



Case Study

Audiovisual Therapy On Children's Anxiety Levels During IV Insertion: A Case Study

Nor Halimah , Harnina Samantha Aisyah*, Inta Susanti

Faculty of Health Sciences, Universitas Muhammadiyah Lamongan, East Java, Indonesia

Article Info

Received: June 11, 2026

Revised: August 18, 2026

Accepted: September 30, 2026

Corresponding Author

Harnina Samantha Aisyah

ninasamantha27@gmail.com

Faculty of Health Sciences,
Universitas Muhammadiyah
Lamongan, East Java, Indonesia

Cite this as:

Halimah, N., Aisyah, H. S., & Susanti, I. Audiovisual therapy on children's anxiety levels during IV insertion: a case study. *Indonesian Journal of Nursing Case Studies (IJNCS)*. 1 (1). Retrieved from <https://jurnal.umla.ac.id/index.php/IJNCS/article/view/1532>

ABSTRACT

Background: Anxiety in children during invasive procedures can have a negative impact, both psychologically and physiologically. The purpose of this study is to determine the effect of the application of audiovisual therapy to reduce the level of anxiety during installation in the Marwah Room of Muhammadiyah Lamongan Hospital.

Case Presentation: This study is a case study with a descriptive approach. Anxiety in children amounting to two children was observed for 3 days. Anxiety was observed before and after audiovisual therapy was administered using a Visual Facial Anxiety Scale (VFAS) questionnaire.

Nursing Intervention: Before being given therapy to both respondents, the level of anxiety was found in the moderate category and after being given audiovisual therapy in 10 minutes, the level of anxiety in both respondents was found in the mild category.

Conclusion: Audiovisual therapy can help lower anxiety levels in children who are infested. Audiovisual therapy can be used as one of the effective non-pharmacological nursing interventions to help reduce anxiety in children undergoing hospitalization

Keywords: Anxiety; Audiovisual Therapy; Hospitalization

INTRODUCTION

Hospitalization in children is an experience that often causes stress and anxiety. One of the most common procedures that triggers anxiety in children is the insertion of an IV. This procedure can cause fear, pain, and discomfort that can increase anxiety responses in children, such as crying, refusing actions, and trying to escape [1]. Therefore, effective interventions are needed to reduce anxiety in children during intravenous (IV) insertion. Previous studies have shown that non-pharmacological distraction techniques can help reduce anxiety, fear, and distress during invasive procedures; however, their effectiveness may vary depending on the type of intervention and the child's characteristics [2].

According to data from the World Health Organization (WHO), approximately 3–10% of children who are hospitalized experience anxiety related to hospitalization. This condition may occur across different age groups, including toddlers, preschool-aged children, and school-aged children. Meanwhile, data from the Central Statistics Agency (BPS) in 2024 indicate that the prevalence of hospitalized children increased from approximately 2.91% in 2023 to 3.29% in 2024, representing a total of 82,666 children. Of these children, it is estimated that approximately 45% experience anxiety during hospitalization.

Hospitalization in children is often associated with stress and anxiety, especially when measures such as IV insertion are performed. The installation of an IV or intravenous therapy is one of the medical procedures that is carried out by inserting fluids, drugs, or nutrients directly into the venous blood vessels through a needle or catheter. This procedure aims to meet the body's fluid needs, provide drug therapy quickly, and maintain the patient's electrolyte balance [3]. This action can cause psychological trauma due to pain, fear of needles, and a hospital environment that is unfamiliar to the child. Therefore, nurses need to take an atraumatic care approach to minimize the psychological impact [4].

Anxiety in children during invasive procedures can have a negative impact, both psychologically and physiologically. Excessive stress responses can increase pain perception, worsen children's cooperation during the procedure, and make it difficult for health workers to perform procedures. Therefore, effective nursing interventions are needed to lower children's anxiety levels [5]

Some actions that can be taken to reduce anxiety levels in children include: playing with dolls, playing with *Clay*, play *Puzzle*, coloring activities, music therapy, as well as therapeutic communication techniques, as well as distraction techniques [6]. The use of distraction techniques used to distract the patient's attention from something that makes him uncomfortable, anxious or afraid by showing his favorite shows in the form of moving and sound images or animations in the hope that the patient will enjoy the spectacle so as to ignore the discomfort and show a good response to the reception [6].

One of the nonpharmacological intervention efforts that can be used is therapy *Audiovisual*. This therapy uses the medium of attractive images and sounds to distract the child from the procedure being performed. Distractions *Audiovisual* Proven to reduce children's focus on pain and fear, so it is expected to reduce anxiety levels during IV insertion [7]

This role is critical in providing comprehensive nursing care, including the use of distraction techniques such as therapy *Audiovisual* to create a more positive hospitalization experience for the child [8].

