

The Effect Of Distraction Techniques Watching Cartoon Animation To Pain Response During Infusion Of Preschool Children's In Rsud Sayang Kabupaten Cianjur

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Abstract: Infusion or intravenous therapy is an procedure performed by inserting electrolytes, drugs, blood and parenteral nutrition into the body through intravenous access. Infusion is one of the most invasive medical procedures and causes acute pain and fear in children. Distraction technique is a non-pharmacological method that can be given to children during infusion. This study aims to determine the effect of distraction techniques watching cartoon animation on pain response during infusion in preschoolers in RSUD Sayang Kabupaten Cianjur.

This research is a Quasi experimental study with the type of Posttest only equivalent Control Group Design. The sample of this study were children who were to be infused collected by 38 responder sampling techniques, namely 18 intervention group respondents (given a distraction technique watching cartoon animation) and 18 control group respondents (not given distraction techniques watching cartoon animation). The research instrument used to measure pain response during infusion was the Wong Baker Faces Pain Rating Scale. Data analysis used for bivariate is t-independent test.

The results of the t-independent test obtained p value of 0,000 (p value) 0.005) so H_a was accepted so that there was an effect of watching cartoon animation on pain response in pre-school age children during infusion. The results showed that the intervention of distraction techniques watching cartoon animation could reduce pain response during infusion in preschoolers from severe pain to moderate pain.

Based on the results of the study it is recommended that there should be a SOP on non-pharmacological therapy in a child care room as an alternative in handling pain in children.

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I. Introduction

The process of hospitalization of children will often cause anxiety because of the stressor in the form of separation from family, loss of control and fear of injury to the limbs (Potter & Perry, 2013). During treatment at this hospital, children experience separation from family, are in an unfamiliar environment and must undergo several nursing / medical procedures. Many reactions arise due to these conditions, but in general the reactions that arise are influenced by the age of development; previous experience with disease; separation or hospitalization; coping skills owned; severity of diagnosis; and existing support systems (Hockenberry & Wilson, 2013). The procedure performed on children during hospitalization varies, one of which is infusion. Infusion is one of the most invasive medical procedures and causes acute pain and fear in children (Silkorova & Hrazdilova, 2011).

II. Material And Methods

The research design used in this study is Quasi Experiment Design with the type of Posttest only equivalent Control Group Design. This Quasi Experiment intervenes in research subjects with or without comparison groups but does not randomize the subjects (Dharma, 2011). The total number of child population from January to March 2018 as many as 504 children who were hospitalized in a child care room of Rumah Sakit Sayang Kabupaten Cianjur.

Study Design: The research design used in this study is Quasi Experiment Design with the type of Posttest only equivalent Control Group Design.

Study Location: This research was carried out in Rumah Sakit Sayang Kabupaten Cianjur

Study Duration: This research starts from February to August 2018.

Sample Size: the total number of respondents for both groups in this study were 36 respondents.

Sample size calculation : The sample size calculation in this study uses a minimum sample calculation based on quasi-experimental research (Hidayat, 2011), as follows: $(t - 1) (r - 1) > 15$. It takes 16 respondents in each group. So that the total respondents needed for both groups are 32 children. To anticipate the possibility of a dropout or procedural error, the respondent will add 10% by completing the formula below (Sastroasmoro & Ismail, 2011): $n' = n / ((1-f))$ Based on the calculation results obtained the number of samples for each group is 17.7 (rounded to 18). So that the total number of respondents for both groups in this study were 36 respondents.

Inclusion criteria :

1. Preschool aged children (3-6 years);
2. Children who are cooperative, able to communicate verbally and non-verbally;
3. The child who is given the first IV infusion intervention.

Exclusion criteria :

1. An unconscious child;
2. Children with hearing loss;
3. Respondents who failed to take samples of research infusion.

Procedure methodology :

The implementation of this research through the following stages:

