



## EFFECTIVENESS OF ANIMATION SONG IN REDUCING THE BEHAVIOURAL RESPONSE TO PAIN AMONG TODDLERS RECEIVING IMMUNISATION IN SELECTED PHCS IN MANGALORE, KARNATAKA

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### ABSTRACT

Immunisations help prevent the spread of disease and protect infants and toddlers against dangerous complications. Pain is the most frequent local adverse event following immunisation. Children remember pain, and may avoid future medical care. Distraction helps a child of any age, shift his or her attention away from pain to other activities. A quasi-experimental post- test only control group design with an evaluatory approach was used in the study. The study was conducted in Amblamogaru and Kudupu PHCs at Mangalore. Non-probability purposive sampling technique was used to select 60 toddlers, 30 toddlers in the experimental and 30 toddlers in the control group, allocating one PHC to the experimental and the other to the control group. FLACC pain scale was used for assessing pain. During the procedure experimental group was exposed to an animation song whereas the control group underwent routine care. The findings of the study show that there was a significant decrease in the mean level of pain for the toddlers who received animation song than those who did not receive it. Hence animation song is effective in reducing the behavioural response to pain among the toddlers who are subjected to undergo immunisation.

**KEYWORDS:** Animation Song; Effectiveness; FLACC pain scale; Immunisation.

### INTRODUCTION

Health of children has been considered as of vital importance to all societies. Child health depends upon preventive care. Majority of the child health problems are preventable Dutta, P. (2009). Immunisations help prevent the spread of disease and protect infants and toddlers against dangerous complications. Pain is the most frequent local adverse event following immunisation Gidudu, J. F., et al. (2012). Learning to handle pain in paediatric patients perhaps is one of the most difficult challenges professionally and emotionally Susan, M., & Geric, M. D. (2005).

In addition, negative experiences with needles may trigger needle phobias, known to be associated with subsequent non-compliance with immunisation and other preventive healthcare measures. Attending to immunisation pain supports immunisation. This is because it: reduces suffering, which improves the immunisation experience and reduces subsequent non-compliance as a result of minimising injection-induced anxiety and pain. It also maintains the ethical principle of 'do not harm'.

According to the International Association for the Study of Pain (IASP), "Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage." Relief of pain is a basic need and right of all children. Management of pain in the child must be individualised. The nurse must be aware of the child's response to pain through the assessment of behavioural responses and differentiation of crying. Distraction is a non-pharmacological intervention that diverts attention from a noxious stimulus.

The experience of pain during immunization can lead to significant distress in toddlers, often resulting in negative behavioural responses such as crying, withdrawal, and increased anxiety. Various studies have explored interventions aimed at minimizing these responses, with a particular focus on the use of music and animated



content as effective tools.

Research has shown that music therapy can significantly reduce anxiety and pain perception in paediatric patients. A study by Kain et al. (2007) found that children who were exposed to music during medical procedures exhibited lower levels of distress and reported less pain compared to those who did not receive musical intervention. This suggests that music serves as a powerful distraction, helping to alleviate the emotional and physical discomfort associated with painful procedures.

Animation songs, which combine visual and auditory stimuli, may enhance this effect. The vibrant colors and engaging characters typical of animated content can capture a child's attention, making the experience of receiving an injection less intimidating. A study conducted by Koller and Goldman (2012) indicated that animated videos significantly reduced anxiety levels in children undergoing medical treatments. This aligns with the theory of distraction, where engaging stimuli can redirect a child's focus away from pain. In the context of immunization, a randomized controlled trial by Hockenberry et al. (2011) demonstrated that children who listened to music or watched animated videos during vaccinations had a decreased pain response. The authors noted that the combination of auditory and visual stimuli not only provided distraction but also fostered a more positive emotional environment, contributing to a smoother immunization experience. Furthermore, the development of age-appropriate content is crucial in maximizing the effectiveness of animation songs. Research by D'Cruz et al. (2019) emphasized the importance of tailoring musical interventions to the developmental stages of children. They found that songs that are simple, repetitive, and accompanied by engaging visuals are particularly effective for toddlers, as they resonate more with their cognitive and emotional capabilities. In Mangalore, Karnataka, the cultural context may also play a role in the effectiveness of animation songs. Local folklore and familiar melodies can enhance the relatability of the content, making it more effective in reducing anxiety and pain. A study by Ramesh et al. (2020) highlighted the significance of culturally relevant interventions in paediatric care, suggesting that incorporating local elements into animated songs could further improve their impact.

