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Differences in Pain Intensity with Distraction and Relaxation Techniques with Infusation in Childhood 6-12 Year

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Abstract:

Infusion is a nursing action that is carried out by inserting fluids into the veins for a long time and using an infusion set infusion, an action that is often done in hospitals and has a high risk of anxiety and discomfort. Pain is an unpleasant experience caused by actual or potential tissue damage. Aims: the purpose of this study was to determine the difference in the intensity of pain infusion with distraction and relaxation techniques in children aged 6-12 years at Labuang Baji Hospital Makassar. The type of research used is pre-experimental design: post-test only design, namely by providing intervention/treatment and then seeing the results. researchers provided treatment non farmakologi the form of distraction and relaxation techniques for infusion. The population in this study were 30 child respondents. Collecting data by distributing questionnaires/observations. The analysis of this study used the chi-square test. Infusion is an invasive action that is carried out by inserting fluids into the veins for a long time, an action that is often done in hospitals and has a high risk of anxiety and discomfort. Pain is an unpleasant experience caused by actual or potential tissue damage. There is no significant difference in the effect of pain with distraction techniques and relaxation techniques on children 6-12 years old at Labuan Baji Hospital Makassar with p value = 0.757 greater than = 0.005.

Keywords: Infusion; Distraction; Relaxation; Pain Intensity

Introduction

Children are unique and valuable individuals that require special attention, not only as gifts from God Almighty but also as the nation's next generation. The quality of children as the next generation and the hope of the nation depends on the fulfilment of the rights of every child to grow and develop, and to survive. The stage of growth and development of a child is the beginning of the formation of a quality child in the future. At the stage of growing and developing, children always have problems in terms of health, thus making a child have to be hospitalized.[1]

Children are individuals who have spiritual, physiological, and social needs. Problems that can affect the psychological impact on children when hospitalized (hospitalization) is pain that will cause trauma.[2]

The percentage of hospitalization in Indonesia is 2.3 percent of the entire population of Indonesia. The population of DI Yogyakarta holds the highest rank in the utilization of inpatient care at 4.4 percent. The proportion of inpatient utilization in the age group 6-12 years is 1.3 percent.[1]

Infusion installation is a nursing action that is used to insert fluids into the patient's veins (blood vessels) in large amounts and for a long time by using a drip infusion set, the infusion can cause anxiety, fear, and discomfort. Infusion is an invasive procedure that can cause pain in children. Repeated pain that is not treated can cause trauma to the child. Anxiety is an unpleasant emotional condition characterized by feelings of unknown cause or source such as tension, fear and worry and is a subjective feeling.[2,3]

Children's reactions are different at the time of infusion such as crying, biting their lips, kicking, hitting, clenching their teeth, and running out of the room. Pain that cannot be treated usually has a physical and behavioral impact. The physical impact of pain consists of two, namely the acute impact and chronic impact, the acute impact (short term) which is characterized by an increase in metabolic rate, increased cortisol production and increased fluid retention. While the chronic (long-term) impact is characterized by increased stress in children which results in the inability to carry out activities.[4]

Pain perception is subjective, so no one person experiences pain the same way. Likewise, what is felt by a child, many factors experience changes in pain response such as gender, age, previous experience of pain, coping patterns as well as family and social support. Although the perception is very subjective, nurses are expected to be able to accurately measure the pain experienced by children through assessment and can carry out management to reduce pain.[1] The main problem in children with infusion is pain and trauma which can cause psychological stress.

Pain perception is subjective, so no one person experiences pain in the same way. Likewise, what is felt by a child, many factors experience changes in pain response such as gender, age, previous experience of pain, coping patterns as well as family and social support. Although the perception is very subjective, nurses are expected to be able to accurately measure the pain experienced by children through assessment and can carry out management to reduce pain.[1]

Pain as a subjective sensory and unpleasant emotional experience associated with actual, potential or perceived tissue damage in the events where the damage occurred. Nurses using their knowledge can overcome pain problems during infusion both independently and collaboratively by using two approaches, namely a pharmacological approach and a non-pharmacological approach.[5]

The pharmacology approach is a collaborative approach between doctors and nurses that emphasizes the administration of

drugs that can relieve pain sensations, increase cortisol production. While the non-pharmacological approach is an approach to the patient to eliminate the sensation of pain at the time of infusion. One of the pain managements in non-pharmacological approaches is the technique of distraction and relaxation.

