



The effectiveness of cartoon video distraction in reducing pain levels in children during the intravenous injection process

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ABSTRACT

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Children's health care in hospitals requires special techniques in the treatment process. This is based on the psychology of children which are not ready to accept new things. During treatment, children usually suffer severe trauma due to invasive procedures carried out by health workers. Intravenous injection is an invasive procedure that causes pain. Non-pharmacological interventions play an important role in overcoming this problem, audiovisual distraction watching cartoon videos could be an option to prevent the trauma they feel. The research problem focuses on the level of pain felt by children during the intravenous injection process at the inpatient hospital at INDRIATI Hospital, Sukoharjo Regency. The aim of this study was to determine the effectiveness of the distraction of watching cartoons on pain levels during the intravenous injection process. This research method is quantitative research. In measuring pain levels, researchers used the Wong Baker scale and involved 10 children as subjects in the research. The research results showed that children tended to experience moderate pain after the intervention of watching cartoon videos.

Introduction

Treatment of children in hospital is of course carried out because of clinical conditions that cannot be done independently at home (Mendri & Prayogi, 2020). Hospitalization requires the child to be treated and take action, provide therapy and special programs by health workers to deal with the clinical condition they are experiencing, but this condition also often causes severe trauma to the child's psychology. Feelings of fear, anxiety, sadness and anger are often present in the treatment process (Wulandari Susi, 2017).

Feelings of fear and anxiety are caused by poor environmental adaptation in the child's psychology, where when a child has to be hospitalized, there will be physical contact with strangers and new people, such as doctors, nurses, other patient's families, cleaners. service and others. Hospital treatment forces children to be separated from an environment that is considered safe, full of affection and fun, namely the home environment (Mohamad et al., 2022).

In the hospice procedure, of course, there are many invasive actions that the child must undergo, such as installing an

IV, drawing blood, administering intravenous therapy and other actions to fulfill the conditions needed for treatment (Akgül et al., 2018).

It is not uncommon for this invasive procedure to cause pain which makes them feel threatened and uncomfortable, for example when giving repeated therapy such as intravenous injections the child will also feel repeated pain (Rahayu, 2020). Pain is the emergence of a sensation of discomfort caused by real perceptions, in the form of threats and fantasies about the injuries received (Wandini & Resandi, 2020).

Long-term impacts that can arise if a child's pain is not reduced or treated are psychological and physical stress suffered by the child, such as insomnia, depression, changes in appetite and fatigue (Pebriani & Irwadi, 2018).

The Distraction Method is a non-pharmacological method that is applied to reduce the pain experienced after an invasive procedure. One of the distraction methods that can be used is the visual distraction of watching cartoon videos. Based on Sartika's study showed that there is significantly ($p < 0,05$) different of mean pain scale between children given animated cartoon distraction and children not given animated cartoon distraction during intravenous cannulation (Sarfika et al., 2017). The aim of this study is determine the effectiveness of the distraction of watching cartoons on pain levels during the intravenous injection process

Method

This research was conducted at the Indriati general hospital, Sukoharjo Regency, in this hospital, there are 30 children under treatment. Then, the researcher chose 10 children as research subjects. The criterias are 5 years old

children who are under invasive procedure. Those children should not have visual impairment. This type of research is quantitative research with a comparative method, where the researcher will differentiate the results before and after the intervention of watching cartoon videos. In measuring pain levels, researchers used the Wong Baker scale. Analysis of research data using the SPSS application.

Results

Table 1. Before the intervention, watching cartoon videos

Pain Scale	Number of children
Moderate pain	1
Severe pain	9

From table 1 it can be concluded that the majority of children experience severe pain. This can be seen from the scale of the child's face and behavior when intravenous injection therapy is being carried out. Children tend to cry away from the nurse and ask their parents for a hug.

Table 2. After the intervention, watching cartoon videos

Pain Scale	Number of children
No pain	1
Moderate pain	8
Severe pain	1

Table 2 provides an illustration of children experiencing moderate pain when undergoing intravenous injection therapy. When the intervention of watching cartoon videos was carried out, the child became calmer and made the intravenous drug injection process easier. Children who are still experiencing severe pain are considered to have trauma within them, so the role of parents is also very important during the treatment process.