Researcher suggests that animation songs can be an effective intervention for reducing behavioural responses to pain among toddlers receiving immunization. By providing distraction through engaging auditory and visual elements, these songs can help mitigate anxiety and discomfort during medical procedures. This approach not only enhanced the immunization experience for children but also support healthcare providers in delivering more compassionate and effective care.

## OBJECTIVES OF THE STUDY

The objectives of study are to:

- Assess behavioural response to pain among toddlers receiving immunisation in experimental and control groups.
- Evaluate the effectiveness of animation song on behavioural response to pain among toddlers receiving immunisation in the experimental group.
- Find the association between behavioural response to pain among toddlers and their selected demographic variables in the experimental group.
- Find the association between behavioural response to pain among toddlers and their selected demographic variables in the control group.

## HYPOTHESES

The hypotheses will be tested at 0.05 level and 0.001 level:

**H1:** There will be significant difference between the mean behavioural response to pain among toddlers in the experimental and the control group.



**H2:** There will be significant association between behavioural response to pain among toddlers undergoing immunisation and their selected demographic variables in the experimental group.

**H3:** There will be significant association between behavioural response of pain among toddlers undergoing immunisation and their selected demographic variables in the control group.

## METHODS

Quasi-experimental post-test only control group design was adopted for the study. This consists of the experimental group and the control group. The investigator selected samples by non-probability purposive sampling technique, allocating one PHC to the experimental and the other to the control group. The animation song was shown to the experimental group during immunisation but withheld from the control group.

The research design, post-test only control group design is given below:

Group	Intervention	Observation
E	X	O1
C	-	O1

E: Toddlers receiving immunisation in the experimental group

C: Toddlers receiving immunisation in the control group

X: Animation song provided to the experimental group by using laptop

O1: Observation made by the investigator in the experimental group and the control group during immunisation among toddlers using FLACC scale (face, leg, activity, cry, consolability).

The samples were selected by non-probability purposive sampling technique, allocating one PHC to the experimental and the other to the control group. Based on the inclusion criteria thirty samples each were selected into the experimental group as well as the control group. The demographic data was collected from the parents using the demographic proforma and FLACC pain scale was used for assessing pain for both the experimental group and the control group. During the procedure, the experimental group was exposed to an animation song which was provided by using laptop whereas the control group underwent routine care. The showing of the animation song had been designed for 5-6 minutes before the procedure, which continued during the procedure and after the procedure. The staff nurse and care taker were instructed to encourage the toddler to watch the song using comments such as 'watch the song' and 'look the bird is flying'. The investigator assessed the toddler's level of pain during immunisation using FLACC pain scale. Ethical clearance had been obtained.

## RESULTS AND DISCUSSION

The present study reveals that majority of the samples 21 (70.0%) in the experimental group had pain score in the range of 4-6, that is moderate pain and 4 (13.3%) had pain score in the range of 1-3 that is mild discomfort, rest 5 (16.7) had pain score in the range of 7-10 which is severe pain. Whereas in the control group majority of the samples 26 (86.7%) had pain score in the range of 7-10, that is, severe pain and rest 4 (13.3%) had pain score in the range of 4-6 which is moderate pain. It indicates that the experimental group with animation song helps to reduce the level of pain experienced by the toddlers during immunisation.

## CONCLUSION

### Implications

The findings of the study have shown that the animation song was effective in reducing the behavioural response to pain among toddlers during immunisation.

### Nursing practice

Distraction strategies are safe, non-invasive, and inexpensive, and most of these are independent nursing functions. Animation songs have been demonstrated to be an effective focus interesting most children and seem



a safe and easy to administer stimulus for distraction therapy. So, it can be easily used by nurses in the clinical practice of paediatric department as useful to alleviate pain.

### **Nursing education**

The use of non-pharmacological pain-relieving interventions such as distraction is one of most important aspects to be included in the nursing curriculum and nursing education. This knowledge and learning experiences of students will help in adopting various comforting measures in their care for the clients in hospitals and health centres.

### **Nursing practice**

Nurse administrators should be able to make a policy in using distraction technique along with immunisation as a routine in hospitals and health centres. They should develop nursing practice standards, protocols and manuals of pain assessment and pain management in children of various age groups which should include distraction technique as an important strategy to relieve the pain of children.

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