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EFFECTIVENESS DISTRACTION PASSIVE TO RESPONSE PAINFUL ON CHILD WHICH UNDERGO VENIPUNCTURE: A SYSTEMATIC REVIEW

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Abstract

Introduction: Pain is a traumatic experience for children. 78% of children experience painful consequence puncture needle at least very every cycle take care stay. Wrong One source of pain in children is venipuncture. **Objective:** To identify the effectiveness of passive distractive measures used to reduce pain in children undergoing venipuncture procedures. **Method:** The structure of this research is a detailed analysis using the PRISMA diagram procedure. Researchers applied the PICO method and searched for articles in English published between 2013 and 2023. Several databases used included ProQuest, PubMed, ScienceDirect, and Scopus. Researchers used the Confidence tool for data selection and extraction processes, and utilized the JBI instrument to assess the articles retrieved. **Results:** Ten articles were identified and analyzed. All articles have RCT design studies. The sample sizes of the reported studies ranged from 56 to 216 conducted in Türkiye and Italy. From a literature search, it was found that Passive distraction technique used to reduce pain levels in children undergoing venipuncture that is watch cartoon animation listen music, as well as kaleidoscope. **Conclusion:** Passive distraction techniques can reduce pain in children due to venous surgery puncture. Technique distraction passive Can form watch cartoon, listen music, and kaleidoscope.

Keyword : Child, Distraction Passive, Venipuncture, Distraction, Systematic Review

INTRODUCTION

Painful is feeling No pleasant And experience emotional Which related to actual or potential tissue damage or similar experiences (Shen et al., 2023). Children are exposed to pain due to planned examinations and treatments during hospitalization. (Atzori et al., 2022). The source of pain for children undergoing hospitalization is invasive procedures such as blood draws, immunizations and catheterization intravenous, Which give rise to flavor Sick, stress And afraid during undergoing treatment (Niu et al., 2023). This invasive procedure uses a needle which is a source of fear, anxiety and pain in children (Birnie et al., 2018). Around 78% from child experience at least One procedure Which hurtful during hospitalization, such as venipuncture, infusion, diagnostic/therapeutic procedures, etc.). Each child receives an average of 6, or more, painful procedures during hospitalization (Leyva et al., 2019). More than 50% of hospitalized children undergo venipuncture during treatment, which causes moderate to severe pain, this can affect physical, social, cognitive function but also emotional and psychological effects on children and their parents (Caru et al., 2023). Pain in children, if not treated effectively, can result in activation of the hotalamus-pituitary-adrenal (HPA) axis, prolonging hospitalization, phobia of needles, anxiety, sleep problems, and uncooperative treatment during treatment (Bradford et al., 2019). This can also hamper diagnostic procedures which will result in prolonged hospital stays. Research conducted by Leyva et al (2019) shows that 22% of children who received painful interventions were not offered any type of intervention to reduce the pain and anxiety they faced. It is the nurse's duty to reduce the negative effects of invasive procedures, because nurses have more time with

patients, so they have the opportunity to evaluate the effects of these procedures (Erdogan & Aytekin Ozdemir, 2021). Through the concept of atraumatic care, nurses can apply non-pharmacological interventions such as distraction techniques to reduce pain, anxiety and attachment to medical personnel in children (Calisir et al., 2019). Non-pharmacological intervention methods for pain management are preferred because they are easy to use, cost effective and have no side effects (Canbulat et al., 2015). One non-pharmacological intervention is distraction techniques. In general, distraction techniques are divided into two forms, namely active distraction and passive distraction. Forms of active distraction include the use of interactive procedures or games based on technology, virtual reality, breathing techniques, and guided relaxation. Meanwhile, passive forms of distraction such as listen story or music, watch television, or watch film (Kuo et al., 2018). Challenge in implementation technique distraction active is child sometimes No want to come along as well as in action Which given (Abdelmoniem & Mahmoud, 2016). However Passive distraction activities only require minimal involvement and do not depend on the child's skills in carrying out this technique. Therefore, a study is needed that examines the effectiveness of passive distraction techniques in reducing pain levels in children undergoing venipuncture so that it can be used as an alternative replacement if the child unable to actively participate in the distraction intervention provided. The aim of this research is to identify the effectiveness of passive distraction measures that can be used to reduce pain in children undergoing venipuncture procedures.



RESEARCH METHODS

Design study

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic guidelines Reviews and Meta Analysis (PRISM). For answer objective study. Researchers used PICO (Population, Intervention, Comparison, And Outcome) and looked for English language articles published from 2013 to 2023.

Criteria inclusion And criteria exclusion

Researchers explained the inclusion criteria in this study using PICO. P: children aged 1-18 years, fully conscious, have no sensory disturbances, able to communicate well, I: music, audiovisual or other passive distraction techniques, C: -, and O: measure the level of pain felt by children undergoing vein puncture, and randomized controlled trial research design. The exclusion criteria for this systematic review are children who suffer from chronic/severe illnesses, and are uncooperative, as well as case control study articles, quasi experimental, systematic review and meta analysis.