Distraction technique is a method to relieve pain by diverting the patient's attention to other things so that the patient will forget the pain experienced. If a person receives excessive sensory input, it can cause pain impulses to be blocked to the brain (pain is reduced or felt by the patient). Pleasant stimulation from the outside can also stimulate the secretion of endorphins, so that the pain stimulation felt by the patient is reduced. One of the distraction techniques is murotal/music therapy and watching videos

reduce pain during infusion. Murotal / music and watching videos as therapy has been known since 550 years AD, and was developed by Pythagoras from Greece. According to research at the State University of New York at Buffalo, since they used music therapy and watched videos, the need for sedatives fell by nearly 50%. Music and watching also stimulate the release of endorphins, body hormones that give a feeling of pleasure that play a role in reducing pain so that music and watching videos can be used to divert pain so that patients feel the pain is reduced.[6]

According to relaxation techniques, mental and physical freedom from tension and stress. Relaxation techniques give individuals self-control when there is discomfort or pain, physical and emotional stress in pain. Relaxation techniques can be used when the individual is healthy or sick. Relaxation and imagination techniques are one of the techniques used to reduce pain in patients, in this study, especially in infusion. Relaxation techniques include deep breathing, meditation, imagination techniques, and progressive relaxation exercises.[7]

Several studies have shown that relaxation is effective in reducing pain during infusion. This may be due to the relatively small role of skeletal muscles in pain during infusion or the patient's need for the relaxation technique to be effective. Regular periods of relaxation can help to combat the fatigue and muscle tension that occurs with chronic pain and that increases pain. Likewise, research conducted by Jacobson and Wolpe showed that relaxation can reduce tension and anxiety. Relaxation is mental and physical freedom from tension and stress, because it can change the patient's cognitive perception and affective motivation. Relaxation techniques allow patients to control themselves when there is discomfort or pain, physical and emotional stress in pain.

Based on the description above, researchers are interested in researching "The difference in changes in pain intensity in infusion using distraction and relaxation techniques at Labuang Baji Hospital Makassar".

Research Method

The research design used was pre-experimental design: post-test only design, namely research conducted by providing intervention/treatment and then seeing the results. In this study, researchers provided treatment in the form of distraction and relaxation techniques on infusion. After that, the level of pain felt by the child was measured using the "face" pain scale.

The population in this study was patients who had been infused at Labuang Baji Hospital, Makassar. The sample used is an infusion patient with distraction and relaxation techniques, that is, by taking a case or respondent that happens to be present or available somewhere according to the context

of the study. The samples of this study were 30 samples of children aged 6-12 years who did infusions at Labuang Baji Hospital Makassar.

The research location is at Labuang Baji Hospital Makassar. The time for conducting research in this study starts from March 27 to April 27 2021. The instrument used in this study is a music player/murotal device from an MP3 player device that is connected to headphones/earphones and an observation mobile tv.

For the variables to be measured, namely Listening to music/murotal is good if the respondent listens to music/murotal and taps fingers or toes, sings, shakes head, moves body, less when listens to music/murotal and does not tap fingers or feet, sings, shakes head, moves body. Watching videos is good if the respondent watches the video and there is a decrease in the pain stimulus, less if the respondent watches the video and there is no decrease in the pain stimulus. Breathing is controlled well if the respondent does controlled inhalation, less if the respondent does not do controlled inhalation. Pain in the infusion was given a statement indicating the pain felt by the respondent using a pain scale based on the pain response, namely mild pain: not moving, afraid, anxious, increased pulse, decreased pulse. Moderate pain: increased breathing, grimacing, nausea/vomiting, anger, shifting of body parts, profuse sweating. Severe pain: writhing strongly, very tense, moaning, crying, mouth and teeth clenched.

While the observation sheet, if the respondent shows symptoms that are in accordance with the statement on the observation sheet, a score of 1 is given and if the respondent does not show symptoms that are in accordance with the statement on the observation sheet, a value of 0 is given.

The type of data used in this study is primary data, namely data obtained or taken directly by researchers on respondents before and after being given distraction and relaxation techniques.

The test used is the paired t-test with a value of = 0.05. The paired t-test is used to test the mean difference between two groups of dependent data.

After obtaining a recommendation from the institution for other parties by applying for permission to the institution or institution where the research is conducted, this research is carried out by emphasizing ethical issues which include: Informed Consent (approval sheet); Anonymity (without pages); and Confidentiality (confidentiality).

Results

Characteristics of the respondents for this research can be seen in Table 1, 2, and 3.

Table 1. Characteristics of Respondents by Age

Pain	Frequency	%
Age		
4-6 Years	4	13,3
7-12 years	26	86
Total	30	100

Source: Primary Data 2021

The results of the study in table 1 show that the characteristics of respondents based on age were 4-6 respondents (13.3%) and 26 respondents (86.7%).

