



Comparative Effectiveness of Animated Video Versus Storytelling Distraction on Procedural Pain in Preschool Children During Intravenous Insertion

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ABSTRACT

Intravenous (IV) insertion is a common invasive procedure in preschool children and frequently causes pain and distress because of limited developmental ability to understand and cope with the procedure. Effective non-pharmacological strategies are essential to reduce procedural pain and support atraumatic pediatric care. This study aimed to compare the effectiveness of animated video distraction and storytelling in reducing pain during IV insertion among children aged 3-5 years. A quasi-experimental posttest-only design was conducted in the emergency department of a tertiary hospital. Thirty-two preschool children were recruited using purposive sampling and non-randomly allocated to an animated video group (n = 16) or a storytelling group (n = 16). Pain intensity during IV insertion was assessed using the Face, Legs, Activity, Cry, and Consolability (FLACC) scale. Data were analyzed using descriptive statistics, the Shapiro-Wilk test, and the Mann-Whitney U test. Most children in both groups experienced moderate pain following intervention. The animated video group demonstrated a lower mean FLACC score (3.94) compared to the storytelling group (4.75). Statistical analysis revealed a significant difference in pain levels between the two interventions ($Z = -2.015$; $p = 0.044$; effect size $r = 0.36$), indicating greater effectiveness of animated video distraction. Both distraction methods reduced procedural pain, although animated video distraction was associated with significantly lower pain than storytelling in this single-site emergency department sample. These findings support the integration of audiovisual distraction into pediatric nursing practice to improve comfort and cooperation during IV insertion while future randomized studies are recommended to confirm these results.

Keywords: Procedural pain; Pediatric nursing; Animated video distraction; Storytelling; Intravenous insertion; Preschool children

1. INTRODUCTION

Intravenous (IV) insertion is one of the most commonly performed invasive procedures in pediatric healthcare and remains a significant source of pain and distress among young children. Preschool children, particularly those aged 3–5 years, frequently exhibit negative emotional and behavioral responses during IV insertion, including crying, resistance, withdrawal, and fear-related behaviors. These reactions are closely associated with their developmental capacity to understand the purpose, benefits, and temporary nature of medical procedures at this stage (Triana, 2024). IV insertion therefore

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not only causes physical discomfort but also creates a psychologically challenging experience for children, parents, and healthcare providers.

Procedural pain that is inadequately managed during early childhood may have consequences that extend beyond the immediate clinical encounter. Evidence indicates that unmanaged pain during needle-related procedures contributes to increased anxiety, fear of healthcare environments, and avoidance behaviors later in life. Preschool children are particularly vulnerable because repeated exposure to painful procedures without adequate pain relief may be internalized as threatening experiences. Longitudinal studies have shown that early-life procedural pain and stress are associated with adverse psychological outcomes, including increased internalizing behaviors such as anxiety and depressive symptoms that persist into later childhood. These findings highlight that effective pain management during routine procedures, including IV insertion, is essential not only to improve immediate comfort but also to support long-term child well-being and atraumatic pediatric care.

In pediatric nursing practice, pharmacological interventions alone are often insufficient or impractical for managing short-duration procedural pain associated with IV insertion. Analgesic medications may not be indicated, may require additional preparation time, or may introduce unnecessary risks and adverse effects. Non-pharmacological pain management strategies have therefore become increasingly important because they provide safe, effective, and ethically appropriate approaches for children. These interventions are intended to reduce pain perception and procedural distress without exposing children to pharmacological risks, making them particularly suitable for routine invasive procedures performed in time-sensitive clinical settings such as emergency departments.

Among non-pharmacological interventions, distraction techniques are the most extensively studied and widely implemented strategies in pediatric care. Distraction works by redirecting a child's attention away from painful stimuli toward alternative sensory or cognitive inputs, thereby reducing the attentional resources available for pain processing. Pediatric nurses frequently use distraction because it is flexible, adaptable across different age groups, and can be implemented without specialized equipment or extensive training. Common distraction modalities include visual stimuli, auditory stimulation, interactive games, verbal communication, and audiovisual media (Nurafriani et al., 2019).

