

# Effect Of Magic Ploy And Humour Distraction Technique: An Allay Integral Of Anxiety Levels In Children

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**Conflicts of Interest: Nil**

## Abstract

**Background:** The child's fearful behaviour may impede the efficient delivery of dental care and increase the risk of damage to the children. Magic trick is a new epoch in dentistry that can be used in strong willed children. It distracts the kid from anxiety while undergoing procedure and helps them to relax.

**Aim:** To evaluate the change in behaviour during the endodontic and surgical procedure in children using different distraction aid

**Objectives:** To assess the behavioural attitude and anxiety level before and after the operative procedure in children

**Methods:** A total of 30 children of the age group 3-10 years who were recognized as strong willed, were selected for the study. Children undergoing endodontic and surgical procedure under local anaesthesia administration were randomly allocated into 3 different groups and assessed using different distraction aids. Group 1 magic group (thumb and light trick), Group 2 Humour group (Takling Tom) and Group 3 Tell show do (Control group). Anxiety were assessed before and after the procedure using the Facial Anxiety Scale

**Results:** Mean anxiety levels were observed to be significantly reduced with the magic group using the thumb and light trick, followed by the humour group and then with tell show do group.

**Conclusion:** The use of magic distraction aid significantly reduced anxiety levels in children while undergoing operative procedure.

## Introduction:

Behavioral management approaches are strategies that improve a child's capacity for handling difficulties, eventually resulting in full cooperation and acceptance during dental operations. These methods seek to reduce kids perceptions of dental care as terrifying or burdensome.<sup>1</sup> According to the AAPD, behaviour management techniques can be non-pharmacological or pharmacological. Several non-pharmacological behaviour management strategies encompass voice control, hypnosis, classical conditioning, aversive conditioning, distraction techniques, guided imagination, desensitization, parental presence/absence, memory restructuring, Tell-Show-Do (TSD), Ask-Tell-Ask, Animal-assisted therapy (AAT) and Eye movement desensitization and reprocessing (EMDR) <sup>2</sup>. Most non-pharmacological behavior management techniques rely primarily on communication. Moreover, it is crucial to establish clear and effective communication to manage young children effectively<sup>3</sup>. The delivery of high-quality dental care can be severely hampered by uncooperative behavior, which also raises the possibility of harm to the kids and eventually leaves the parents unsatisfied.. The recalcitrant kid has been identified as one of the most challenging issues in clinical practice, according to surveys of clinicians.<sup>4</sup>Any behavioral management technique for pediatric dentistry patients must be based on empathy and concern for each child's welfare.<sup>5</sup>

Dental anxiety is a frequent psychological and intuitive sensitivity that is elevated in children. In a dental context, anxiety might show up as a behaviorally disagreeable attitude. Such obstinate attitude may lower the quality of treatment, which might have serious consequences

like therapy delays or early cessation.<sup>6</sup> Dental professionals may successfully treat children with behavioral issues and manage them in a stress-free environment because to the amazing immersive, captivating, and inventive features of these contemporary distraction techniques .<sup>7</sup>

In this study, a novel method for controlling strong willed children called magic trick or thaumaturgy was employed. Isaac Bonewits defined thaumaturgy as “the use of magic for non-religious purposes; the art and science of wonder-working. Thaumaturgy is a tool that allows the dentist to do required treatments while diverting and soothing the kid.<sup>8</sup>

## Materials And Methods

The study was undertaken in the Department of Paediatrics and Preventive Dentistry, M..M College of Dental Sciences and Research, Mullana, Ambala. Thirty healthy, strong-willed children between the age group 3 years to 10 years requiring dental treatment procedures under local anesthesia were selected for the study. Only those children with a Facial Anxiety Scale (FAS) score between 2 and 5 were included in this study. Children requiring emergency management and who did not have parental consent were excluded. The children were categorized into three different distraction technique groups (Table 1). Group 1- Thumb and light trick, Group 2- Talking Tom ,Group 3 - Tell Show Do (Control group) . Facial Anxiety Scale Score was recorded before and after local anaesthetic administration.

**Table 1: Sample Distribution**

Groups	Participants(3-10 Yrs)
Thumb & Light trick	10
Talking tom	10
Tell show do	10

### *Inclusion Criteria:*

- Children (Males and Females) between 3-10 years of age
- Children with facial anxiety scale (FAS) score between 2 and 5

### *Exclusion Criteria:*

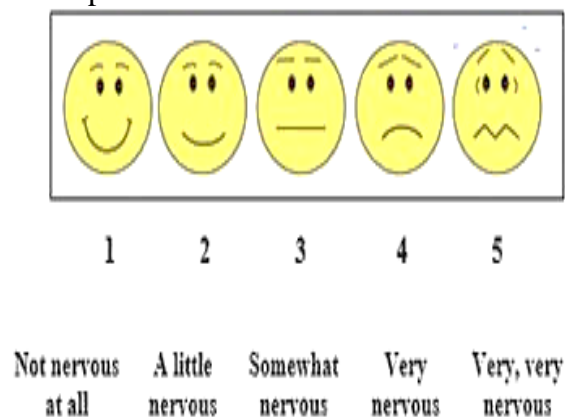
- Medically or physically compromised children
- Children requiring emergency treatment
- Children who did not have parental consent

## **Methodology:**

### Step I

Preoperative anxiety assessment

Measured by facial anxiety scale (Fig. 1) and a particular score was recorded



**Fig 1: Facial anxiety scale**

### Step II

#### Group 1

#### **Magic Group (Thumb and light trick):**

The operator wore a thumb cover which manipulates the original finger with a lighting device attached to their thumb, which they could use to operate by themselves according to their wish. Several artistic movements were conducted with the theme to maintain interest in patients.



