

## Review On Non-Pharmacological Methods to Reduce Pain in Children

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### Abstract

Pain during medical procedures is a common problem among children and can lead to fear, anxiety, and negative healthcare experiences. Effective pain management is important to improve the comfort and cooperation of children during such procedures. Non-pharmacological methods are widely used as safe and simple approaches to reduce pain without the use of medications. This review focuses on various distraction techniques such as blowing methods, bubble blowing, kaleidoscope, origami, buzzy device, music therapy, audio-visual aids, and virtual reality. These techniques help in diverting the child's attention, promoting relaxation, and reducing anxiety. Evidence from different studies shows that these methods are effective in decreasing pain perception and improving the overall experience of children. The use of non-pharmacological techniques in clinical practice can enhance pediatric care and support better outcomes.

**Keywords:** Pain, Children, Non-pharmacological methods, Pain management, Distraction techniques, Pediatric care

### Introduction

Children are more sensitive to pain because they are still growing and developing. They may not clearly understand medical procedures, which can make them feel scared and anxious. Painful experiences during childhood, such as injections and blood tests, can create fear and may lead to avoidance of treatment in the future. Therefore, it is essential to manage pain in children in a safe and supportive manner.<sup>(1,2)</sup>

Pain is commonly experienced by children during procedures such as injections, immunization, and venipuncture. These procedures can cause crying, stress, and discomfort. If pain is not properly managed, it can affect both the physical and

emotional well-being of the child. Since children may not be able to express their pain clearly, healthcare professionals play an important role in reducing pain and providing comfort.<sup>(3)</sup>

Non-pharmacological methods are simple techniques used to reduce pain without the use of medicines. These methods are safe, cost-effective, and easy to apply in clinical settings. They help reduce pain by diverting attention, promoting relaxation, and providing emotional support. Common methods include distraction, deep breathing, play therapy, and parental involvement. These techniques help children remain calm and cooperative during procedures.<sup>(4,5)</sup>

Various distraction techniques such as blowing methods, kaleidoscope, music therapy, and newer approaches like the buzzy device and virtual reality are widely used in pediatric care. These techniques help to divert the child's attention away from pain and engage them in enjoyable activities. Many studies have shown that these methods are effective in reducing pain and anxiety in children<sup>(5,6)</sup>

After understanding the importance of pain management in children, different non-pharmacological methods are used in clinical practice. Among these, distraction techniques are most commonly used because they are simple, safe, and effective. These techniques help to shift the child's attention away from the painful procedure and make the experience less stressful. Various distraction techniques used in pediatric care are discussed below<sup>(4,5)</sup>

## **Non-Pharmacological Distraction Techniques**

### **1. Blowing Technique**

The blowing technique is a simple and effective method used to reduce pain in children during procedures like injections. In this method, the child is asked to blow air, blow a toy, or inflate a balloon during the procedure. This helps to divert attention away from pain. It also promotes deep breathing, which helps the child relax and remain calm. This technique is easy to use and does not require any special equipment. Studies have shown that it helps in reducing pain and improving cooperation in children. the blowing technique can be used continuously before and during the procedure to keep the child engaged for a longer time. It helps in reducing fear and anxiety by keeping the child focused on the activity rather than the procedure. The technique can be made more interesting by asking the child to imagine blowing candles or playing a small game, which increases their involvement. It is suitable for children of different age groups and can be easily applied by nurses without any special training. Therefore, the blowing technique is considered a simple, effective, and practical approach for reducing pain and discomfort in children.<sup>(9,10)</sup>

### **2. Bubble Blowing Technique**

Bubble blowing is a fun and engaging distraction

method used in children. In this technique, the child is asked to blow soap bubbles during the procedure. This activity keeps the child busy and shifts attention away from the painful stimulus. It also promotes controlled breathing, which reduces anxiety and stress. This method creates a positive environment and is especially useful for younger children. bubble blowing can be started before the procedure and continued during it to keep the child actively involved. It helps in reducing fear by focusing the child's attention on the activity instead of the procedure. The technique can be made more interesting by turning it into a small game, which increases participation and enjoyment. It is easy to perform and does not require any special training. Therefore, bubble blowing is an effective and practical method for reducing pain and anxiety in children<sup>(9,10)</sup>