- a. Researchers select prospective respondents who are in accordance with the inclusion and exclusion criteria.
- b. Researchers determine the prospective respondents who are controlled first, then only after the control group is collected all of them then collect respondents for the intervention group.
- c. During the implementation of the study, observations were carried out by 2 (two) people, namely researchers together with 1 (one) research assistant. For the next, observers are called observers. The Observer selects and determines the respondents of the animated intervention group watching cartoons on the pain response during infusion of preschool children and controls according to the inclusion criteria.
- d. Researchers introduce themselves and explain the aims and objectives of the researcher to children and parents.
- e. The researcher provides information about the techniques that will be used when the research takes place to children and parents and provides an opportunity to ask parents
- f. Researchers allow parents to sign an informed consent sheet
- g. In the intervention group watching cartoon animation, there are several stages of data collection, namely as follows:
 - 1) Assessing family assistance until the infusion procedure is completed
 - 2) Assess identity that consists of age, gender, previous experience
 - 3) Ensure the schedule for infusion
 - 4) Preparing Hp (cartoon animation media) containing the serial selected Islamic cartoon
 - 5) The cartoon animation intervention procedure starts with the same recording tool, after the cartoon animation runs in the 3rd minute, the nurse starts to install the tourniquet and cleanses the area to be inserted infusion, right in the 5th minute, the nurse inserts IV line into the respondent's blood vessels After entering the needle pull from the body of the respondent, the researcher turns off the cartoon animation and then examines the client's pain response while undergoing the procedure
- 6) Complete questionnaire sheets followed by data processing
- h. In the control group, the data collection stage is carried out as follows:
 - 1) Assessing family assistance until the infusion procedure is completed
 - 2) Assess identity that consists of age, gender, previous experience
 - 3) Ensure the schedule for infusion
 - 4) Preparing infusion equipment
 - 5) Perform infusion by nurses (starting with the same recording tool)
 - 6) The nurse starts to install the tourniquet and cleanses the area to be inserted into the infusion, the nurse enters the IV line into the respondent's vein, after entering the needle pull from the respondent's body, after the infusion is complete, assessing the pain response of the client while undergoing the infusion procedure
 - 7) Complete questionnaire sheets followed by data processing

Statistical Analysis

Univariate analysis in this study was conducted to explain or make a picture of the data related to the dependent variable (bound), namely the pain response. Categorical data (nominal or ordinal scale variables) presentation in the form of frequency distribution with percentage (proportion), while for numeric data (interval scale variables or ratios) presentation in the form of mean, median and standard deviation, minimum value, maximum value and 95% CI (confidens interval).

In this study the bivariate test was conducted to determine the effect of distraction techniques watching cartoon animation on infusion in the intervention group and in the control group without intervention.

The steps taken are to test the normality of the data then see the Kolmogorov Smirnov value or use the Svekness number value and the standard error. If the results of the Kolmogorov Smirnov / Shapiro Wilk test (p value $> \alpha$ 0.05) then the data is normally distributed or if the svekness value is divided by the standard error produces a number ≤ 2 , then the data is normally distributed. After the data is declared to be normally distributed, the hypothesis test used is the t-independent test (unpaired t test) (Riyanto, 2011).

In this study, the results of the analysis of the normality test based on the results of the division between Svekness values and standard errors in the pain response of the group given the distraction technique watching cartoon animation was -0.92 and the pain response of the group who were not given distraction technique watching cartoon animation was -0, 71. This means that the results of the normality test on the pain response of both groups are normally distributed so that the statistical test used is the t-independent test.

Based on the t-independent test results obtained p value of 0.000 (p value ≤ 0.05) means that there was a significant effect between the children given the distraction technique intervention watching cartoon animation with the control group children who were not given distraction techniques watching cartoon animation during infusion. The results also showed that there was an influence of the distraction technique watching cartoon animation on the pain response of preschoolers during infusion.

III. Results

This chapter presents and explains the results of research and discussion related to the research conducted. The purpose of this study was to determine the effect of distraction technique watching cartoon animation on pain response when infusion was performed on pre-school age children in Sayang District Hospital Cianjur Regency. Data collection was conducted on July 9-28 2018 with the number of samples obtained according to the calculation of the sample of 18 children for the intervention group (given a distraction technique intervention watching cartoon animation) and 18 children for the control group (not given a distraction technique intervention watching animation cartoons) then analyzed using univariate and bivariate analysis.

1. Univariate Analysis

a. Overview of Demographic Characteristics of Intervention Group and Control Group Respondents

Based on Table 1 shows that the age of the most respondents in the intervention group were given distraction techniques watching cartoon animation, namely the age of 3 years, 4 years and 5 years, each amounting to 4 people (22.2%), whereas in the control group who were not given distraction techniques watching cartoon animation that is 4 years old totaling 5 people (27.8%). In table 1 the same shows where the male sex is the most in the two groups. The number of respondents with male gender in the intervention group who were given distraction techniques watching cartoon animation was 12 people (66.7%) and the control group who were not given distraction techniques watched cartoon animation as many as 10 people (55.6%). Table 1 also shows that all assistance was accompanied by families in the two groups. Each group is 18 people (100%).

