial image scale. Children were asked to point at which face they felt most like at the moment. A time limit of 10 minutes was taken for each sample for recording facial image scale. After recording the anxiety scale one session of Doodle therapy was provided by giving pencil and paper and ask them to Doodle that represent their thoughts at that time while sitting in the dental operator for at least 20 min. In post session patients were again asked to point out the face they felt after Doodling. The data were recorded. The difference in scoring before and after Doodle therapy were analysed.

RESULTS AND DISCUSSION

SPSS VERSION 20.0 was used for statistical analysis. Chi square test and Wilcoxon Signed Rank test were used. Level of Significance was found $P \leq 0.05$.

Anxiety score 2 was observed in 3.8% subjects, 3 in 20% subjects, 4 in 42.5% subjects and 5 in 33.8% subjects at pre-operative assessment time period. Anxiety score 1 was observed in 13.8% subjects, 2 in 37.5% subjects, 3 in 38.8% subjects and 4 in 10% subjects at post-operative assessment time period. Statistically, significant difference was observed in anxiety score from pre-test assessment to post-test assessment time period.

Mean anxiety score was reduced from pre-operative time period (4.06 ± 0.83) to post-operative time period (2.45 ± 0.85). Statistically, significant difference was observed in anxiety score from pre-test assessment to post-test assessment time period.

Discussion

The most important factor influencing children's cooperation during dental treatment is anxiety⁹. The concept of anxiety and its effect upon the human behavior was first studied by Freud and was given three types of anxiety: 1. Reality anxiety, 2. Neurotic anxiety, 3. Model anxiety and Freudian theory which leads to the development of other theories of anxiety. Folayan *et al*¹ reported a worldwide prevalence of 3 to 43%¹⁰. Dental anxiety has been strongly associated with poor oral health. Eitner *et al* reported that the avoidance of the dental treatment was high in dentally anxious patients and they also had increased caries morbidity and DMFS scores¹¹. The long-term consequences for the dentition explains about the role of dental anxiety which leads to increased use of antibiotics and analgesics¹². According to the result of this study, it was revealed that Doodle Therapy can reduce anxiety in children as expressive therapy. Mean anxiety score was reduced from pre-operative time period to post-operative time period. Statistically, significant difference was observed in anxiety score from pre-test assessment to post-test assessment time period. Motivating interventions such as information, relaxation, and cognitive coping strategies given preoperatively can minimize children's pre- and post operative anxiety and increase their cooperation. The ideal measure should be valid, allow for limited cognitive and linguistic skills, and be easy to administer and score in a clinical context¹³. Facial image scale is one of the scales that covers almost all

criteria. At the age between 3-7, child will start to use various combinations of circles, squares, and lines to represent objects in their environment¹⁴. The verbal skills of children in this age group are often quite limited; therefore, we used FIS based on facial images and have proven to be valid instruments in many studies⁴. There are wide range of research was conducted on additional therapy to reduce anxiety. Researchers reviewed more than 200 studies of mindfulness among healthy people and found mindfulness-based therapy was especially effective for reducing stress, anxiety and depression¹⁵. Emma Seppala *et al* said that breathing exercises engages the parasympathetic nervous system, which is responsible for the body's "rest and digest" activities, helping you to calm down and think rationally in the face of stress¹⁶. Yinger and Gooding in 2015 and Kim and Stegemann in 2016 did study on music therapy to reduce pain, anxiety and stress in medical procedure and found a good positive result¹⁷. Research confirms the beneficial psychological effects of some arts, on the mental states of certain patients. Art therapy is a non-pharmacological therapeutic method that generally aims to enable a client to transform and build his/her character using art materials in a healthy and safe environment⁷. Many researchers conducted research on art therapy to reduce anxiety. Bosgraaf *et al*. Showed that art therapy is effective in improving psychosocial problems in children¹⁸. Golamzadeh *et al*. reported that art therapy based on painting therapy is effective in reducing the symptoms of depressive disorder in elementary school boys¹⁹. Therefore, art therapy provides patients with the opportunity to express their thoughts and feelings and communicate with others⁷. Rezaee *et al*. Also reported that painting therapy is effective in decreasing aggression and anxiety among elementary school students²⁰. In his book, Peace, Love, and Hope, Dr. Bernie Siegel (1990) suggests that all health-care providers add a box of crayons to their list of diagnostic and therapeutic tools. From his clinical experiences with cancer patients of all ages, he observed that drawing was an easy and reliable way to help people open up and talk about feelings or experiences they might not otherwise share²¹.

There are many clinical examples that exist in the extant literature that illustrate the use of art making with children across a variety of clinical settings. In Koplewicz and Goodman’s (1999) book *Childhood Revealed: Art Expressing Pain, Discovery, and Hope*, children and adolescents, with a variety of emotional, learning, and physical disorders, share and explain their artwork and drawings. The versatility of artwork for assessment and intervention allows it to be applied in a wide range of therapeutic settings and across various cultural and ethnic contexts²².

It is important to note that children especially younger age groups, may not always be able to express their exact feeling and anxiety verbally⁷. Doodle Therapy become a medium where kids can express their suppressed emotion which they may not be aware of.