**Fig2: Thaumaturgic thumb light**

#### Group 2

**Humor Group (Talking Tom):** In group II Talking Tom, was introduced. It's a virtual pet cat which is fully animated 3D character, that children can interact with, including tickling, laughing, poking and talking, whatever the children speak can be repeated by Talking Tom in a funny voice.



**Fig2: Talking Tom**

#### Group 3

#### **Tell show do:**

This distraction technique involves explaining the procedure by the operator to the child according to their age (Tell) and demonstrating or showing them the procedure (Show) and then performing the procedure on the child (Do).

### Step III

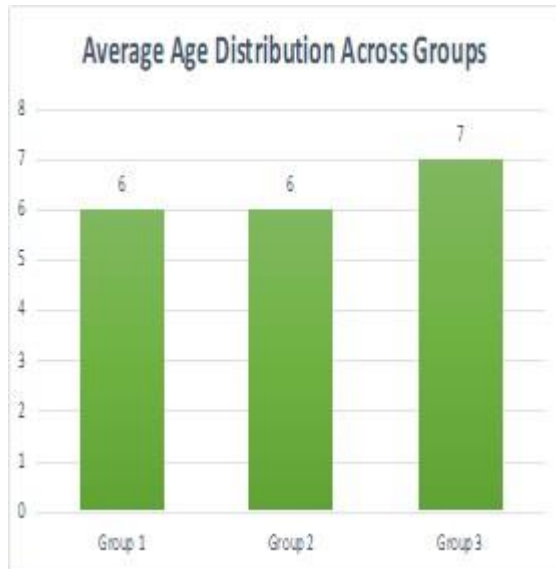
#### **Post operative anxiety assessment**

Measured by facial anxiety scale and a score was recorded and compared with the pre-operative anxiety score.

### Statistical Analysis:

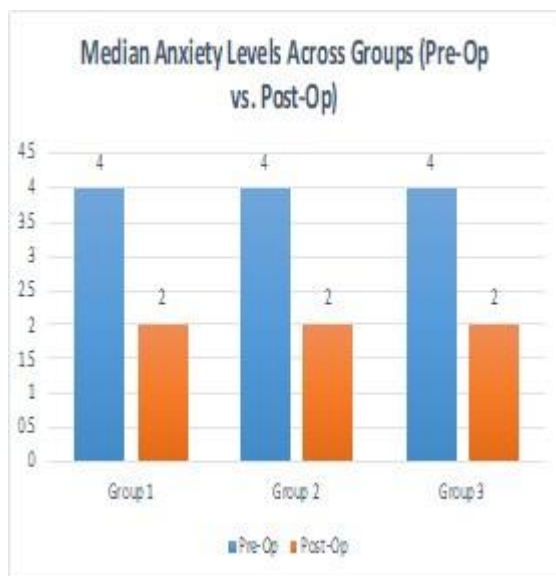
The obtained data was calculated using relevant statistical tool such as using R Studio software (R Programming).

### Results:



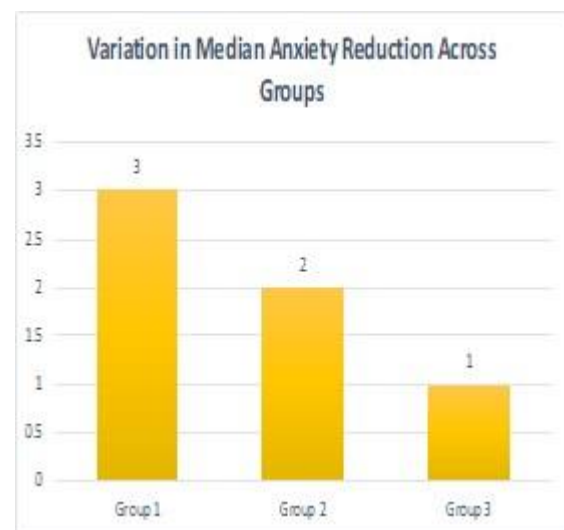
**Fig 4: Age Distribution across groups**

Both Group 1 and Group 2 have an average age of 6, indicating that the age distribution is similar in these two groups. In Group 3 have an average age of 7 years. (Fig:4)



**Fig 5: Median Anxiety Levels Across Groups (Pre-Op vs. Post-Op)**

The median pre-op anxiety level is 4 for all three groups, indicating that anxiety levels before the procedure were similar across groups. The post-op median anxiety level has dropped to 2 across all groups, suggesting that the intervention or treatment was effective in reducing anxiety. Since the median anxiety reduction (4 → 2) is identical across groups, it suggests that all groups benefited equally from the intervention. This could mean that no single group had a more significant advantage over the others in terms of anxiety reduction (Fig 5)