Table 1: Distribution of Frequency of Respondents by Age, Gender, and Assistance in Sayang RSUD Kabupaten Cianjur (N = 36)

Characteristics of respondents		Intervention Groups (Given Distraction Techniques Watching Cartoon Animations) (n = 18)		Control Group (Not given Distraction Techniques Watching Cartoon Animation) (n = 18)	
		F	%	F	%
Child's age	3 years old	4	22.2	4	22.2
	3.5 years old	2	11.1	1	5.6
	4 years old	4	22.2	5	27.8
	4.5 years old	1	5.6	1	5.6
	5 years old	4	22.2	3	16.7
	6 years old	3	16.7	4	22.2
amount		18	100	18	100
Sex	Male	12	66.7	10	55.6
	Female	6	33.3	8	44.4
amount		18	100	18	100
Accompaniment	Accompanied by	18	100	18	100
	Not accompanied	-	-	-	-
amount		18	100	18	100

b. Overview of Intervention Group Pain Response (Given Distraction Technique to Watch Cartoon Animation)

Based on Table 2 shows that the frequency distribution of pain response in the intervention group given cartoon animation watching obtained an average child pain response of 2.61 with the category of pain being standard deviation 0.502, the lowest pain response 2 (two) and the highest pain response 3 (three) Based on the results of the interval estimation it was concluded that 95% believed that the mean pain response of the group given the distraction technique was watching cartoon animation in children during infusion between 2-3 pain responses

Table 2: Distribution of Pain Response Intervention Frequency Frequency (Given Distraction Technique Watching Cartoon Animation) in Sayang RSUD Kabupaten Cianjur (N = 18)

Intervention Groups (Given Distraction Techniques Watching Cartoon Animations)			
Mean	SD	Min-Max	95%CI
2.61	0.502	2-3	2.36-2.86

c. Overview of Control Group Pain Response (No Distraction Technique Watched Cartoon Animation)

Based on table 3 shows that the frequency distribution of pain response in the control group who were not given distraction techniques watching cartoon animation obtained an average pain response of children at 4.28 with severe pain category, standard deviation 0.669, lowest pain response 3 (three) and highest pain response 5 (five). Based on the results of the interval estimation, it was concluded that 95% believed that the mean pain response of the group given intervention was watching cartoon animation in children during infusion between 3-5 pain responses

Table3: Distribution of Pain Response Intervention Frequency(No Distraction Technique Watched Cartoon Animation) in Sayang RSUD Kabupaten Cianjur(N = 18)

Control Group Pain Response (No Distraction Technique Watched Cartoon Animation)			
Mean	SD	Min-Max	95 % CI
4.28	0.669	3-5	3.95-4.61

2. Bivariate analysis

The presentation of bivariate analysis is the presentation of data about the results of the t-independent analysis between the intervention group given distraction techniques watching cartoon animation and the control group who were not given distraction techniques watching cartoon animation. Based on table 4 it can be concluded that pre-school age children during infusion with given distraction techniques watching cartoon animation on average experienced moderate pain response of 2.61 while those who were not given distraction techniques watched cartoon animation on average experienced a severe pain response of 4, 28. Statistical results with the t-independent test obtained p value of 0,000, it can be concluded that there was a significant influence between children given distraction techniques watching cartoon animation with children who were not given distraction techniques watching cartoon animation during infusion.

Table4: Frequency Distribution of the Effects of Distraction Techniques Watching Cartoon Animation on Pain Response when Installing Infusions in Intervention Groups and Control Groups in Sayang RSUD Kabupaten Cianjur (N = 36)

Kelompok Responden	N	Mean	SD	P Value
Intervention Groups (Given Distraction Techniques Watching Cartoon Animations)	18	2,61	0,502	0,000
Control Group (Not given Distraction Techniques Watching Cartoon Animation)	18	4,28	0,669	

IV. Discussion

Based on research from Pourmovahed, et al (2008) and Daniela, et al (2010) explained that there are differences in the level of development in the age group of children can affect children react to pain. The increasing age of the child, will also increase tolerance to pain experienced.