Table 2. Characteristics of Respondents by Gender

Pain	Frequency	%
Gender		
Man	13	43,3 %
Woman	17	56,7 %
Total	30	100%

Primary Data Source 2021

The results of the study in table 2 show that the characteristics of respondents based on gender are male as many as 13 respondents (43.3%) and female as many as 17 respondents (56.7%).

Table 3. Characteristics of Respondents based on Education

Pain	Frequency	%
Education		
Kindergarten	4	13,3%
SD	26	86,7%
Total	30	100%

Source: Primary Data 2021

The results of the study in table 1 show that the characteristics of respondents based on age were 4-6 respondents (13.3%) and 26 respondents (86.7%).

Table 4. Pre Distraction Pain

Pain	Frequency	%
Light	4	13,3
Currently	17	56,7
Heavy	9	30,0
Total	30	100%

Source: Primary Data 2021

In table 4 regarding Pre-Distraction, it shows that there are 4 (13.3%) mild pain respondents, 17 (56.7%) moderate pain respondents and 9 (30.0%) severe pain respondents.

Table 5. Post Distraction Pain

Pain	Frequency	%
Light	19	63,3
Currently	10	33,3
Heavy	1	3,3
Total	30	100%

Source: Primary Data 2021

Table 5 on Post Distraski shows that there are 19 (63.3%) mild pain respondents, 10 (33.3%) moderate pain and 1 (3.3%) severe pain.

Table 6. Pre Relactation Pain

Pain	Frequency	%
Light	3	10,0
Currently	20	66,7
Heavy	7	23,3
Total	30	100%

Source: Primary Data 2021

In table 6 regarding Pre Relaxation shows that there are 3 (10.0%) mild pain respondents, 20 (66.7%) moderate pain respondents and 7 (23.3%) severe pain respondents.

Table 7. Post Relactation Pain

Pain	Frequency	%
Light	23	76,7
Currently	5	16,7
Heavy	2	6,7
Total	30	100%

Source: Primary Data 2021

Table 7 on Post Relaxation shows that there are 23 (76.7%) mild pain respondents, 5 (16.7%) moderate pain and 2 (6.7%) severe pain.

Table 8. Effect of Distraction Techniques on Pre and post Pain

Nyeri	Mean Rank	Z	*p*
Pre Post	10,50	-4,234	0,000

Uji Marginal Homogeneity Test
Source: Primary Data 2021

Table 8 shows that there is an effect of relaxation techniques on pre and post pain, with a p value of 0.000 which is smaller than the value of = 0.005.

Table 9. Effect of Relaxation Technique on Pre and Post Pain

Nyeri	Mean Rank	Z	*p*
Pre Post	11,50	-4,456	0,000

Marginal Homogeneity Test
Source: Primary Data 2021

Table 9 shows that there is an effect of relaxation techniques on Pre and Post Pain, with a p value of 0.000 which is smaller than the value of = 0.005.

Table 10. Effect of Relaxation Techniques on Pre and Post Pain

Pain	Correlation Coefficient	N	*p*
Pre Post	0.59	30	0,757

Spearman's rho . test
Source: Primary Data 2021

Table 10 shows that there is no effect of distraction technique pain on relaxation technique pain, with p value = 0.757 greater than = 0.005.

Discussion

The Effect of Distraction Techniques on Pre and Post Pain The results showed that there were mild pain in Pre-Distraction in 4 (13.3%) respondents, 17 (56.7%) moderate pain and 9 (30.0%) severe pain. Post Distraski there is mild pain 19 (63.3%) respondents, moderate pain as many as 10 (33.3%) respondents and severe pain as many as 1 (3.3%) respondents. The results of statistical tests show that there is an effect of relaxation techniques on Pre and Post Pain, with a p value = 0.000 which is smaller than the value = 0.005.

This is supported by Sigit's theory which says that distraction and relaxation techniques, one of which is watching shows/videos that are liked by the client, can reduce the patient's awareness of pain and even increase pain tolerance. So that the distraction technique by watching videos can be done at the time of infusion so as not to cause trauma to the child that no one is hurt by the infusion or abocath needle.

The behavior shown by children by watching videos during infusion, children tend to close their eyes and do not pay attention to the videos that are displayed so that when pain is felt it will show aggressive behavior and panic. On the other hand, children are happy and their attention is distracted when they are given their favorite animated video.

