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Upper Position and Distraction Model Of Bobath Ball Towards Reduction In Immunization Pain Level

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ABSTRACT
Immunization in infancy is traumatic because it causes pain. Efforts that can be made to reduce pain are by doing pain management. The form of distraction of the baby to pain or distraction with a bobath ball and the upright position during immunization can reduce pain levels. The purpose of this study was to identify the effectiveness of the sitting up position and Bobath ball distraction on the level of pain in infants aged 7-9months during immunization. This study used an experimental design, namely Quasi-experimental post-test only with non-equivalent control group design. The samples in this study were infants aged 7-9months in the last 6 months from October 2019-March 2020 who met the criteria. Pain was measured using the MBPS (Modifield Behavior Pain Scale) instrument. The results obtained a pre average pain of 3.07. Wilcoxon test obtained p 0.001, where giving a bobath ball in an upright position can reduce pain in infants during immunization. Respondents' pain response was lower after giving the bobath ball, which was measured using MBPS. The MBPS instrument consists of 3 indicators, namely facial expressions, crying expressions and movement expressions. Patients showed a mean reduction in pain with a post score of 2.23. There were differences in the pain response in children before and after being given the bobath ball upright position.

Keywords : Bobath ball, Immunization, Pain Management

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BACKGROUND

During the first year of life, the baby will receive routine immunizations. Immunization is a painful procedure because most of the immunizations are given by injection. This pain is a problem that must be overcome, because the comfort that the baby receives is very important for the development of trust, which is one of the developmental tasks at the infant's age. According to Erikson's theory, in this first phase (birth to 1 year) the development of this trust is a sense of confidence in oneself, others and the world around them. The most important element in this developmental task is the quality of the relationship between parents (caregivers) and the care the child receives (Hockenberry, Wilson , Wong, Donna, & Wilson, 2011).

The quality of the relationship between the parent and the baby will help the baby complete his developmental tasks perfectly. When babies feel uncomfortable, the presence of parents with the baby will increase their sense of comfort and develop trust and learn healthy adaptive coping responses. This has led to studies related to efforts to increase comfort during infancy, including studies on efforts to reduce pain due to procedures performed on babies. Several pain management studies found a way to reduce immunization pain in infants, namely by using pharmacological and non-pharmacological therapies. Non-pharmacological interventions are preferred because they have few side effects and are based on clinical assessment, so that nurses can also do so when the doctor is not available (Kashaninia, Sajedi, Rahgozar, & Noghabi, 2008).

Non-pharmacological therapy is recommended for mild pain relief because of its short-term effects with good tolerance. Distress behavior shown by babies is a baby's way of communicating the pain he feels. The pain that arises makes the baby uncomfortable, afraid of situations associated with the onset of pain, and in the end the baby makes movements in an effort to escape the pain stimulus. Behaviors exhibited by infants, such as crying and struggling, can cause stress for nurses and parents, make it difficult and distracting when nurses provide interventions (Kashaninia, Sajedi, Rahgozar, & Noghabi, 2008).

Based on the description above, nurses need to identify non-pharmacological pain management in reducing pain in infants. For this reason, it is necessary to identify the effectiveness of the upright position and the distraction of the bobath ball on the pain felt by the baby during the injection of immunization. This intervention is expected to be the best recommendation in reducing the level of pain shown by the baby's behavior

METHOD

This study used an experimental design, namely Quasi-experimental post-test only with non equivalent control group design. The purpose of this study was to identify the effectiveness of the upright position and distraction of the Bobath ball on the level of pain in infants aged 7-9months during immunization. Measuring the level of pain was carried out with the Modified Behavior Pain Scale or MBPS instrument using 3 assessment indicators consisting of facial expressions (score 0-3), crying expression (score 0-4) and movement expressions.

The sample in this study were all babies aged 7-9months at Publich Health Center of Sempor 1. The inclusion criteria were: 1) Statement of consent from the mother to become research respondents by signing a letter of consent and informed consent, 2) The age of the baby was 7-9months. Exclusion criteria: 1) Babies with birth defects, 2) Babies with acute illness. The sampling technique used consecutive sampling, the sample size was 30

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respondents with an upright bobath ball distraction. The research was conducted from October 2019 to March 2020

RESULT

The research data was taken in March 2019 at Puskemas 1 Sempor, there were 30 respondents who will be immunized. Implementation is carried out for babies aged 7-9 months accompanied by their parents. Assessment is measured after the respondent is given immunization while sitting on a bobath ball and seeing the pain response after being given immunization. Following are the results of the research data shown in the table.

1. Age distribution of respondents
   Table of ages of respondents who were given a bobath ball in an upright position during immunization

age	n	%
7-9 months	30	100
Total	30	100

Based on the table above, all 30 respondents (100%) have been given a sitting position intervention in a bobath ball to reduce immunization pain.