Table No.1: Pre and Post-test assessment of anxiety score in percentage

Anxiety score	N (%)		P Value
	Pre-test assessment	Post-test assessment	
1	0 (0%)	11 (13.8%)	≤ 0.05*
2	3 (3.8%)	30 (37.5%)	
3	16 (20%)	31 (38.8%)	
4	34 (42.5%)	8 (10%)	
5	27 (33.8%)	0 (0%)	
Total	80 (100%)	80 (100%)	

Level of Significance $P \leq 0.05$, * Significant, ** Non significant

Table No.2: Mean and standard deviation of pre and post-test assessment of anxiety score

S.No	Time	Number	Anxiety score		P Value
			Mean	SD	
1	Pre-test assessment	80	4.06	0.83	≤ 0.05*
2	Post-test assessment	80	2.45	0.85	

Level of Significance $P \leq 0.05$, * Significant, ** Non significant

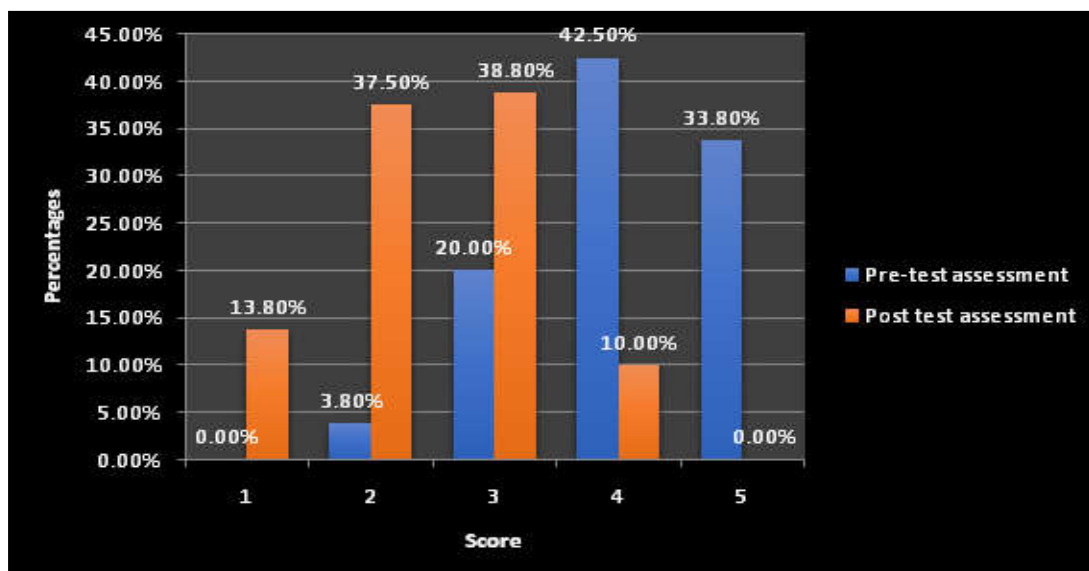


Figure No.1: Graphic presentation of pre and post-test assessment of anxiety score

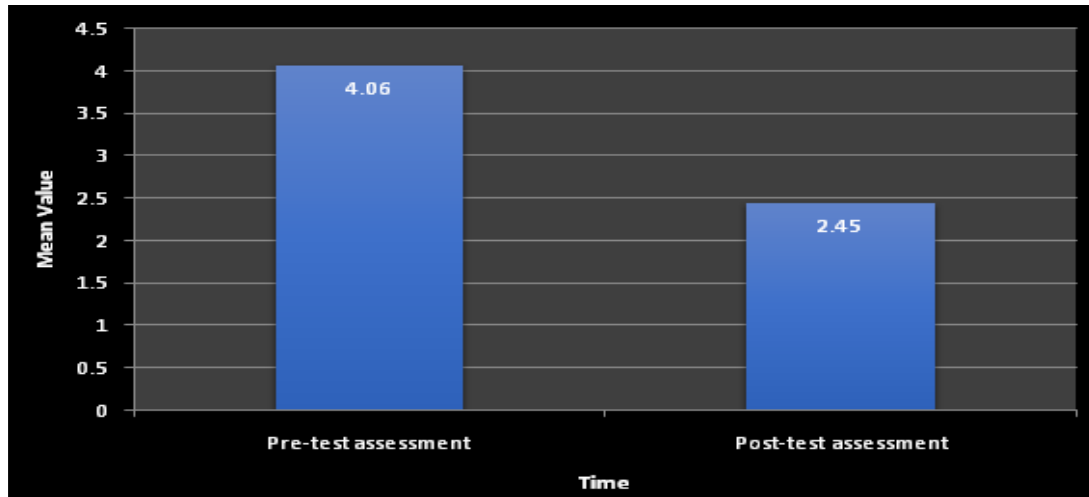


Figure No.2: Graphic presentation of Mean value of pre and post-test assessment of anxiety score

CONCLUSION

A child with anxiety will not open up to someone that they do not trust. When good rapport is established, the sessions will become a safe space for the child to eventually share their ideas, when they feel comfortable. Doodling is one of the ways our mind uses for self-expression. Doodling has been rightly defined as diagrams of subconscious. The repetition of shapes in doodles help the child to relax and sooth the mind and the body. It induces relaxation, by stimulating a flow-like state of mind, presumably leading to a reduction of cortisol levels and hence there is stress and anxiety reduction (stress regulation). It makes the unconscious visible and thereby creating possibilities to investigate emotions and cognitions, contributing to cognitive regulation.

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CONFLICT OF INTEREST

None

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