Two distraction methods commonly used in preschool children are animated video viewing and storytelling. Animated video distraction provides passive audiovisual stimulation by simultaneously engaging the visual and auditory sensory systems (Anggraeni & Widiyanti, 2019; Candra, 2023; Hidayah, 2022). Colorful images, movement, and sound rapidly capture children's attention and maintain engagement during brief yet painful procedures (Anggraeni & Widiyanti, 2019; Hidayah, 2022). Storytelling, in contrast, is an interactive distraction technique that relies on verbal communication, narrative structure, and imagination. Stories delivered by nurses encourage children to focus on characters, plots, and emotions, helping regulate emotional responses and redirect attention away from pain (Anggraeni & Widiyanti, 2019; Suri, 2022).

Previous studies have shown that both animated videos and storytelling can independently reduce pain and distress in children undergoing invasive procedures (Balamurali, 2025; Danianti, 2024; Mustofa, 2021). Studies evaluating audiovisual distraction, including cartoon videos and other multimedia formats, have consistently reported reductions in observed pain behaviors and anxiety during venipuncture and IV insertion among preschool-aged children (Danianti, 2024). Advanced audiovisual interventions, such as virtual reality, have also demonstrated substantial analgesic and anxiolytic effects in pediatric populations (Herrera, 2025), supporting the effectiveness of immersive sensory distraction. These findings are consistent with attention theory and gate control theory, which propose that competing non-noxious sensory input can modulate pain signal transmission and reduce perceived pain intensity by attenuating, rather than eliminating, nociceptive processing.

In contrast, empirical evidence specifically examining storytelling as a standalone pain-reduction intervention in preschool children remains limited. While verbal communication and narrative-based

approaches are recognized as components of atraumatic care and child-centered nursing, most studies incorporate storytelling as part of broader intervention packages rather than evaluating it independently. The theoretical rationale suggests that storytelling engages cognitive processing and imagination, thereby limiting the attentional capacity available for pain processing (Suri, 2022). The effectiveness of storytelling may depend heavily on the child's language development, attention span, and individual responsiveness, which can vary widely among children aged 3-5 years, potentially influencing the consistency of its effect.

Despite the growing body of literature supporting distraction techniques, direct comparative evidence remains limited. Most previous studies have compared a single distraction modality with standard care rather than directly evaluating two commonly used distraction methods within the same developmental group. Existing comparative studies have reported inconsistent findings regarding the relative effectiveness of different distraction approaches, highlighting the need for additional evidence to guide clinical practice (Shen et al., 2023). This evidence gap creates uncertainty in clinical decision-making, especially in emergency departments where nurses must select interventions that are not only effective but also practical within limited time and resource constraints (Setiawati & Novikasari, 2021).

Theoretical perspectives also suggest that the effectiveness of distraction modalities may differ according to developmental stage. Preschool children are in Piaget's preoperational stage of cognitive development, characterized by limited logical reasoning and a strong dependence on sensory experiences. Audiovisual distraction may provide greater benefits by delivering concrete multisensory stimulation without requiring advanced language comprehension or prolonged verbal processing. Storytelling, by comparison, places greater demands on verbal processing and sustained attention, potentially reducing its effectiveness in some preschool children. These developmental considerations emphasize the importance of directly comparing distraction methods to determine whether one approach provides clinically meaningful advantages over another.

This study was designed to address these knowledge gaps by comparing the effectiveness of animated video distraction and storytelling in reducing pain during IV insertion among children aged 3–5 years. Pain intensity was assessed using the Face, Legs, Activity, Cry, and Consolability (FLACC) scale, a validated behavioral pain assessment instrument widely used in pediatric populations. The study hypothesized that children receiving animated video distraction would demonstrate significantly lower pain scores than those receiving storytelling because audiovisual stimulation provides stronger multisensory engagement and more rapid attentional capture.

This study provides direct comparative evidence to support evidence-based pediatric nursing practice. Identifying the most effective and practical distraction technique may assist nurses in selecting appropriate non-pharmacological interventions to improve children's comfort and cooperation during invasive procedures. The findings may also contribute to the development of standardized pain management protocols for preschool children, strengthen the implementation of atraumatic care principles, and support children's right to effective pain management during medical procedures. Additional confirmatory studies with larger and more diverse populations remain necessary to strengthen the current evidence.

