

## Comparative Assessment of the Impact of Two Different Distraction Strategies as a Non-Pharmacological anxiolytic among Hospitalized Children

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### Abstract

**Background and Aim:** Before surgery, children are extremely anxious. Preoperative anxiety affects how well anaesthesia is administered and is linked to a number of both immediate and long-term postoperative problems. The goal of the current study was to compare the effectiveness of two different distraction techniques as a non-pharmacological anxiolytic for hospitalised children.

**Materials and Methods:** The study included 150 children, both genders, who were hospitalised to the paediatric ward of the study hospitals and ranged in age from 3 to 12 years. Three separate management teams were established: the distraction card therapy group, the animated cartoon video group, and the control group. During the vital signs process, ACV and DCT were guided for 20 minutes in their respective groups, and anxiety was assessed before to, during, and after the 5-minute phase using a modified child faces anxiety scale.

**Results:** The total anxiety scale test score between the DCT and ACV groups did not differ significantly ( $p > 0.05$ ). Significant correlations between age groups and DCT anxiety test results have been found. ACV and CG anxiety test scores as well as DCT and CG anxiety test scores both showed significant differences ( $p 0.001$ ).

**Conclusion:** When compared to DCT, ACT is a more effective and dominant non-pharmacological technique for lowering anxiety levels in paediatric individuals. Children of preschool and school age can effectively lower their preoperative anxiety levels by using distraction techniques.

**Keywords:** Animated Cartoon Video, Anxiety, Children, Distraction Card Therapy

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### Introduction

Hospitalization is a serious public health concern because it can cause notable stress and anxiety in a large paediatric population

[1]. Various medical procedures, particularly those requiring a needle, are one of the most frequent causes of anxiety, tension, and pain

in kids [2]. Children's hospitalization-related stress may result in hostility, behavioural regression, non-cooperation, and obstruction of the healing process [3,4]. A child's response to worry and stress may vary depending on their age, sex, developmental stage, management, cause for hospitalisation, and prior pain experience [5,6]. It has been determined that pain in kids and teenagers is a significant public health issue. Seven medical procedures that include the use of a needle are the most frequent and significant sources of pain for children, including those that result in anxiety, discomfort, and dread, include venipuncture and vaccination [7-10]. Pain in children can have long-term physical and psychological repercussions if it is not promptly and appropriately addressed. Therefore, it is crucial that all healthcare professionals comprehend the significance of providing children with proper pain management [11]

Distraction is a quick and efficient method for diverting kids' attention from unpleasant stimuli. There are, however, a wide range of methods and tools used to divert people [12]. Recently, it has been demonstrated that distracting yourself with cards works well for phlebotomy pain management [13,14]. Music has also been used by nurses to lessen discomfort for a long time [15-18]. It has been demonstrated that music can help children undergoing intravenous placement feel less pain and suffering [19]. Music can be used as a supplemental therapy to relieve perioperative stress and to manage both acute and chronic pain because it is affordable, simple to use, and free from side effects. It has also been demonstrated that diverting a child during phlebotomy by blowing up a balloon is an effective way to manage pain. [20]

Pharmacological and non-pharmacological approaches are used to treat pain. Non-pharmacological strategies include noisy activities like singing, reading, or playing games. The pharmacological method

involves using medications to reduce pain, anxiety, and stress. On the other hand, pharmacological approaches have few drawbacks that limit their enduring usage and tolerance, likely central nervous system (CNS) and gastrointestinal side effects in small children, high charge, etc.[21,22]

Rarely are studies evaluating two or more non-pharmacological approaches for managing anxiety and stress in hospitalised patients reported, and when they are, the distraction techniques are rarely meaningfully contrasted, especially in Indian settings. [23,24] The current study was conducted to compare the effects of two different distraction techniques as a non-pharmacological anxiolytic among hospitalised children.

### Materials and Methods

The current descriptive study was conducted over a two-month period at tertiary care hospitals' departments of paediatrics. The institutional ethical committee provided its ethical approval, and each subject provided signed informed permission.

One hundred and fifty children of either gender between 3-12 years, admitted in the pediatric ward of the tertiary care institute of India, were incorporated in the research. Children, who were critical, had vision and hearing issues, on anxiety dipping drugs, were disqualified from the research.

Following a thorough assessment of the literature, the implement was chosen and grown depending on the research. This involved consulting books and journals, as well as talking to specialists and the guide. The effectiveness of two different distraction techniques on the anxiety level of hospitalised children in the paediatric ward of chosen hospitals was evaluated using a questionnaire on selected sociodemographic variables and the Modified Child Faces Anxiety Scale. The following sections made up the tool: Section A: Sociodemographic

Information It included 10 items to gather data on the predetermined background elements, such as age in the chosen year, gender, habitat, number of siblings, mother's and father's ages, etc. Modified kid faces anxiety scale in Section B (Wong-Baker FACES) [25].

The explanation of total anxiety scale score (before, during and after the procedure) was performed on following basis:

- Mild anxiety - (0-5)
- Moderate anxiety - (6-10)
- Severe anxiety - (11-15)

A pre-assessment was conducted using specific sociodemographic information. Modified Child Faces Anxiety Scale was used to measure anxiety in the ACV, DCT, and control groups. Anxiety was measured before, during, and after the 5-minute procedure using the modified child faces anxiety scale. ACV and DCT were delivered for 20 minutes in each group during the vital signs procedures (Wong-Baker FACES). 25 Anxiety was measured prior to, during, and after the 5-minute vital sign process in the control group using the same scale as it was for the intervention group.