Criteria search And election search

A systematic literature review was conducted based on reporting items using PRISMA and using Evidence. Databases used include ProQuest, PubMed, ScienceDirect, and Scopus. In this study, all steps including search, identification, quality assessment, and data extraction were carried out independently.

Researchers searched for English language studies according to terms and keywords: ((music OR audiovisual OR distraction) AND (venipuncture pain) AND (children OR pediatrics)). The articles filtered are articles published in

the last 10 years, namely from 2013 to 2023. In each database there are different keywords used to search for the desired article. Apart from restrictions on scientific articles, in English and publications from the last 10 years, the Science Direct database added restrictions in the form of pediatric nursing journals, Scopus added restrictions on nursing & children, and Proquest added restrictions on pediatric subjects. All systematic reviews, literature reviews, anonymous studies, historical articles, short communications, books, letters to the editor, and articles that only display the abstract were excluded from the search results.

Election data

Article Which has obtained in search databases will exported in form ris. Reference files Then exported to Confidence (platforms device soft based web For manage review systematic) For filtering title, abstract, And text complete.

Networking starts with duplicates and will remove them. The titles and abstracts of all articles will be screened by researchers to meet the inclusion criteria. The full text of the article will then be uploaded to Confidence And reviewed by researcher. PRISM made For shows the study flow through the selection process (figure 1).

Evaluation quality methodological

Joanna Briggs Institute (JBI) instrument was used by researchers to assess article Which has obtained in accordance with method Which obtained. On this assessment, every items question given mark yes, No or No clear. Results Which obtained 100 % so that they qualify to be included in the next stage.



Extraction data and data synthesis

Information from studies which fulfil criteria will be taken with help of extraction tools developed specifically for this review, based on general aspects contained in systematic review. Data which is taken will cover information like author name, year of publication, location of study, objective of study, design of study, amount of samples, instruments used, and findings presented for each result that have relevance to the study objectives set by the researcher. The data extraction process will be supported by the use of Confidence. After that, the researcher will carry out data synthesis using the narrative synthesis method. This narrative synthesis will summarize the research results narratively to answer the research questions asked. This data synthesis method will illustrate the statement of results or searches carried out by the researcher. The results of the data extraction and synthesis process can be found in Table 1.

RESULT

Initially, this research found 456 articles from various databases through searches beginning. From total articles, 62 articles were assessed for whether they were worthy of inclusion in the review. Finally, only 10 articles were included in the data extraction process. An overall overview of the search strategy is presented in Figure 1.

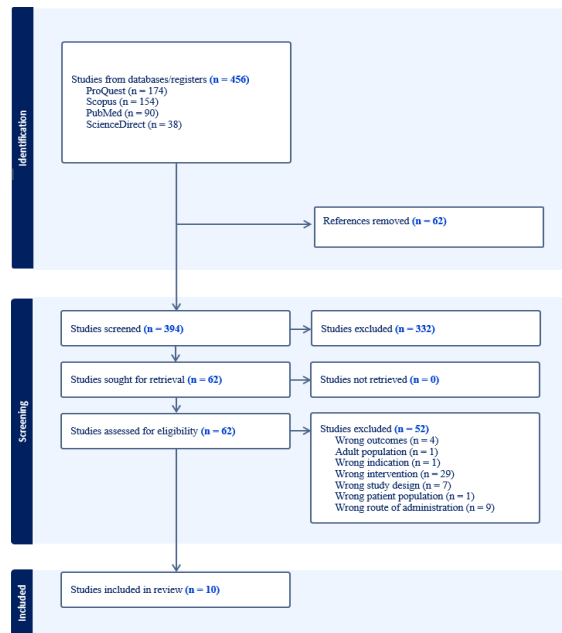


Figure 1. Diagram Prism Flow

Watch Cartoon

Watching cartoons is a passive distraction technique that involves audiovisuals in diverting the child's attention to the venipuncture pain experienced by the child. Watching cartoons can be done with various gadget devices such as iPad mini, tablet, or virtual reality (VR) (Akarsu et al., 2023; Bergomi et al., 2018; Inangil et al., 2020; Ugucu et al., 2022). From four articles which use the watch cartoon technique, only Inangil et al., (2020) explained in detail the title of the animation used, namely the film Ice Aged. Three other researchers only explained that respondents chose one of the films they liked from several choices offered. The effectiveness of watching cartoons can reduce venipuncture pain more than the active distraction technique of blowing bubbles (Ugucu et al., 2022). The effects of watching cartoons were reported by children, parents and caregivers with scores during the intervention (children, parents, researchers): **3.91 ± 3.09, 3.08 ± 2.04, 4.16**



± 2.56), after intervention (91 ± 3.09 , 3.08 ± 2.04 , 4.16 ± 2.56).

The effect sizes of watching cartoons during the procedure were 0.619, 1.413, and 0.814, while the effect sizes after the procedure were 0.646, 0.996, and 0.888.