2. METHODS

2.1 Study Design

This study employed a quasi-experimental posttest-only design to examine differences in pain levels between two non-pharmacological distraction interventions, namely animated video distraction and storytelling, administered during intravenous (IV) insertion in preschool children. The independent variable was the type of distraction intervention, whereas the dependent variable was the child's observed pain level during the procedure. The posttest-only design was selected to minimize the potential influence of pretest measurements on children's pain perception and behavioral responses during IV insertion, which is particularly important in pediatric populations where anticipatory anxiety

may intensify procedural distress (Sugiyono, 2023). Quasi-experimental designs are widely applied in pediatric pain research because true randomization and the inclusion of untreated control groups may be ethically inappropriate when effective pain management interventions are available. This design enables the evaluation of intervention effectiveness under routine clinical conditions while ensuring that all participants receive an intervention intended to alleviate pain. The absence of random group allocation and baseline pain measurements limits the ability to fully control pre-existing differences between groups and may increase the risk of selection bias. These limitations were addressed by applying clearly defined sampling criteria and standardized intervention procedures throughout the study.

2.2 Population and Sample

The study population consisted of children aged 3–5 years who underwent intravenous (IV) insertion in the Emergency Department of Sari Asih Ar Rahmah Islamic Hospital, Tangerang. Data collection was conducted over a three-month period from August to October 2025. This setting was selected because IV insertion is routinely performed in emergency care, where children frequently experience elevated levels of anxiety and procedural pain.

Participants were recruited using purposive sampling to ensure that all eligible children met predefined inclusion criteria aligned with the study objectives (Sugiyono, 2023). Eligible participants were children aged 3–5 years who required IV insertion, had a stable clinical condition that permitted distraction intervention, and whose parents or legal guardians provided informed consent. Children with impaired consciousness, severe cognitive impairment, or medical conditions that could interfere with behavioral pain assessment were excluded. This sampling strategy enhanced internal validity by promoting a relatively homogeneous sample with respect to developmental stage and procedural exposure, both of which are important considerations in pediatric pain research.

A total of 32 children met the eligibility criteria and were enrolled in the study. Participants were assigned to two intervention groups of equal size, with 16 children receiving animated video distraction and 16 receiving storytelling. The non-random allocation procedure limited the ability to completely eliminate baseline differences between groups. Purposive sampling also restricts external validity because the findings may not be generalizable beyond similar clinical settings and populations. The study findings should therefore be interpreted within the context of preschool children undergoing IV insertion in comparable healthcare environments.

2.3 Intervention Procedures

Intervention procedures were standardized to ensure consistency across participants and minimize procedural variability. All intravenous (IV) insertions were performed by trained nursing staff in accordance with the hospital's standard operating procedures. Children assigned to the animated video group viewed age-appropriate animated videos presented on a digital device positioned within their visual field. The videos contained colorful visual elements, dynamic movement, and synchronized audio designed to capture and maintain the children's attention throughout the IV insertion procedure.

Children assigned to the storytelling group received verbal distraction delivered directly by a nurse. Age-appropriate stories were narrated using expressive intonation, simple language, and engaging content to stimulate imagination and promote emotional engagement. Storytelling began immediately before IV insertion and continued throughout the procedure to maximize the distraction effect.

Both interventions were administered concurrently with IV insertion because synchronized distraction has been shown to provide greater attentional diversion from painful stimuli during invasive procedures. Two nurses participated in each procedure to reduce measurement bias. One nurse delivered the assigned distraction intervention while performing the IV insertion, whereas a second nurse, who was not involved in the intervention or cannulation procedure, independently observed the child's

behavioral responses and assessed pain using the Face, Legs, Activity, Cry, and Consolability (FLACC) scale. This role separation was intended to improve the objectivity and consistency of pain assessment.

2.4 Measurement Instrument

Pain intensity was assessed using the Face, Legs, Activity, Cry, and Consolability (FLACC) scale, a behavioral observational pain assessment instrument with established validity and reliability in pediatric populations that has also been validated for use in the Indonesian clinical setting (Tasman et al., 2022). The FLACC scale evaluates five behavioral domains: facial expression, leg movement, activity, crying, and consolability. Each domain is scored on a scale from 0 to 2, resulting in a total score ranging from 0 to 10, with higher scores indicating greater pain intensity.

The FLACC scale was selected because preschool children often lack the cognitive and verbal abilities required to provide reliable self-reports of pain. Behavioral indicators therefore offer a more accurate assessment of pain in this age group. Pain assessment was performed during IV insertion as the posttest measurement, with an independent observing nurse recording FLACC scores in real time.

