

# The Effect of Distraction Techniques (Watching Cartoons) on Pain in Children Aged 9-12 Months during Measles Immunization

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## ABSTRACT

*Pain reduction is all children's need and right. Techniques of pain reduction are divided into two, namely non-pharmacological and pharmacological. Pharmacology is a technique of pain reduction using drugs while non-pharmacological is a way to reduce the pain with distraction techniques. This study purpose was to determine the distraction techniques effect (watching cartoons) on pain based on literature studies. The research method used was to study literature or study journals from 10 journals. The results of literature studies from 10 journals showed that distraction techniques (watching cartoons) could reduce pain scores and reduce the level of anxiety of children experienced invasive procedures. It concluded that the distraction technique (watching cartoons) can reduce pain scores in children. Suggestions of this literature study results for further researchers who want to do a literature review are advised to collect as many sources as possible (journals and articles) to get maximum results.*

**Keywords:** Distraction Techniques, Pain, Children

## 1. Introduction

Infants or children under one-year-old have special rights to get health services. Indonesia has collaborated with UNICEF (The United Nations Children's Fund), WHO (World Health Organization), and related parties to reduce mortality of child and infant in the form of increasing the achievement of basic immunization in the first year of a child's life. The Health Minister of the Republic of Indonesia Regulation Number 12 of 2017 concerning the Immunization Implementation, considering that to improve the health status of the community, efforts are needed to prevent the occurrence of disease by carrying out immunizations.

Immunization is an effort to increase immunity against the disease, so that the body will not suffer from this disease because the immune system in the body has a memory system, when the vaccine is inserted into the body, it will form antibodies for and the memory system will store it as experience (Haris, Nurafriani & Asdar, 2019). Immunization is a very effective protection measure for babies so that babies can grow and develop without any disturbance. Diseases that can be prevented by immunization (PD31) include tuberculosis, diphtheria, polio, measles, pertussis, hepatitis A,

hepatitis B, meningococcus, meningitis, typhus, abdominal typhus, rubella, pneumonia, varicella, pneumococcus, shigellosis, epidemic parotitis, yellow fever, rabies, cholera, and haemophilus influenza type B.

Routine vaccine injections and advances in research in the health sector are aimed at preventing babies and toddlers from contracting infectious diseases, but routine vaccine injections are a painful procedure during childhood, especially when they are given immunizations without taking pain management (National Center for Biotechnology) (Taddio et al., 2010). In general, pain is the effect of immunizing on infants. Meanwhile, pain is a feeling of discomfort, both mild and severe. Pain can also be defined as a situation that can affect a person and their existence can be known if the person has experienced it. In addition to the pain caused by the injection, it can also be accompanied by a Post Immunization Event (AEFI), which is a systemic reaction and a local reaction. Local reactions include swelling and redness in the area around the injection (Fatmawati, Syaiful & Ratnawati, 2019).

The pain that is felt by babies still rarely gets attention from health workers because the baby is not able to convey the pain experienced verbally. Therefore, paying attention to the comfort of the baby and reducing the feeling of trauma is also the duty of health workers. According to McGrath to evaluate pain in infants who have limited speech can be seen from distressing behavior such as crying, frowning, or kicking which is associated with the pain they feel (Kaur, Sarin & Kumar, 2014). Pain caused by immunization shots if not managed can harm emotional aspects of children such as anxiety, fear, and stress. Experience with needle injections that cause pain in childhood will affect anxiety before future procedures, especially affecting the pain of subsequent procedures and even developing needle phobia.

## **2. Literature Review**

Reduction of pain is all children's need and right. Pain reduction techniques can be divided into two techniques, namely non-pharmacologic and pharmacologic.

Pharmacologic is a technique of pain reduction using drugs while non-pharmacologic is a technique of reducing pain that can be done with distraction (Haris, Nurafriani & Asdar, 2019; Taddio et al., 2010). One of the non-pharmacological pain reduction techniques is a distraction. Distraction is a technique that can be done to minimize pain in clients by diverting their attention from the pain. Distraction techniques have several types, namely visual distraction, auditory distraction, guided imagery distraction, tactile distraction, and respiratory distraction (Taddio & Hogan, 2011).