The possibility of this happening because the youngest age of respondents in the pre-school age group is 3 years and the biggest age is 6 years. This is according to the theory of 2-4 years old children including in the pre-conceptual phase where in this phase the child has formed a concept that is immature and illogical compared to adults, linking events with other events, having self-oriented thoughts, and making clarifications that are still relatively simple. While for the age of 4-6 years is included in the intuitive phase where in this phase the child has begun to be able to add, classify, and connect objects. The child also has an intuitive way of

thinking that is aware of something that is right but does not know the reason, the words used are many that are appropriate but cannot understand the meaning.

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Effective distraction techniques used in medical procedures that cause preschoolers are very easily distracted or diverted so that distraction techniques can help in pain management. Besides this technique is easier and can be done by nurses. Distraction technique is an intervention that is often used to reduce pain in children. Where this technique aims to make the child distracted from the pain he feels. One of the passive distraction techniques that can be done in children is watching animated cartoons (Twycross et al., 2009).

Preschoolers can react to the injection as much as pain when infusing, but the response of preschoolers to preparation in terms of intervention (infusion) is better than the response of toddlers (Yuliestika, Octafiani, Rusmariana & Hartanti, 2012). The possibility of this happening according to Piaget's cognitive theory, children aged 2-7 years are at the preoperational stage. At this stage shows that the child is in the phase of limited thinking, so at this stage the child has not yet thought operationally. Children at this age are strongly influenced by egocentric perceptions and thoughts (Muscari, 2009)

Children at this age also have the highest level of distress and anxiety compared to other ages (Walco, 2008). This is what affects the perception of pain so that the child will report pain at a higher level according to his perception.

According to Mediani et al (2005), children's behavior activities during infusion procedures show that children experience pain especially for the 1-5 year age group (toddler and preschool children). This is because toddler and preschool children have not been able to tolerate the pain they feel. According to Kirkpatrick and Tobias (2013), the response of toddler and preschool children to pain is crying, increased blood pressure; Respiratory; pulse (physiological response), and the child tends to protect the painful part. Toddlers continue to react with strong emotional anger and physical resistance to both actual and perceived pain experiences. Toddler-age children can react to procedures that do not cause pain as hard as painful procedures. Toddler-age children tend to be more restless and very active during pain.

Traumatic that occurs in preschoolers tends to be more aggressive, sensitive and very active when feeling pain during the implementation of invasive procedures. The responses shown to preschoolers for pain include grimacing in pain, clamping their lips or teeth, opening their eyes wide, shaking, acting aggressively like biting, hitting, kicking and running away (Wong, 2013).

The implementation of atraumatic care has an important role because it aims to limit or reduce unpleasant experiences, including pain. Even Huff, et al (2009) revealed that venous blood sampling was ranked 4th out of 16 painful procedures for adults aged 20 years and over. Given this description, the non-pharmacological pain management is part of atraumatic care that must be provided by each nurse to pediatric patients. One method of non-pharmacological pain management that can be done is the distraction technique watching cartoon animation.

Pain control in children is a priority and must be directed by professional health professionals when dealing with sick children. Therefore, it is important for health workers to understand the concepts and techniques of pain reduction in children (Andarmoyo, 2013).

In principle, the distraction technique is a way to divert the child's focus from pain in other activities that are fun for children (Pillitteri, 2010). Children love elements such as pictures, colors and stories in animated cartoons. Elements such as images, colors, stories, and emotions (happy, sad, exciting, excited) contained in cartoon films are elements of the right brain and the sound arising from the film is the left brain element. So by watching an animated cartoon of the right brain and the left brain of the child at the same time it is used both in a balanced manner and the child focuses on cartoons. Based on the gate control theory, when the nurse injects a needle, it stimulates small nerve fibers (pain receptors) which causes inhibition of inactive neurons and open gates, while at the same time the researcher provides a distraction technique in the form of animated cartoons, which stimulate large nerve fibers, causing inhibitory neurons and active projection of neurons. But inhibitory neurons prevent projection neurons from sending signals to the brain, so the gate is closed and stimulation of pain received does not reach the brain.