2.5 Data Analysis and Ethical Considerations

Data were analyzed using descriptive and inferential statistical methods. Descriptive statistics were used to summarize participant characteristics and distributions of pain levels within each intervention group. Prior to inferential analysis, data normality was assessed using the Shapiro-Wilk test. Because post-intervention pain scores in both groups were not normally distributed, non-parametric analysis was deemed appropriate.

The Mann-Whitney U test was applied to compare pain scores between the animated video and storytelling groups. This test is suitable for comparing two independent groups when data do not meet parametric assumptions and is commonly used in pediatric pain research involving small sample sizes. Statistical significance was determined at a p-value of less than 0.05. To enhance clinical interpretability, an effect size was also calculated for the between-group difference ($r = Z/\sqrt{N}$).

Ethical considerations were central to the study design and implementation. Approval was obtained from the relevant institutional and ethics review boards prior to data collection. Written informed consent was secured from parents or legal guardians of all participating children. Given the participants' age, procedures were explained to children in simple, age-appropriate language to promote understanding and cooperation. All children received a distraction intervention, ensuring that no participant was deprived of pain management, in line with ethical principles governing pediatric research. Safeguards were implemented to ensure comfort, safety, and minimal additional burden throughout the study.

3. RESULT

3.1 Respondent Characteristics

A total of 32 preschool children aged 3-5 years were included in the analysis, with complete datasets obtained for all participants. The sample was predominantly female, with 23 children (71.9%), while male participants accounted for 9 children (28.1%). Regarding age distribution, the largest proportion of respondents were 5 years old ($n = 12$; 37.5%), followed by 4 years ($n = 11$; 34.4%) and 3 years ($n = 9$; 28.1%). These data describe the sample composition; the study was not designed or powered to draw inferences about pain differences by sex or age.

3.2 Pain Levels After Distraction Interventions

Pain intensity was assessed during intravenous insertion using the FLACC behavioral pain scale following administration of the distraction interventions. In the animated video group ($n = 16$), most children experienced moderate pain, with 11 participants (68.8%) classified in this category, while 5

children (31.3%) demonstrated mild pain responses. No children in this group exhibited severe pain behaviors during the procedure.

In the storytelling group ($n = 16$), the majority of children also experienced moderate pain, observed in 13 participants (81.3%). Mild pain responses were recorded in 3 children (18.8%), and no cases of severe pain were observed. When mean pain scores were compared descriptively, the animated video group demonstrated a lower mean post-intervention pain score (mean = 3.94) than the storytelling group (mean = 4.75), indicating lower observed pain during IV insertion in the animated video group.

3.3 Normality Test Results

Prior to inferential analysis, the distribution of post-intervention pain scores was examined to determine the appropriateness of parametric statistical testing. The Shapiro–Wilk test was applied separately to each intervention group. Results indicated that pain scores in the animated video group were not normally distributed (Shapiro–Wilk statistic = 0.220, $p = 0.004$). Similarly, pain scores in the storytelling group also deviated from normality (Shapiro–Wilk statistic = 0.819, $p = 0.009$). Because both groups demonstrated p -values below the 0.05 threshold, the assumption of normal distribution was violated, necessitating the use of non-parametric statistical methods for group comparison.

3.4 Comparison of Pain Levels Between Groups

Differences in pain intensity between the animated video and storytelling groups were analyzed using the Mann–Whitney U test. The animated video group showed a lower mean pain score of 3.94, with observed scores ranging from 3 to 5. In contrast, the storytelling group exhibited a higher mean pain score of 4.75, with scores ranging from 3 to 6. The Mann–Whitney analysis yielded a Z value of -2.015 with a corresponding p -value of 0.044. The effect size was $r = 0.36$ ($Z/\sqrt{N}$), indicating a small-to-moderate between-group difference. As this p -value was below the predetermined significance level of 0.05, the results indicate a statistically significant difference in pain levels between the two distraction methods, favoring animated video distraction.