Discussion

Pain Response in Children

Pain during invasive procedures, especially intravenous injections, if not managed properly and correctly, can cause the child to become less cooperative and often refuse, thus disrupting the treatment therapy process. This is in line with objective data conducted by researchers, children who are research subjects tend to refuse and cry away from nurses.

Pain is the main complaint that arises due to damage to nerves or tissue which will release various mediators such as ATP, H⁺, K⁺, serotonin, prostaglandins, substances, histamine, and cytocaine. These chemical mediators cause discomfort, so mediators are called pain mediators (Bahrudin, 2018).

Fatmawati et al., (2019) in their research found that the pain felt by children when given invasive procedures could be properly distracted by using the technique of watching cartoon videos, so that the level of pain experienced by children became more tolerable and made it easier for nurses to provide actions that trigger pain, such as inserting an IV line, taking blood samples and administering therapy intravenously. The results of observations in the group of children who were not given cartoon video distractions showed that the level of pain tended to be severe, such as: tension, restlessness, and crying away from the nurse. This can traumatize the child every time an invasive procedure is given and of course has a big impact on the success rate of the treatment.

Distraction technique

In providing treatment in hospitals, pharmacological methods play an important role in the healing process and pain relief experienced by children, but in

the application of pharmacological methods must be accompanied by the application of non-pharmacological techniques. In several studies conducted by many researchers, non-pharmacological techniques actually give good results in handling pain management cases, especially in treating children who are hospitalized (Angger et al., 2022). It is hoped that pain can be better tolerated and the situation in which it is handled can be better controlled. One of the non-pharmacological techniques that is widely used in child care is the distraction technique. The distraction method can be used to reduce the pain felt by diverting the client's attention from invasive procedures that cause pain (Wandini & Resandi, 2020).

The important role of applying this distraction technique is that it is hoped that children can feel calmer and more comfortable and make the atmosphere more enjoyable (Ristia et al., 2018). By applying distraction, it will be easier for nurses to control the pain felt during the intravenous therapy process. On the basis that visual distraction can inhibit pain, it is explained that reticular activation can inhibit painful stimuli. For example: when a child receives sensory input in the form of watching a lot of cartoon videos, he focuses on what he sees, thereby triggering the blockage of pain impulses from entering the brain, with the conclusion that the pain can be reduced or not even felt at all by the child. Stimuli that are happy from outside can also stimulate the secretion of endorphins, so that the pain stimulus felt by the patient gradually decreases. Therefore, stimulating sight, hearing and touch will probably be more successful in reducing pain than stimulating one of the senses alone (Bergomi et al., 2018).

The results of the study concluded that children felt carried away by relaxing atmosphere of watching cartoon videos, so that when administering intravenous

injections, children became more comfortable and did not feel threatened. Audiovisual distraction is a method that is often used in child care cases. This distraction method is very useful in controlling the level of pain felt during invasive procedures, and the child's attention becomes focused on the storyline of the video they are watching, thereby diverting the child's perception of pain in the cerebral cortex (Mohamad et al., 2022).

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The results of the research show that children tend to experience moderate pain which can still be tolerated when given the distraction intervention of watching cartoon videos. This is proven by the results of research data that 8 out of 10 children who underwent intervention by watching cartoon videos experienced moderate pain when measured using the Wong Beker scale.

According to Setiawati & Novikasari, (2021), in their research, they explain that the application of distraction is very effective in invasive procedures that trigger pain, such as installing an IV line, taking blood samples and injections. In treating children, using distraction techniques is considered very easy, because the toddler period is a time when children can develop their imagination so that in application, this distraction method can help in managing the pain they feel, although it is not uncommon for there to be children who are difficult to distract. Apart from that, this technique is easier and can be done by nurses.

The application of the method of watching cartoon videos has proven to be effective because it can divert attention, so that children feel entertained and happy so that when given intravenous injection

therapy children feel calmer and minimize the risk of trauma levels. The method of watching cartoon videos is expected to be diverting so that children can still tolerate the pain produced by administering therapy via injection (Irwan et al., 2021).

Conclusion

The distraction method of watching cartoon videos has proven to be effective in tolerating pain that arises during the process of administering intravenous therapy. This is proven by research results that children who are given this intervention tend to experience moderate pain. So that the treatment process will be maximized.

Suggestion

It is hoped that health services, especially in the case of pediatric nursing, can apply the non-pharmacological technique of watching cartoon videos, because this method has proven effective in tolerating pain due to invasive procedures.

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