Watching an animated cartoon is a distraction technique that can be done in children in pain management. Pain impulses due to injury will not flow through the spine, messages do not reach the brain so that children do not experience pain when they focus more on watching cartoons. The cartoon itself is a representation and symbolic image, containing elements of satire, jokes, or humor. Cartoons usually appear in publication periodically and most often highlight political or public issues. However, sometimes social problems are also targeted, for example by raising people's life habits, sporting events, or about a person's personality. In other words, cartoons are visual metaphors resulting from expressions and interpretations of the socio-political environment that are being faced by the creator.<sup>2</sup> Another function of cartoons is for entertainment, however in films, there are informative and educational functions, even persuasive ones. The benefits of cartoon films for children are as entertainment, train children's comprehension, instil values, and train children's creativity (Landolt et al., 2002).

### 3. Methodology

The method that the researchers used was a literature review of 10 journals. A literature review is several comprehensive summaries of research studies established based on a specific theme. The researchers carried out a literature review in May - July 2020. The researchers used a secondary data from indirect experience. It was collected from the research results of some previous researchers. The collected secondary data sources were in the form of reputable international and national journal articles with predetermined themes. The search of literature used five high and moderate-quality criteria databases, such as ClinicalKey, Scient Direct, Wiley Online Library, National Library, and Google Scholar.

According to the literature searches results through publications in five databases with keywords adjusted to MeSH, the researchers found 62 articles that matched these keywords. Then, the search results were checked for duplication. It appeared that there were 24 similar articles, so they were excluded. There were 38 remaining articles. Then the researcher conducted a screening based on the title (n = 62), abstract (n= 28), and full text (n = 10) adjusted to the theme of the literature review. There were 10 articles that could be used in the literature review based on the eligibility of the inclusion and exclusion.

### 4. Results and Discussion

Ten articles that met the inclusion criteria were divided into two sub-discussions based on the topic of literature reviews, namely distraction techniques (watching cartoons) and pain scales (10 studies). Contributing factors in distraction techniques (watching cartoons) and pain scales were largely quasi-experimental. The average number of participants was more than thirty, overall, each study addressed distraction techniques (watching cartoons) and pain. The studies according to this systematic review were generally carried out in Indonesia with six studies (6 studies), 2 studies in Turkey, one study in India, and one study in Nepal.

**Table 1: Results of Literature Reviews [1,7-12]**

Author and Years	Study design, Sample, Variable, Instrument, Analysis	Analysis Factors Outcome	Summary of Result
(Hartati et al., 2018)	Design : Quasy-Experimental Design dengan rancangan posttest only equivalent control group Sample : 32 respondents (16 intervention groups, 16 control groups) Variable : Distraction Technique and pain Instrument : Wong-Baker FACES Pain Rating Scale Analysis : Shapiro wilk test and Independent t-test	Age	The results show that the distraction technique intervention watching animated cartoon films can reduce the pain response during infusion in preschool children from severe to moderate pain.
(Hamsinar Haris, Nurafriani, Faisal Asdar, 2018)	Design : Quasy-Experimental Design with Intact Group Comparison Sample : 30 samples Variable : distraction and pain	Age, gender	Audiovisual distraction has a significant effect on the level of pain in children when the infusion is placed.