Table 1. Distribution of Respondent Characteristics ($n = 32$)

No	Characteristic Category	Frequency (n)	Percentage (%)
1	Sex		
	Male	9	28.1
	Female	23	71.9
2	Age		
	3 years	9	28.1
	4 years	11	34.4
	5 years	12	37.5

Table 2. Distribution of Pain Levels After Intervention ($n = 16$ per group)

Pain Level	Animated Video			Storytelling		
	(n)	(%)	Mean (SD)	(n)	(%)	Mean (SD)
Mild Pain	5	31.3	3.94	3	18.8	4.75
Moderate Pain	11	68.8		13	81.3	
Severe Pain	0	0		0	0	

Table 3. Shapiro-Wilk Normality Test of Post-Intervention Pain Scores

Group	Statistic	df	Sig.
Animated Video	0.220	16	0.004
Storytelling	0.819	16	0.009

Table 4. Comparison of Pain Levels Between Groups Using Mann-Whitney U Test

Group	N	Mean Pain Score	Min-Max	Z Value	p-value
Animated Video	16	3.94	3-5	-2.015	0.044
Storytelling	16	4.75	3-6		

4. DISCUSSION

The present study indicates that animated video and storytelling distractions were implemented during intravenous insertion in preschool children; however, animated video distraction was associated with significantly lower FLACC pain scores compared to storytelling. The observed between-group difference showed a small-to-moderate effect ($r = 0.36$), supporting the clinical relevance of selecting developmentally appropriate distraction modalities. This finding reinforces evidence that non-pharmacological distraction techniques can play an important role in pediatric pain management during invasive procedures. The observed difference between the two interventions highlights that not all distraction modalities exert equivalent effects, and their potential effectiveness is closely linked to sensory engagement and developmental appropriateness.

This aligns with previous research showing that non-pharmacological methods reduce the perceived intensity of pain but cannot fully eliminate physiological pain responses associated with needle puncture (Immawati, 2022; Lestari, 2024; Fatmawati, 2019). Intravenous insertion involves tissue injury and activation of nociceptors, which inevitably generate pain signals; distraction therefore functions by modulating perception and emotional response rather than blocking nociception entirely. From a clinical perspective, reducing pain from severe to more manageable levels remains clinically meaningful, as it improves cooperation, consolability, and procedural success (Immawati, 2022).

The greater observed benefit of animated video distraction observed in this study can be explained by its multisensory characteristics. Animated videos provide simultaneous visual and auditory stimulation, creating a more immersive experience that captures children's attention consistently throughout the procedure. According to gate control theory, competing non-noxious sensory input can inhibit the transmission of pain signals at the spinal cord level, thereby reducing pain perception (Ernawati, 2023). This theoretical framework is strongly supported by empirical findings demonstrating greater pain reduction with audiovisual and virtual reality-based interventions compared to verbal distraction alone (Mustofa, 2021; Triana, 2024).

In contrast, storytelling relies predominantly on verbal interaction, imagination, and emotional engagement. While storytelling has been shown to reduce anxiety and improve cooperation by supporting emotional regulation in preschool children (Dewi, 2023), its effectiveness depends heavily on the child's language comprehension, attention span, and cognitive capacity. Children aged 3–5 years are in the preoperational stage of cognitive development, characterized by limited logical reasoning and fluctuating attention (Nasution, 2023). During stressful and painful procedures, their ability to sustain focus on abstract verbal narratives may be compromised, reducing the analgesic impact of storytelling compared to visually rich, concrete stimuli. These developmental considerations help explain why storytelling, although beneficial, produced less pronounced pain attenuation than animated video distraction in this study.

Developmental factors are central to understanding pediatric pain perception and response to distraction (Dewi, 2023). Preschool children have difficulty understanding the purpose and temporary

nature of medical procedures, which amplifies fear and distress. Interventions that rely on concrete sensory input are therefore more compatible with their cognitive abilities than those requiring abstract thinking or sustained verbal processing (Ernawati, 2023). Audiovisual distraction aligns well with this developmental profile by providing immediate, engaging stimuli that do not require complex interpretation. These findings are consistent with prior studies reporting that younger children benefit more from visually engaging distraction techniques than from verbally mediated strategies.

The demographic characteristics of the sample should be interpreted descriptively. Previous studies have suggested that pain perception may vary according to demographic characteristics such as sex, although the present study was not designed to evaluate these differences (Akhani et al., 2014; Hidayati et al., 2021). The majority of participants were female and aged 5 years; although the study was not designed designed or powered to test pain differences by sex or age, and no subgroup analyses were conducted. Although prior literature has discussed potential differences in pain expression across demographic groups (Hidayati et al., 2021), any such explanations remain hypothesis-generating in the context of this study. Future studies with larger samples may consider stratified or adjusted analyses to clarify whether demographic factors modify the effects of distraction interventions.