### Statistical analysis

The recorded data was compiled and entered in a spreadsheet computer program (Microsoft Excel 2007) and then exported to data editor page of SPSS version 15 (SPSS

Inc., Chicago, Illinois, USA). For all tests, confidence level and level of significance were set at 95% and 5% respectively.

### Results

Out of 150 individuals, 50% were between the ages of 3 and 6 and the remaining 50% were between the ages of 6 and 12. The majority of youngsters in the ACV and DCT groups were male, indicating a male predominance.

There was no discernible difference between the DCT and ACV groups' mean test scores on the whole anxiety scale ( $p > 0.05$ ), while the DCT group's mean test score was slightly higher than the ACV group's (Table 1). Given that the majority of children in the age range of 3-6 years had moderate anxiety levels and the majority of children in the age range of 7-9 years had high anxiety levels, there was a significant link between different age groups and their ACV anxiety post-test scores ( $p < 0.05$ ). (Table 2).

As more kids in the age groups of 3-6 years as well as 6-12 years exhibited moderate anxiety levels, a significant link between different age groups and their DCT anxiety test scores was found ( $p < 0.05$ ). This calls for the assumption that young children and toddlers are both more prone to anxiety and relatively less enhanced by DCT treatments. There was a significant difference between the ACV and CG anxiety test scores as well as the DCT and CG ( $p < 0.001$ )

**Table 1: Comparison between post-test anxiety score in ACV and control group**

Group	Post-test Anxiety Score Mean±SD	P value
ACV	5.87±2.54	0.009
DCT	7.90±3.40	

Statistically significance at  $p \leq 0.05$ ; ACV: animated cartoon video

**Table 2: Association between ACV post-test anxiety score and age group**

ACV post-test anxiety score interpretation	Age group (in years)		P value
	3 to 6 (N=25) n (%)	6 to 12 (N=25) n (%)	
Mild	10 (40)	8 (32)	<b>0.005*</b>
Moderate	12 (48)	11 (44)	
Severe	3 (12)	6 (24)	

\* Indicates statistically significance at  $p \leq 0.05$ ; Test applied chi-square test

## Discussion

Children may experience worry, fear, and anxiety when experiencing pain during common medical procedures carried out in hospitals, such as phlebotomy and immunization [26,27]. The American Society for Pain Management Nursing advises that the best pain control be given both before and during difficult treatments. Therefore, it is important to use both pharmaceutical and non-pharmacological methods to manage acquired pain and the subsequent anxiety. Distraction is one of the most popular and successful strategies used today to lessen patients' perception of pain during medical procedures [28]. Distraction techniques are frequently employed to lessen procedural discomfort and anxiety [20-25]. To distract the patient's attention during medical treatments, numerous techniques are used [26,29]. Distraction cards (Flippits) have recently been shown to be extremely efficient in lowering procedural discomfort and anxiety in children undergoing phlebotomy by Inal and Kelleci (2012) and Canbulat *et al* (2014).

In the current study, the control group had considerably higher post-test anxiety scores than the ACV intervention group, which was documented. This concurs with the study done by Maharjan *et al.* (2017) [30]. Among other non-pharmacological treatments, watching animated cartoons with children might help them concentrate on other stimuli, which can help with anxiety and pain before or during medical procedures.

The control group displayed noticeably high post-test anxiety scores when assessed alongside the DCT intervention group, as was the case with the ACV group. Similar results were seen by Sahiner and Bal (2016).

There were more kids in the ACV group who experienced mild anxiety than in the DCT group who experienced moderate anxiety, but the difference was minor. This is consistent with Oliveira *et al* research's findings (2017) [31]. Many patients indicated that music helped them feel less anxious and behave more aggressively, according to numerous studies [24-28].

In the emergency department, children between the ages of 6 and 16 were subjected to blood collection, and Press *et al.* (2003) [32] investigated the effect of music on lowering pain. They observed no significant differences from the control group. It was compared the efficacy of a local anesthetic cream with music distraction in reducing or preventing pain from needle puncture in children [33]. The results showed that lidocaine-prilocaine emulsion was highly effective in preventing pain from venipunctures in young children.

As toddlers and very young children (ages 3-6) were shown to be more prone to anxiety and reasonably less valuable by DCT than ACV intervention, different age groups of children and their ACV and DCT posttest anxiety ratings demonstrate substantial relationship with each other. The youngsters aged 6 to 12 years, however, were more favourably pretentious as a result of both

therapies. This follows the investigation by Aydin *et al* [34].

It is generally acknowledged that most kids who have previously undergone a gruelling medical procedure worry and fear having similar procedures done to them in the future. Therefore, it's crucial for kids to have better pain management in clinical practise to lessen the emotional effects of difficult operations. A successful pain management strategy should be used to prevent the negative impacts of unpleasant medical treatments in the future.

### Conclusion

According to the results of the current investigation, ACT is a more effective non-pharmacological intervention than DCT for lowering anxiety levels in paediatric participants. Children of preschool and school age can successfully lower their preoperative anxiety levels by using distraction tactics. The concept of distraction must be used by healthcare professionals while treating children who have had surgery. The optimum distraction strategies will be determined by further study with bigger samples in a variety of contexts, as well as by determining whether these strategies have a beneficial effect on postoperative care.

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