This distraction technique research watching animated cartoons is in line with research conducted by several experts such as James et al (2012), using a quasi-experimental research design. The study aimed to see the effect of watching animated cartoons on the behavioral response of pain perception of preschoolers who underwent venipuncture. The results of this study showed that there was a significant reduction in pain after the child watched a cartoon film during venipuncture. From the results of these studies, researchers suggest that watching cartoons can be used to overcome the response of children's pain behavior when undergoing invasive procedures effectively. Distraction is able to divert the attention of clients to other things so that it can reduce alertness to things that make it uncomfortable, even increasing tolerance to the discomfort. One type of distraction is audiovisual distraction which is a combination of auditory distraction (audio) and visual distraction. This form of distraction is by displaying favorite shows in the form of motion pictures and voices or

animations in the hope that the patient is preoccupied with the spectacle, thus ignoring discomfort and showing a good reception response (Tamsuri, 2007; Rusman, 2012).

Audiovisual distraction is an effective form of distraction for pre-school age children because audiovisual distribution shows funny cartoon characters who provide education in a simple and interesting language, making children feel happy, entertained and get educational value. During the infusion procedure, children enjoy the cartoon shows presented. This is certainly able to reduce the child's bad response which usually occurs when the injection procedure takes place because the child focuses on the shows that are presented and listens to what is conveyed by the cartoon character.

The effect of distraction technique watching cartoon animation on pre-school age children is inseparable from the theory of comfort according to Alligood. M.R. (2014) namely comfort measures. This theory explains that the intervention of the distraction technique watching cartoon animation performed for pre-school age children get the comfort that is needed during the infusion procedure.

Theoretically, the distraction technique is diverting children's attention from pain and can help reduce pain perception and increase comfort (Curtis, Wingert, & Ali, 2012). In addition, according to experience, children prefer objects they can touch during infusion. In a critical review in pediatrics, Koller and Goldman (2012) concluded that patient preference is important in choosing a distraction technique. Meanwhile, technical interruption must be in accordance with patient preferences and temperament (Koller & Goldman, 2012).

The effect of distraction technique watching cartoon animation on pre-school age children in this study from the comfort Kolcaba theory. According to Kolcaba, increasing comfort can strengthen the acceptance of children and families to be involved in activities needed to achieve health and health care. The nurse can facilitate an environment that supports recovery and rehabilitation by convincing the child / family that he or she can recover, providing a sense of security, protecting from danger, and being able to participate in treatment plans that are appropriate to the stage of development. The basic process of comfort that most plays a role in this study for respondents is intervening variables, namely respondents are able to interact with the intervention conducted by nurses in the form of watching cartoon animation so that it affects the response of pain during the infusion procedure.

Comfort is an experience that is gained at this time which is strengthened by the fulfillment of the need for relief and easy, a condition that is free from specific discomfort in the form of pain, fear of the act of infusion. The role of nurses in transcendence is by improving environmental conditions by modifying the environment such as distraction techniques watching cartoon animation during infusion.

V. Conclusion

Based on the t-independent test results obtained p value of 0,000 ($p \text{ value} \leq 0.005$) then H_a was accepted so that there was an effect of watching cartoon animation on pain response in pre-school age children during infusion. The results showed that the intervention of distraction techniques watching cartoon animation could reduce pain response during infusion in preschoolers from severe pain to moderate pain.