### **3. Kaleidoscope Distraction Technique**

The kaleidoscope technique is a visual distraction method in which the child looks through a kaleidoscope during the procedure. The colourful and changing patterns attract the child's attention and reduce awareness of pain. This method is simple, low-cost, and easy to use in clinical settings. Studies have shown that it effectively reduces pain and anxiety in children. Along with this, the kaleidoscope can be used before and during the procedure to maintain the child's attention for a longer time. It requires very little instruction, making it suitable even for anxious children. The attractive patterns help in calming the child and reducing fear. It is easy to carry and can be used in different healthcare settings. Therefore, the kaleidoscope technique is a useful and practical method for managing pain in children.<sup>(6,8)</sup>

### **4. Origami (Paper Folding) Technique**

Origami is a creative activity that involves folding paper into different shapes. It helps to keep the child engaged and distracted during medical procedures. This technique improves concentration and reduces fear and anxiety. It is more suitable for older children who can follow instructions. Origami is a simple and cost-effective method to reduce pain perception. origami can be used as a preparatory activity before the procedure to make the child feel more comfortable. It helps in building confidence

and creates a sense of achievement, which improves mood. The activity can be guided by nurses or parents, providing emotional support to the child. It also helps in improving coordination and cognitive skills. Therefore, origami is an effective and meaningful method for reducing pain and discomfort in children <sup>(5)</sup>

### **5. Buzzy Device**

The buzzy device is a modern technique used to reduce pain during procedures. It works by providing vibration and cold sensation near the injection site, which blocks pain signals. The device is easy to use, safe, and reusable. It is especially helpful during injections and blood collection. Studies have shown that it significantly reduces pain and anxiety in children. The vibration creates a different sensation that distracts the child from pain. It can also be combined with other distraction methods for better results. The device is portable and can be used in different clinical settings. Therefore, the buzzy device is an effective and advanced method for reducing procedural pain in children. <sup>(7,8)</sup>

### **6. Music Therapy**

Music therapy involves listening to soothing or favourite music during procedures. It helps to calm the child and reduce stress. Music also diverts attention away from pain and creates a relaxing environment. This method is easy to use and suitable for all age groups. Studies have shown that music therapy effectively reduces pain and anxiety in children music can be selected according to the child's preference, which increases its effectiveness. Listening to familiar songs helps the child feel comfortable and secure. It can be used before and during the procedure to reduce fear. This technique requires minimal equipment and can be easily applied in any healthcare setting. Therefore, music therapy is a simple and effective way to manage pain in children <sup>(13,14)</sup>

### **7. Audio-Visual Distraction (Cartoons/Videos)**

Audio-visual distraction includes showing cartoons or videos to children during procedures. This method engages both visual and hearing senses, which helps to divert attention from pain. It makes the child feel relaxed and reduces fear. This

technique is widely used in hospitals and is effective for children of different age groups. audio-visual distraction can be used before and during the procedure to keep the child continuously engaged. It can be adjusted according to the child's age and interest, which increases its effectiveness. The use of familiar characters helps the child feel safe and comfortable. It is easy to implement using mobile phones or screens available in hospitals. Therefore, this method is a practical and widely accepted way to reduce pain and anxiety in children. <sup>(4,5)</sup>

### **8. Virtual Reality (VR) Distraction**

Virtual reality is an advanced distraction technique that provides a computer-generated environment to the child. It engages multiple senses and completely diverts attention away from the procedure. This method is highly effective in reducing pain and anxiety, especially in older children. Although it requires special equipment, it has shown excellent results in pediatric pain management. virtual reality creates an immersive experience that makes the child unaware of the procedure. It can be used for longer procedures where continuous distraction is needed. Although it requires special equipment, it offers strong pain relief and comfort. With increasing use in healthcare, it is becoming more accessible and useful in pediatric settings. Therefore, virtual reality is a highly effective modern technique for managing pain in children. <sup>(11,12)</sup>

### **Conclusion**

Pain during medical procedures is a common and stressful experience for children, and if it is not managed properly, it can lead to fear, anxiety, and negative attitudes towards healthcare in the future. Therefore, it is very important to use safe and child-friendly methods to reduce pain and improve the overall experience of children. Non-pharmacological distraction techniques such as blowing methods, bubble blowing, kaleidoscope, origami, buzzy device, music therapy, audio-visual aids, and virtual reality are effective in reducing pain and anxiety among children. These methods are simple, safe, and easy to use in clinical settings, as they help to divert the child's attention, promote relaxation, and create a positive environment during procedures. These techniques not only reduce pain

but also improve the child's comfort and cooperation. Nurses play an important role in applying these methods and providing supportive care. Overall, the regular use of non-pharmacological distraction techniques can reduce fear, minimize pain, and improve the well-being of children during medical procedures.

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