**Fig 6: Variation in median anxiety reduction across groups**

Group 1 had the most significant decrease in anxiety levels post-op, suggesting that Group 1 was the most effective in reducing anxiety. The median reduction in anxiety level under group 2 is moderate, but not as strong as in group 1. Group 3 indicates the least anxiety reduction with median reduction equal to one. (Fig 6)

**Significant Anxiety Reduction Across All Groups:** The median pre-op anxiety level (4) dropped to a median post-op level of 2, indicating that the intervention was effective in reducing anxiety across all groups. However, Group 1 showed the highest reduction followed by Group 2 and

Group 3 suggesting variations in effectiveness.

### **Age Might Influence Anxiety Reduction:**

Groups 1 and 2 had an average age of 6, while Group 3 had an average age of 7. Since Group 3 showed the least anxiety reduction, older participants might have different coping mechanisms or require different intervention strategies.

### **Discussion:**

A child's behaviour can deteriorate as a result of anxiety, which is an inevitable response to stressful circumstances. Long-term consequences of preoperative anxiety in paediatric children include higher postoperative discomfort and more difficult sessions.<sup>9</sup> With the goal to enhance communication between dentists, kids, and parents, the majority of non-pharmacological behaviour management strategies seek to comprehend children's cognitive, emotional, and social development.<sup>10</sup>

The present study was conducted between children 3-10 years of age group. The graphical representation of results of the study (Fig. 5 and Fig. 6), that there was a significant reduction in the anxiety levels of the children toward dental treatment procedures with the use of thaumaturgic ie, thumb and light distraction techniques. The method was directly correlated with children's cognitive development. The thumb light trick significantly reduced the anxiety level among children in different age groups.

Brain is composed of two hemispheres, the left and the right, and specific functions have been attributed to each. Right-handed people's left hemisphere is best represented by their voluntary and linguistic abilities. It is also believed that the right hemisphere is associated with imagination. Thus, the right hemisphere of the brain plays a major role

during the use of thaumaturgic techniques.<sup>11</sup> Isaac Bonewits defined thaumaturgy as "the use of magic for non-religious purposes; the art and science of wonder-working".<sup>12</sup> The thaumaturgic techniques were specifically designed for a cognitive age group and when used appropriately the subjects comprehended effectively.

Humour group (TalkingTom) showed the reduction in anxiety levels in children followed by Thaumaturgic distraction technique. Talking Tom Cat repeats what subject Says, sensors on whole body when touched sings rhymes and songs, musical cat toy for kids. The left hemisphere in right-handed people is characterized with verbal and voluntary skills. Language, speech analysis, and problem-solving are mediated on this side. The right side can be associated with non-verbal skills and emotions<sup>8</sup>.

In both groups 1 and 2 average age group was 6. While contemplating cognitive development, we cannot ignore the great contribution of Jean Piaget. Piaget suggested that when young infants experience an event, they process new information by balancing assimilation and accommodation.<sup>13</sup>

"Pre-operational" stage (ages 2 to 7 years), when a kid is able to use mental representations, such language and symbolic cognition. This age group of kids learns to mimic and act out scenarios. Egocentrism, or the inability to recognise that other people may think differently, whether positive or negative, is somehow related to oneself, is what defines this stage.<sup>13</sup>

In this study, group 3 was subjected for Tell show do distraction technique. Among the group average age among the subjects was 7 years. TSD was introduced by Addleston in 1959. This tactic reduces their anticipated concern by acquainting them with new procedures.<sup>14</sup>



This approach involved introducing new tools or processes to the kids through explanations and examples, then showing them how to use the tool or apply the technique. In this study Tell Show Do (TSD) distraction technique showed least reduction in anxiety levels compared to other two distraction groups. The research conducted by Cuthbert et al. (1982) reported that children aged 6–7 years exhibited the most pronounced levels of dental anxiety.<sup>14</sup>

In accordance with Rakesh K et al. (2023) conducted a study on Comparative Evaluation of Impact of Three Different Thaumaturgic Behaviour Modification Techniques in Reduction of Anxiety at Three Different Stages of Cognition in Children Aged 2–13 years. Study concluded that Thaumaturgic methods have been useful in controlling children's conduct throughout a range of age groups.<sup>8</sup> In supportive to current study, Lekhwani P. et al. (2024) conducted a systematic review on Thaumaturgical Distraction as a Modality for Reducing Dental Anxiety in Children. Review concluded that Within the limits of the available studies, significantly lower anxiety is exhibited in the children treated under the thaumaturgical distraction group as opposed to the control group.<sup>3</sup>

### Conclusion:

Thaumaturgic techniques have proven effective in managing the behaviour of kids across a variety of age groups. However, the treatment's approach is essential to its effectiveness. The use of magic distraction aid significantly reduced anxiety levels in children while undergoing operative procedure. Therefore, magic epoch can be employed as a novel form of distraction for kids with strong wills.

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