	<p>technique Instrument : FLACC (Face, Legs, Activity, Cry, Consolability)          Analysis : Independent Sample T-test</p>		
(Mertajaya, 2018)	<p>Design : case study          Sample : 2 sample          Variable : watching cartoon distraction technique and pain education          Instrument : Skala Nyeri FLACC (Face, Legs, Activity, Cry, Consolability)          Analysis : Descriptive analysis</p>	Age, blood punction	The results of the case study case study that has been carried out show that there is a decreased pain scale in toddlers when taking intravenous blood after being given the distraction technique intervention to watch educational cartoons, the younger children have higher levels of pain and the older the pain level becomes low.
(Kirono et al, 2019)	<p>Design : Quasi-Experimental design with Intact-group Comparison plan          Sample : 6 children (3 children in the treatment group, 3 children in the control group)          Variable : Audiovisual distraction and pain on infusion          Instrument : Wong Baker Faces Pain Rating Scale          Analysis : Paired Samples T-test</p>	Age, frequency in infusion	The effect of audiovisual distraction can be used to distract patients to things that make them uncomfortable, such as pain during an infusion.
(Sarfika, 2014)	<p>Design : Quasi-Experimental with posttest only with control group design plan          Sample : 22 children (11 intervention group, 11 children of control group)          Variable : Distraction technique of watching cartoon and pain scale          Instrument : FLACC (Face, Legs, Activity, Cry, Consolability)          Analysis : Mann-Whitney test</p>	Age	The results of this study indicated that there was a significant difference in the average of pain scale ( $p < 0.05$ ) between children who were given the distraction technique to watch animated cartoons and children who were not given the distraction technique during the infusion. In this study, it concluded that there was a significant difference in the average of pain scale between children who were given the distraction technique to watch animated cartoons and children who were not given the distraction

			technique of watching animated cartoons during infusion.
(Irmayani, 2018)	Design : Static Group Comparison Sample : 28 anak (14 kelompok intervensi, 14kelompok kontrol) Variable : Teknik distraksi (menonton kartun animasi) dan nyeri Instrument : FLACC (Face, Legs, Activity, Cry, Consolability) pain scale Analysis : Uji Mann Whitney	Age, gender	The influence of distraction techniques on the pain scale in the infusion procedure
(Shrestha, et al, 2018)	Design : Quasi-Experimental control group posttest only design Sample : 60 respondents Variable : Cartoon based diversion therapy on pain Instrument : FLACC (Face, Legs, Activity, Cry, Consolability) Scale Analysis : t-test	Age, Gender, educational status, religion, family type, family income / month, history of previous hospitalization, previous history of cannulation, babysitter in hospital, cannula location	This study results indicated cartoon- based distraction therapy is an effective diversion technique to reduce pain during intravenous treatment.

Based on research conducted by Novitasari, Sulaeman & Purwati (2019), there was a difference in the average pain scale of children who got distraction techniques with children without distraction techniques. So these results stated that there was an effect of distraction techniques of watching cartoons on the pain scale (Irmayani, et al., 2018). According to the results of her research, it shows that there was a decrease in the pain scale in toddlers when taking intravenous blood after being given a distraction technique to watch educational cartoons. The younger children had higher levels of pain and the pain level of the older children became lower (Mertajaya, 2018).

Pain and anxiety could be reduced during distraction by watching cartoons, at five minutes, and cessation of intravenous injection. So, it concluded that the distraction technique of watching cartoons was an effective distraction strategy to reduce pain and anxiety in children during the intravenous injection (Landolt et al., 2002).

There was a significant different average pain scale between children who were given the distraction technique to watch animated cartoons and children without the distraction technique (Crellin & Babl, 2018). In this study, it concluded that there was a significant different average pain scale between children with the distraction technique of watching animated cartoons and children without the distraction technique of watching animated cartoons (Yusuf, et al., 2018).

## 5. Conclusion

Based on the results of the literature reviews, the effect of the distraction technique of watching cartoons on pain, it concluded that: the distraction technique of watching cartoons can reduce pain scores in children. Age and pain experience were some of the factors that influence pain. It shows that age and pain experience influence pain. After conducting a literature review of 10 journals, the distraction technique of watching cartoons on pain, it resulted in a conclusion of the effect of watching cartoon. It shows that watching cartoons can reduce pain scores and the anxiety of children, even though with different methods and samples from each study.

## Conflict of Interest

The authors declared that they have no conflict of interest.

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