Reference

- [1]. Alligood. M.R. (2014). *Pakar Teori Keperawatan*. Edisi Indonesia Ke-8 Volume 2. Jakarta : Elsevier
- [2]. Asmadi (2008). *Teknik Prosedural Keperawatan Konsep Dan Aplikasi Kebutuhan Dasar Klien*. Jakarta : Salemba Medika
- [3]. Bagnasco, A., Pezzi, E., Rosa, F., Fornonil, L., & Sasso, L. (2012). *Distraction techniques in children during venipuncture: An Italian experience*. *Journal of Preventive Medicine and Hygiene*, 53(1), 44–48.
- [4]. Baulch I. (2010). *Assesment and management of pain In the paediatric patient*. *Nursing Standard*. 25 (10), 35-40
- [5]. Berman, A. Snyder, S.J, Kozier, B, Erb, G. L. et al. (2014). *Kozier &erb's fundamental of nursing Australian edition (vol.3)* Pearson higher Education AU
- [6]. Bisogni, S., et.al. (2014). *Perception of Venipuncture Pain in Children Suffering from Chronic Diseases*. *BMC Research Notes*, 7(735) : 1-5.
- [7]. Brannon, L, Feist, J and Updegraff, J.A. (2013). *Health psychology:an introduction to behavior and health, eight edition*. USA : Wadsworth
- [8]. Canbulat, N, Inal, S & Sonmezer, H. (2014). *Efficacy of Distraction Methods on Procedural Pain and Anxiety by Applying Distraction Cards and Kaleidoskope in Children*. *Asian Nursing Research* 8: 23-28.
- [9]. Curtis, S., Wingert, A., & Ali, S. (2012). *The Cochrane Library and procedural pain in children: An overview of reviews*. *Evidence-Based Child Health: A Cochrane Review Journal*, 7(5), 1363–1399. doi:10.1002/ebch.1864
- [10]. Daniela, M., et al. (2010). *Physiology of Pain – General Mechanisme and Individual Differences*. *Jurnal Medical Aradean*, 8 (4): 19-23
- [11]. Dharma, K. K. (2011). *Metode Penelitian Keperawatan*. Jakarta : Trans Info Media
- [12]. El-GAWad, S. M. E., & Elsayed, L. A. (2015). *Effect of Interactive Distraction Versus Cutaneous Stimulation for Venipuncture Pain Relief in School Age Children*. *Journal of Nursing Education and Practise*, 5(4) : 32-40.
- [13]. Gupta, V.V. et al. (2014). *Comparison between the Analgesic Effect of two Techniques on the Level of Pain Perception During venipuncture in Children up to 7 Years of Age: A Quasi-Experimental Study*. *Journal of Clinical and Diagnostic Research*. Vol-8(8): PC01-PC04
- [14]. Ha YO, Kim HS. (2013). *The effects of audiovisual distraction on children's pain during laceration repair*. *International Journal of Nursing Practice*; 19 (Suppl. 3): 20–27
- [15]. Hari Soetjningsih, C. (2012). *Perkembangan Anak*. Prenada Indonesia. Kencana