2. Distribution of average pre and post pain levels
   Table Mean pre and post pain levels are given an upright position in a bobath ball

	Mean	Median	n		SD
			Min	Max	
Pre	3,07	3,00	2	5	1,081
Post	2,23	2,00	0	4	0,898

Based on the table above, the mean, median, maximum, and standard deviation of the pain response felt by the respondent were greater before (pre) being given a sitting position in a bobath ball, namely the mean value of 3.07, median 3.00, maximum 5 and standard deviation of 1.081. . The minimum value of the respondent after (post) being given an upright position in a bobath ball is 0.

3. Distribution of data normality test with Saphiro Wilk
   Table Normal test data with Spahiro Wilk when giving bobath ball in a sitting position during immunization

	Age (months)	n	*P value*
5 sec (pre) 15 sec (post)	7-9	30	0.000

Based on the table above, the p value is 0.000, which is smaller than <0.05, indicating that the data is not normally distributed, so the data analysis test uses non-parametric test (Wilcoxon test).

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4. Distribution of Wilcoxon test, giving bobath ball in an upright position to reduce pain in infants during immunization

   Table Analysis of the correlation between giving a bobath ball and a sitting position to reduce pain in infants during immunization

Variabel	*Mean Rank*		*Sum of Rank*		*P value*
	negative	positive	negative	positive	
5 sec (pre) 15 sec (post)	6,50	11,21	19,50	190,50	0,001

Based on the table above, the p value is 0.001 (<0.05), indicating that there is a difference in the pain response in children before (pre) and after (post) being given an upright position in a bobath ball.

DISCUSSION

Melzack and Wall (1965), stated in the gate control theory that pain impulses can be regulated until they are inhibited by the mechanism of the central nervous system. This theory explains how non-painful sensations can reduce pain sensations. Painful nociceptive stimuli stimulate primary afferent nerves and travel to the brain via transmission cells. The increased activity of the transmission cells results in an increase in perceived pain. Conversely, a decrease in the activity of the transmission cells reduces the pain that is felt. In gate control theory, it describes when the input to the transmission cell is blocked, thereby reducing the sensation of pain. This is the basis of therapy in pain control (Wade & Travis, 2014). There are several observations that cannot be explained in detail for this theory, but this theory can accurately explain the psychology of pain perception (Moeyadi & Davis, 2012).

The results of this study indicate that there are differences in the response to pain in respondents before (pre) and after (post) being given an upright position in a bobath ball. The mean pain response generated by the respondent can be seen from the mean, median, maximum and standard deviation values. The value before (pre) was given an upright position in the bobath ball, namely mean 3.07, median 3.00, maximum 5 and a standard deviation of 1.081. This shows that the pain response to respondents before (pre) treatment is higher than after (post) treatment. Immunization is closely related to needles which can cause anxiety and can even cause distress in children during visits to health services to get vaccines (Harrington, 2012). In line with research conducted by Aziza (2016), it shows that there is a difference in the response to finding when immunization in the intervention group with the control group where the p value is <0.005 (p = 0.000). The results of the study stated that the pain response in the intervention group was lower than the control group after being given therapy using a bobath ball. Pain measurement uses the MBPS (modifies behavior pain scale).

The pain caused by immunization can cause changes in future responses to painful feelings, including fear of needles. Although there are various forms of intervention for pain relief, they are not always used in clinical practice. Different nonpharmacological strategies for dealing with pain as children can be done (Tadio et al, 2019). Diversion techniques are widely used for pain management during immunization. Diversion can

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contribute to strategies to reduce respondents' anxiety and pain during immunization. Parental involvement in the transfer process can also affect the success of the intervention, thus helping the nursing team (Cohen et al, 2015; Tadio et al, 2013).

Potter & Perry (2010) explains that one of the pain management techniques in infants is a distraction technique. Distraction technique is a way to reduce pain by distracting clients, one of which is distraction using a bobath ball. In line with research conducted by Ardian, Lamri and Siregar (2019), the results of the research conducted showed the effect of distraction techniques using a bobath ball on the pain scale in infants with measles immunization. Pain was measured using FLACC with the mean score obtained in the intervention group, namely 6.17 and 8.33 in the control group. This mean means that the pain response felt is higher in the untreated control group. Kucukoglu, Kurt, and Aytekin (2015), stated that giving distraction with a change in position can reduce the pain response in newborns during immunization. These techniques are very simple, do not cost a lot, do not provide pain relievers, and are non-invasive.

This study has limitations, namely it does not have a control group, so it is not able to control the results of the study by distinguishing the group that was given treatment and the group that was not given treatment

CONCLUSION

The average pain before being given the bobath ball upright position action was 3.07 and the average pain after being given the bobath ball upright position was 2.23

Modified behavior pain scale or MBPS can be used to measure pain in infants aged 7-9 months with 3 assessment indicators consisting of facial expressions (score 0-3), crying expression (score 0-4) and movement expression

The bobath ball upright position is effective in reducing pain levels in children aged 7-9 months during immunization

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