From a clinical standpoint, the results strongly support the integration of animated video distraction into routine pediatric nursing practice when audiovisual devices are available. Animated videos are practical, easy to implement, and require minimal training or additional workload for nurses, making them well suited for busy clinical environments such as emergency departments. Their effectiveness, combined with feasibility, positions animated video distraction as a valuable component of atraumatic care aimed at minimizing physical and psychological distress during invasive procedures (Mawaddah, 2021). Storytelling remains a valuable alternative, particularly in settings where audiovisual equipment is unavailable or impractical. It may also be combined with other non-pharmacological approaches to optimize pain management during pediatric procedures (Tambunan, 2025; Lameky & Parinussa, 2025). Storytelling can enhance nurse–child interaction, provide emotional comfort, and support trust-building, which are essential elements of holistic pediatric care.

The findings of this study underscore the importance of atraumatic care principles in pediatric nursing. Effective pain management during invasive procedures not only improves immediate comfort but also reduces the risk of long-term psychological consequences, such as healthcare-related anxiety and procedural avoidance. By selecting distraction methods that are developmentally appropriate and evidence-based, nurses can improve children's experiences of care and promote positive attitudes toward healthcare encounters.

4.1 Limitations

Several limitations should be acknowledged. The relatively small sample size and the single-center emergency department setting limit statistical precision and the generalizability of the findings. The non-random group allocation and posttest-only design prevented confirmation of baseline equivalence between groups, increasing the possibility of selection bias and unmeasured confounding factors, including previous IV insertion experiences and baseline anxiety. Although the Face, Legs, Activity, Cry, and Consolability (FLACC) scale is appropriate for assessing pain in preschool children, behavioral pain assessment may be influenced by observer variability because inter-rater reliability was not evaluated. The nurse responsible for delivering the distraction intervention also performed the IV insertion, which may have introduced performance-related bias despite the use of standardized procedures. These methodological limitations should be considered when interpreting the findings and applying them to broader pediatric populations.

Future studies should evaluate the effectiveness of combined or multimodal distraction strategies using larger multicenter samples that include a wider range of pediatric age groups to improve generalizability. Randomized or stratified allocation, when feasible, together with the reporting of effect sizes and confidence intervals, would enhance the clinical interpretability of future findings. Additional investigations should also assess anxiety levels, physiological stress markers, parental satisfaction, and

longer-term behavioral responses to medical procedures. These findings would contribute to a more comprehensive understanding of how distraction interventions can be optimized to support atraumatic, child-centered pediatric nursing practice.

CONCLUSION

This study demonstrates that animated video distraction and storytelling can support procedural pain management in preschool children undergoing intravenous (IV) insertion, with animated video distraction producing significantly lower FLACC pain scores than storytelling ($r = 0.36$, indicating a small-to-moderate effect size). Although both interventions attenuated rather than eliminated nociceptive pain responses, reducing pain to a more manageable level remains clinically meaningful because it may improve children's cooperation, decrease distress-related behaviors, and facilitate smoother procedural performance. These findings provide comparative evidence supporting the integration of animated video distraction into atraumatic pediatric nursing practice because it is both effective and feasible. Storytelling remains a valuable alternative when audiovisual resources are unavailable or limited. The non-random, single-center, posttest-only design limits the generalizability of the findings. Future multicenter studies with larger sample sizes are warranted to validate these results, examine multimodal distraction strategies, and evaluate broader clinical and behavioral outcomes that may strengthen evidence-based pediatric pain management protocols.

ADVISE

Based on the research findings, the authors recommend that nurses use media distractions such as animated videos or storytelling during invasive procedures on children, involve the child in media selection, and incorporate pain responses to tailor interventions. Hospitals should provide adequate digital facilities and devices and develop standard operating procedures (SOPs) for pediatric pain management that include non-pharmacological distraction techniques. Educational institutions are encouraged to incorporate training in the use of distraction media into pediatric nursing practice curricula to effectively train students. Future researchers can explore other distraction methods or combinations of methods for children of various ages and assess their impact on parental anxiety and satisfaction.

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