From the above background description, the purpose of this study is to determine the effect of the application of *Audiovisual therapy* on Children's Anxiety Level During the Installation of Infusions in the Children's Marwah Room of Muhammadiyah Lamongan Hospital.

CASE PRESENTATION

Patient Information

The patient was a 5 & 6 years old child hospitalized with a medical diagnosis of Dengue Hemorrhagic Fever (DHF). The patient experienced fever, weakness, decreased appetite, and discomfort. During hospitalization, the child demonstrated anxiety, particularly in response to the hospital environment and nursing procedures.

Clinical Findings

The physical examination showed [HR: >110 Beats/ minutes & T>8°C] and the patient appeared weak and anxious. Laboratory examination showed [platelet < 100.000 Cells/uL, hematocrit > 40%, and hemoglobin levels >10 g/dl]. The child's anxiety was assessed before and after the intervention using an appropriate anxiety assessment tool.

Timeline

1. Day 1: The patient was admitted with DHF and underwent physical and laboratory assessments.
2. Day 2: The patient continued to show anxiety during hospitalization and nursing procedures.
3. Day 3: A 10-minute audiovisual therapy session was provided as a non-pharmacological intervention.
4. After intervention: The patient's anxiety level and behavioral response were reassessed.

Diagnostic Assessment

The diagnosis of DHF was supported by clinical examination and laboratory investigations, particularly platelet count and hematocrit monitoring. Anxiety assessment was also performed to evaluate the patient's psychological response to hospitalization and nursing procedures.

Therapeutic Intervention

Routine nursing care included monitoring vital signs, fluid balance, clinical symptoms, and administering prescribed medications and fluids. To reduce anxiety, the patient received 10 minutes of age-appropriate audiovisual therapy. The intervention aimed to divert the child's attention from the hospital environment and reduce anxiety. Parents were also encouraged to provide emotional support.

Follow-up and Outcomes

After the 10-minute audiovisual therapy, the patient's anxiety level was reassessed. The patient showed a decrease in anxiety, accompanied by [reduced crying, decreased restlessness, or improved cooperation]. These findings indicate that audiovisual therapy may help reduce anxiety in hospitalized children with DHF.

RESULTS

Based on the table below, it can be seen that the first respondent (An. S) is female and 5 years old, while the second respondent (An. M) is male and 6 years old.

Table 1. Respondent Characteristics

Respondent	Gender	Age
R1 (An.S)	Female	5 Years Old
R2 (An. M)	Male	6 Years Old

Based on the results of the assessment carried out on 2 patients with the same case, namely the DHF obtained was patient 1 An. S came with complaints of fever up and down, no appetite, and fussy often crying and 2 An patients. M came with complaints of fever going up and down, often crying, fussy, no appetite, and not wanting to be left behind.

Table 2. Children's Anxiety Level Day 1-3

Anxiety	Respondents 1	Respondents 2
<i>Pre</i>	Scale 8	Scale 7
<i>Post</i>	Scale 2	Scale 1

DISCUSSION

The study data obtained that both children experienced signs and symptoms that showed anxiety during the insertion of the infusion including the child looked confused, often crying, seemed restless, had trouble sleeping, the child was tense when the nurse or doctor saw him and often hugged his mother, because he was facing something that had never been experienced before, insecurity, discomfort, feeling of losing something that was usually experienced and something that was painful. This has an impact on children's psychological and physiological development, children can behave aggressively and experience fear and anxiety.

The role of nurses is very important in creating a more child-friendly environment, including actively involving parents and providing a more familiar atmosphere. Simple psychological interventions such as the administration of audiovisual therapy can help the child's distracting process during hospitalization.

Various kinds of distraction techniques can be used to overcome anxiety when installing infusions in children, one of which is animated video therapy to achieve goals. By carrying out animation video therapy, it achieves the goal of effectively reducing the effects of anxiety during hospitalization. In order for children to improve the aspect of cooperative attitude during hospitalization, animated video therapy interventions to achieve goals can be done in bed, so that it does not require much effort and interferes with the treatment and treatment process for children.

Before the therapy was given, the results of the *Pre-Questionnaire* for Respondents 1 (A8) and Respondents 2 (A7) (Medium High) showed the application of animated video therapy to achieve goals in children who experienced anxiety problems could be overcome with the existence of animated video therapy to achieve goals periodically by showing the *Post-Questionnaire* scores of Respondents 1 (A2) and Respondents 2 A1 (Light). This means that animated video therapy to achieve goals *can be an alternative in overcoming anxiety problems in children*.