- [16]. Harrison, D., et al. (2014). *Pain prevalence in A Pediatric Hospital : Raising Awareness During Pain Awareness Week*. Pain Research and Management, 19(1) : e24-e30.
- [17]. Hidayat, A. A. A. (2011). *Metode Penelitian Keperawatan dan Teknik Analisis Data*. Jakarta : Salemba Medika
- [18]. Hockenberry, M.J dan Wilson, D. (2009). *Wong's essentials of pediatric nursing* (9th ed). St. Louis : Mosby Elsevier
- [19]. Huff, L., Hamlin, A., Wolski, D., McClure, T., Eliades, A. B., Weaver, L., & Shelestak, D. (2009). *Atraumatic care: EMLA cream and application of heat to facilitate peripheral venous cannulation in children*. Issues in comprehensive pediatric nursing, 32 (2): 65-76.
- [20]. James, J. Ghai, S. Shama, N. (2012). *Effectiveness of Animated Cartoons as a distraction strategy on behavioral response to pain perception among children undergoing venipuncture*. Nursing and Midwifery Research Journal, 8(3) : 198-209
- [21]. Kaheni S; et all. (2016). *The Effect of Distraction Technique on the Pain of Dressing Change among 3-6 Year-old Children*. International Journal Paediatrics. Page 1603-1610
- [22]. King, H. et all. (2016). *Distraction and Relaxation techniques for children*. *Children's pain management*. Nottingham
- [23]. Kirkpatrick, T., & Tobias, K. (2013). *Pediatric age specific: self learning module*. Dari <http://hr.uclahealth.org/workfiles/AgeSpecificSLM-Peds.pdf>.
- [24]. Koller, D., & Goldman, R. D. (2012). *Distraction techniques for children undergoing procedures: A critical review of pediatric research*. Journal of Pediatric Nursing, 27(6), 652– 681. doi:10.1016/j.pedn.2011.08.001
- [25]. Kyle, T, Carman . S. (2015). *Buku Ajar Keperawatan Pediatri*. Edisi 2 Jakarta : EGC
- [26]. Lee, J. (2012). *Anesthesia-analgesia. Cartoon Distraction Alleviates Anxiety in Children During Induction of Anesthesia*, 115 (5), 1168-1173.
- [27]. LPPM STIKES A. Yani. (2018). *Pedoman Penulisan dan Petunjuk Tesis Program Studi Ilmu Keperawatan S-2*. Cimahi
- [28]. Maharjan, S, Maheswari. B. U, Maharjan. M. (2017). *Effectiveness of Animated Cartoon as a Distraction Strategy on Level of Pain among Children Undergoing Venipuncture at Selected Hospital*. International Journal of Health Sciences & Research (www.ijhsr.org), Vol.7; Issue: 8; August 2017: 248-252.
- [29]. Mediani, H. S., Mardiyah, Mediani, H. S., Mardiyah, A., Rakhmawati, W. (2005). *Respon nyeri infant dan anak yang mengalami hospitalisasi saat pemasangan infus*.
- [30]. Muscari, M. E. (2009). *Keperawatan Pediatrik*. Jakarta : EGC
- [31]. Notoatmodjo, S. (2014). *Metodologi Penelitian Kesehatan*. Jakarta : Rineka Cipta
- [32]. Nursalam. (2011). *Konsep dan Penerapan Metodologi Penelitian Ilmu Keperawatan*. Jakarta : Salemba Medika
- [33]. Pillitteri, A. (2010). *Maternal & Child Health Nursing: Care of the Childbearing & Childrearing Family*. New York : Lippincott Williams & Wilkins
- [34]. Potter, A.P., & Pery, G.A. (2010). *Buku Ajar Fundamental Keperawatan : Konsep, Proses, dan Praktik Edisi 8*. Jakarta : EGC
- [35]. Pourmovahed, Z, et al (2008). *Comparative Study of The Effect of Music Distraction and EMLA cream on Pain of The Children During Intravenous Cannulation*. Iran Journal of Nursing, 21 (55): 47-53
- [36]. Sadeghi T, et all. (2013). *Effect of distraction on children's pain during intravenous catheter insertion*. Journal for Specialists in Pediatric Nursing 18 (2013) 109–114.
- [37]. Sastroasmoro, S. & Ismail, S. (2011). *Dasar-dasar Metodologi Penelitian Klinis Edisi Ke-4*. Jakarta : Sagung Seto
- [38]. Silkorova, I., & Hrazdilova, P. (2011). *Effect Psychological Intervention on Perceived Pain in Children Undergoing Venipuncture*. Biomedical Papers, 155(2) : 149-154.
- [39]. Sinatra, R.S et all. (2009). *Acute pain management*. USA : Cambridge university press.
- [40]. Smeltzer, S. C. & Bare, B. G. (2012). *Buku Ajar Keperawatan Medikal Bedah Brunner & Suddarth*. Jakarta : EGC.
- [41]. Srouji, R., Ratnapalan, S., & Schneeweiss. (2010). *Pain in Children : Assessment and Nonpharmacological Management*. International Journal of Pediatrics, 474 (11) : 838-842.
- [42]. Supartini, Y. (2014). *Konsep Dasar Keperawatan Anak*. Jakarta : EGC
- [43]. Svendsen, E. J and Bjork. I. T. (2014). *Experienced nurses use non pharmacological approaches comprise more than relief from pain*. Journal of pediatric nursing, 29(4), pp. e19-e28
- [44]. Taddio. A., et.al. (2010). *Inadequate Pain Management During Routine Childhood Immunization : the nerve of it*. *Clinical Therapeutics*. 31 Suppl 2, 5152-5167.
- [45]. Tamsuri, A. (2009) *Konsep dan Penatalaksanaan Nyeri*. Jakarta : EGC
- [46]. Thrane E Susan, et all. (2015). *The Assessment and Non-Pharmacologic Treatment of Procedural Pain From Infancy to School Age Through a Developmental Lens: A Synthesis of Evidence With Recommendations*. Journal of Pediatric Nursing (2015)
- [47]. Twycross, A, Dowden S.J, and Bruce , E. (2009). *Managing pain in children a clinical guide*. USA : Blackwell
- [48]. Walco, G. (2008). *Needle Pain in Children : contextual factors*. Journal of the America Academy of Pediatrics, 19 (1) : 55-61
- [49]. Wente, S. J. (2013). *Non pharmacologic pediatric pain management in emergency departments: a systematic Review of the literature*. J Emerg Nurs , 39 (2), 140-150 - DOI:10.1016/j.jen.2012.09.011
- [50]. Windura, S. (2008). *Brain mgt series: be an absolute genius*. Jakarta : Gramedia
- [51]. Xiaolian, J, Li Xiaolin, L, Lan Z H. (2015). *Effects Of Visual And Audiovisual Distraction On Pain And Anxiety Among Patients Undergoing Colonoscopy*. Society Of Gastroenterology Nurses And Associates. Volume 38 | Number 1 | January/February 2015. DOI: 10.1097/SGA.0000000000000089

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