Music

In this research there are three articles that use music as a passive distraction technique. The media for conveying music to children is done in several ways, namely listening directly from a tablet device (Aydin & Sahiner, 2017), toys that can emit music and light up (Kurudirek et al., 2023), as well as bracelets in the shape of figures cartoon And can emit music (Arkan & Esenay, 2020). From three articles This obtained results that music effective lower painful on moment vein puncture (Kurudirek et al., 2023). During procedure done toy make music And light up significant reduce the child's pain level. The average pain score of children in the experimental group (1.42 ± 1.05) was lower and statistically significant than that of controls (2.81 ± 1.23) ($p < 0.001$). During the procedure the average scale of children's fear and anxiety in the experimental group (1.21 ± 0.97) was lower than the control group (2.72 ± 1.10) and was statistically significant $p < 0.001$ Kaleidoscope.

According to the definition in the Big Indonesian Dictionary (KBBI), a kaleidoscope is a device optics Which own form similar cool, Which consists from two glass rectangle length placed in it at one end. This tool can display various images beautiful And symmetrical from fragment object colored Which placed in inside when seen from the other side. In two studies conducted by (Karakaya & Gözen, 2016; Semerci & Akgün Kostak, 2020), obtained

results that kaleidoscope capable increase level painful procedure vein puncture on child. Average level painful Which felt the intervention group was 1.80 ± 1.84 , lower than the control group, namely 3.27 ± 2.87 and there was a significant difference between the intervention group and the control group ($p = 0.001$). Likewise with study Karakaya & Gozen (2016), results from Semerci & Akgün Kostak (2020) proved that the kaleidoscope significantly reduced pain compared to the control group $p < 0.001$.

Discussion

From the systematic review that has been carried out, data was obtained that there are three types of activity techniques included in passive distraction, namely watching cartoons, listening to music and kaleidoscopes. Watching cartoons is the activity most often used as a passive distraction technique in children undergoing venipuncture procedures. This intervention is in line with research conducted by Düzakaya et al., (2021) which uses animation as a way to explain the procedure for installing an IV in children aged 6-8 years. From this research, the animated video not only reduces pain due to installation. infusion, However Also lower worry child. No only can reduce the level of pain caused by venipuncture, the passive distraction technique of watching cartoons also has a positive effect on children who experience pain due to surgical procedures. Apart from reducing pain, watching cartoons can also reduce anxiety before undergoing surgery (Nassar et al., 2022).

Music is Wrong a distraction technique passive through sense hearing. The use of music as a distraction technique can involve playing the patient's favorite music (Aydin & Sahiner, 2017), relaxation music, meditation, or any type of music that can



calm or improve atmosphere heart (Arkan & Esenay, 2020; Kurudirek et al., 2023) . Study Atak and Özyazıcıoğlu (2021) Which compare 3 type music, that is music classic, audiobooks and Turkish music in reducing pain in children after surgery. It says deep study This that music classic is Which most effective in lower pain and anxiety in child. Apart from classical music, religious music has also been proven to significantly reduce pain on patient child Which experience painful consequence procedure change dressing on case burns with a p value <0.05 (Cheraghi et al., 2021).

Kaleidoscope is a passive distraction technique that shows the resulting patterns by reflection light And changed in a way constant moment binoculars moved. In this systematic review, the kaleidoscope was used as a distraction technique in 2 articles. Not only is it effective in reducing pain due to venipuncture, the kaleidoscope is also effective in reducing pain due to procedural procedures in all age groups of children (İnal & Canbulat, 2015).

Instrument Which most often used For evaluate flavor painful Which caused by venipuncture is Wong-Baker FACES, that is as much 8 journal. Instrument This can used and valid in the age range 3-18 years. Additionally its psychometric features make it ideal for clinical applications. Therefore, this instrument has been translated into various languages such as Turkish (İnangil et al., 2020a), Chinese (Kou et al., 2023), and Indian (Saikiran et al., 2023).

Limitations on study this form restrictions time 10 year final that is from from 2013 to 2023, which has an impact on the number of articles reviewed. Published journal findings limited on journal academic No covers journal Which No publications such as theses, dissertations and proceedings.

Furthermore, the articles reviewed only use English, thereby excluding the possibility of articles in other languages being reviewed even though the intervention carried out meets the criteria.

CONCLUSION

On review systematic This focused on technique distraction passive in lower painful children undergoing venipuncture. The results of this research show that there are three activities that are commonly used in passive distraction techniques, namely watching cartoons, listening to music And kaleidoscope. Effectiveness technique distraction passive This applies on all age group child And dapt applied by nurse as business in atraumatic application care for children.

Various passive distraction interventions that can be carried out to reduce pain due to venipuncture in children can be carried out as nursing interventions. Therefore, nurses are expected to be able to use appropriate passive distraction techniques to reduce the level of venipuncture pain. Continued research is needed on nursing interventions for children undergoing venipuncture because the types of passive distraction used are still limited.

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