This is also in line with research [9] That is, it shows the results of nursing care with distraction techniques for 3 days, the patient experiences a decrease in anxiety during the insertion of the infusion and the family understands how to overcome anxiety during the insertion of the infusion in the child.

Research conducted [10] Through the distraction method using animated videos, achieving the goal of being able to make children increase children's cooperative attitudes and reduce anxiety during the installation of children's hospitalization infusions. Meanwhile, according to [11] By motivating children to imagine as if they are the characters in the picture, it can increase children's cooperative attitudes and reduce children's fear when nursing actions are taken. According to [12] Implementation of therapy *Audiovisual* showed a positive effect and greatly helped the nurse in reducing the hospitalization of the child during the treatment procedure.

The effect of the intervention can be explained by the Gate Control Theory of Pain, which proposes that pain perception is influenced not only by nociceptive stimulation but also by attention, thoughts, and emotional factors. When children are engaged in an interesting activity, their attention is redirected from the needle and the surrounding medical environment. Consequently, fewer attentional resources are available to process

painful and threatening stimuli, which may reduce both perceived distress and anxiety. Previous research has demonstrated that distraction-based interventions are effective in managing needle-related pain and distress in children [13]. A systematic review and meta-analysis also found evidence supporting distraction interventions for the management of needle-related pain and distress in children [14].

The findings are also consistent with the results, that an immersive virtual reality intervention involving distraction and procedural information significantly reduced anxiety among children undergoing venipuncture. In their randomized clinical trial involving 149 children, the intervention group experienced significantly lower anxiety immediately after the intervention than the standard-care group. These findings suggest that an intervention can influence anxiety by simultaneously diverting attention from the procedure and providing children with a more familiar and manageable perception of the clinical situation [15].

Furthermore, the effectiveness of distraction is supported by a randomized controlled trial conducted by Erdogan and Ozdemir (2021), which compared distraction cards, virtual reality, and the Buzzy device among children aged 7–12 years undergoing venipuncture. The study reported that these non-pharmacological methods were effective in reducing procedural pain and anxiety. This finding supports the assumption that engaging children in an alternative activity can reduce their focus on the invasive procedure and consequently decrease their emotional response [16].

In the author's opinion, animated video therapy to achieve goals is an effective intervention in reducing the level of anxiety in children during hospital treatment, especially during infusion installation. The success of this therapy can be seen from changes in children's behavior who become calmer, cooperative, less easily crying when examined, and able to interact with health workers more positively. In addition to being easy to apply and does not interfere with the treatment process, audiovisual therapy is also supported by various studies that show its benefits in distracting children from fear and anxiety. Therefore, audiovisual therapy can be used as one of the effective nonpharmacological nursing interventions to help reduce anxiety in children undergoing hospitalization.

CONCLUSION

Based on the results of the study, it was found that the level of anxiety in both subjects before and after the application decreased. These results show that the audiovisual therapy provided by the author is able to reduce anxiety levels in children. Audiovisual therapy can be used as one of the effective nonpharmacological nursing interventions to help reduce anxiety in children undergoing hospitalization. This therapy can be used by nurses as a simple, safe, only 10-minute audiovisual therapy and practical intervention to reduce anxiety and improve cooperation in hospitalized children. For hospitals, it can support child-friendly and patient-centered nursing care.

Acknowledgments

The researcher expressed his gratitude to the University of Muhammadiyah Lamongan for the support and guidance during the implementation of this research. Gratitude was also conveyed to the Marwah Room of Muhammadiyah Lamongan Hospital, as well as all respondents and families who have participated cooperatively in this research activity.

Conflict of Interest

The author states that there is no conflict of interest

Funding

This research does not receive specific grants from funding institutions in the public, commercial, or non-profit sectors