The Effect of Relaxation Techniques on Pre and Post Pain The relts showed that Pre Relaxation had mild pain in 3 (10.0%) respondents, moderate pain as many as 20 (66.7%) respondents and Severe Pain as many as 7 (23.3%) respondents. Post relaxation there is mild pain 23 (76.7%) respondents, moderate pain as many as 5 (16.7%) respondents and severe pain as many as 2 (6.7%) respondents. The results of statistical tests show that there are the effect of relaxation techniques on pre and post pain, with p value = 0.000 smaller than the value = 0.005.

This research is supported by the theory of Pandoe, 2016 which says that several researchers have proven that listening to music can reduce complaints both physically and mentally, including for pain management.

This is strongly supported by research by Basuki Ngudi, 2017 it is proven that listening to music can reduce pain during infusion procedures in school children. The results of this comparative study were conducted by the author regarding the relationship between the provision of distraction and relaxation techniques by listening to music on the level of pain in the infusion procedure.

At the time of insertion of the infusion by listening to music, patients who like music and enjoy listening to music will be more comfortable and relaxed and do not even feel pain, but patients who do not like music will feel disturbed and will feel severe pain. When music is played it will disturb the concentration and calm of other patients, causing noise.

The results showed that there was no effect of distraction technique pain on relaxation technique pain, with p = 0.757 greater than = 0.005. This is in line with Tamsuri's opinion that controlled breathing is an effective method, especially in patients with chronic pain. In addition, there are 3 children with severe pain, where the respondent lacks in controlled breathing, due to fear of infusion, so that controlled breathing is not effective, this is reinforced by Wong's opinion, negative responses in children occur due to feelings of fear and anxiety, because children Intrinsically, they are afraid of things they do not know. This is caused by a lack of knowledge and

understanding of children's reality, so that children see that there is no real danger. With an explanation of the procedure, the child will know about the procedure and will show cooperation with the nurse and the fear of the procedure is reduced. And the 3 respondents who experienced severe pain were female, this is supported by Johston's theory which states the characteristics Demographics such as age and gender can influence a patient's experience of stress, for example girls tend to show more fear than boys. However, it is doubtful whether gender alone is a factor in expressing pain. Some cultures influence gender, for example, assume that a girl is allowed to cry in the same situation.[8]

The results of observations of behavioral responses to pain showed that the highest difference in pain reduction occurred in the response to calm and muscle tone. This response is possible because when listening to music, one becomes more comfortable and relaxed. Instrumental music is music with a soft, regular, and harmonious rhythm.

Vibration and harmonization of musical rhythms produced by music will affect a person physically which causes a person to be relaxed or relaxed, while a regular rhythm affects a person psychologically which makes him comfortable and calm. Whereas physical and psychological conditions have a reciprocal relationship.

This is supported by the opinion of Setiadarma (2004) which states that soft and regular rhythmic music affects a person's physical and mental state. If the vibrations and harmony of the music used are appropriate, the listener will feel comfortable, comfort will make someone calm. In addition, because the vibrations of music produce vibrations or air conduction in the auditory organ, the vestibular organ (balance instrument) also gets the impact of music, so that a person becomes more relaxed. Music therapy is the use of music in dealing with physical, psychological and disability problems. Differences in changes in music therapy to decrease pain intensity due to infusion can be discussed based on the effect of music on pain perception. Where music therapy has a positive effect through the mechanism of diverting attention to pain (distraction), providing a feeling of comfort and control to the patient, stimulating or causing the release of endorphins, and causing a feeling of calm (relaxation). Someone who listens to music will focus his thoughts and attention (concentration of thoughts) on the sound or rhythm of the music he receives, so that the focus of his attention on pain or painful stimuli is diverted or reduced. In the distraction mechanism, there is a decrease in attention or perception of pain by focusing the patient's attention on other stimuli or keeping the mind away from pain.

Bare & Smeltzer.2002, which states that distraction is a cognitive technique mechanism that is an effective strategy to shift the focus of one's attention to something other than pain.[9] A person who is less aware of pain or pays little attention to pain will be less disturbed and more tolerant of pain.

Furthermore, Potter and Perry (2005) state that distraction causes the reticular activation system to be stimulated. If the reticular activation system will block the painful stimulus or painful stimulus, thereby reducing pain alertness.[8]

Conclusions

Based on the results of research conducted at RSUD Labuang Baji Makassar, it can be concluded that there is no significant difference in the effect of pain with distraction techniques and relaxation techniques on children 6-12 years old at Labuan Baji Hospital Makassar with p value = 0.757 greater than = 0.005.

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