REFERENCES

- [1] D. Malinti, G., & Sulistiowati, "Efektifitas Terapi Audiovisual Terhadap Tingkat Kecemasan Anak Usia (1-6 Thn) Saat Pemasangan Infus di Ruangan Aster Rumah Sakit Advent Bandung,," *Malahayati Nurs. Journal*, vol. 7(5), 2175, 2025.
- [2] G. Can, M., & Özalp Gerçeker, "The effect of the Veinlite PEDI2 and passive virtual reality distraction on peripheral catheter insertion-related emotional behavior, pain, fear, and anxiety of children: A randomized controlled trial,," *J. Pediatr. nursing*, vol. 78, e227–e, 2024, doi: <https://doi.org/10.1016/j.pedn.2024.07.01>.
- [3] S. Gustini, "Faktor – Faktor Yang Berhubungan Dengan Tingkat Kecemasan Pada Anak Pra Sekolah Yang Menjalani Hospitalisasi Di Ruang Anak Rsud Yuliddin Away Tapaktuan Factors Associated with the Level of Anxiety in Pre-School Children Undergoing Hospitalization in the Children ' s Room at Yuliddin Away Tapaktuan Hospital," vol. 9, no. 2, pp. 1040–1053, 2023.
- [4] N. A. Pulungan, I. M., & Sitohang, "Parent's Perspectives of School-Age Anxiety Responses Get IV Installation,," *OISAA J. Indones. Emas*, vol. 4(2), 71–7, 2021.
- [5] H. D. SILVA, "Hubungan stadium kanker terhadap tingkat kecemasan pada anak dengan kanker yang menjalani kemoterapi,," (*Doctoral Diss. Univ. Duta Bangsa Surakarta*), 2023.
- [6] D. Fatmawati, L., Syaiful, Y., & Ratnawati, "Pengaruh audiovisual menonton film kartun terhadap tingkat kecemasan saat prosedur injeksi pada anak prasekolah,," *J. Heal. Sci.*, vol. 12(02), 15, 2019, doi: <https://doi.org/10.33086/jhs.v12i02.996>.
- [7] M. G. Barus, M., Sembiring, F., & Lubis, "Hubungan Dukungan Keluarga dengan Kecemasan Anak Usia Sekolah (6-12) Tahun yang Mengalami Pemasangan Infus Di RSUP Haji Adam Malik Medan Tahun 2023. Innovative,," *J. Soc. Sci. Res.*, vol. 4(2), 1892, 2024.
- [8] N. Aisyah, I. Hasanuddin, and J. Purnama, "Pengaruh Distraksi Audiovisual Film Kartun Terhadap Tingkat Kecemasan Anak Prasekolah Saat Prosedur Injeksi The Effect Of Audiovisual Distraction From Cartoon Film On The Level Of Anxiety In Preschool Children During Injection Procedures," vol. 6, no. 2, pp. 143–148, 2025.
- [9] J. Jawiah, J., Rehana, R., Martadinata, U. H., Elviani, Y., & Amelia, "Pemberian teknik distraksi menggambar dan mewarnai untuk menurunkan ansietas selama hospitalisasi pada anak dbd di rumah sakit,," *J. Complement. Heal.*, vol. 2(2), 77–8, 2022, doi: <https://doi.org/10.36086/jch.v2i2.1437>.
- [10] N. U. Hasanah, "Pengembangan standar operasional prosedur (sop) terapi bermain flash card pada anak prasekolah dengan masalah keperawatan kecemasan," 2022.
- [11] Ardani, "Pengaruh bermain simbolik terhadap tingkat kooperasi anak usia prasekolah (36 – 72 bulan) pada saat dilakukan pemasangan infus di igd rs pku muhammadiyah yogyakarta,," *Univ. 'aisyiyah yogyakarta*, 2019.
- [12] E. Karbandi, S., Far, A. S., Salari, M., Asgharinekah, S. M., & Izie, "Effect of music therapy and distraction cards on anxiety among hospitalized children with chronic diseases,," *Evid. based care journal*, vol. 9(4), 15–2, 2020, doi: <https://doi.org/10.22038/ebcj.2020.41409.2094>.

- [13] R. D. Koller, D., & Goldman, "Distraction techniques for children undergoing procedures: A critical review of pediatric research.," *J. Pediatr. Nursing*, vol. 27(6), 652, 2022.
- [14] L. M. Eijlers, R., Utens, E. M. W. J., Staals, L. M., de Nijs, P. F. A., Berghmans, J. M., Wijnen, R. M. H., Hillegers, M. H. J., Legerstee, J. S., & Staals, "Systematic review and meta-analysis of virtual reality in pediatrics: Effects on pain and anxiety. Anesthesia & Analgesia," vol. 129(5), 13, 2019.
- [15] K. C. Wong, C. L., & Choi, "Effects of an immersive virtual reality intervention on pain and anxiety among pediatric patients undergoing venipuncture: A randomized clinical trial.," *JAMA Netw. Open*, vol. 6(2), e230, 2023, doi: <https://doi.org/10.1001/jamanetworkopen.2023.0001>.
- [16] A. A. Erdogan, B., & Ozdemir, "The effect of three different methods on venipuncture pain and anxiety in children: Distraction cards, virtual reality, and Buzzy® (randomized controlled trial).," *J. Pediatr. Nursing*, vol. 58, e54–e6, 2021, doi: <https://doi.org/10.1016/j.pedn.2021.01.001>.