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The Effect Of *Non-Nutritive Sucking* (Pacifier) On The Baby's Pain Response When Venous Blood Collection Is Carried Out In The Neonatology Room Of Lavalette Hospital

Frety Rahma Sari[a], Director Trigantara[b], Nining Loura[c]
[a,b,c] Bachelor of nursing study program STIKes Maharani Malang
*Corresponding Author: fretyrahmasari@gmail.com

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ABSTRACT

Introduction:Pacifiers are a safe and effective method that can provide comfort to newborns, especially when feeling sick. Neonatal babies born in the first 28 days often experience pain when undergoing treatment and treatment procedures, one of which is blood sampling
Objectives: *To determine the effect of giving non-nutritive (pacifier) on the pain response of infants when taking venous blood in the Neonatology Room*
Methods: The research design used is *quasi-experimental design.* The sample consisted of 2 groups, namely the control group without intervention totaling 30 infants and the NNS intervention group totaling 30 infants. Data analysis technique using Independent sample t test.
Results: The results showed that the value of equal variances assumed is known as the sig value. (2-tailed) of 0.000 < 0.05
Conclusions: It can be concluded that there is an influence of the baby's NIPS scale by giving pacifier intervention to the baby during venous blood collection at the hospital. Lavalette.

A. INTRODUCTION

Neonatal babies born in the first 28 days often experience pain when undergoing treatment and treatment procedures, one of which is blood sampling. Controlling pain plays an important role in preventing physical and psychological effects on babies (Talebi et al., 2022). Pain is an unpleasant feeling experienced throughout a person's life and can be aggravated by an illness or procedure in the hospital. The American Pain Association (1995) has labeled pain as the fifth vital sign and stressed the importance of repeated pain assessments (Dames et al., 2016).

Pain in neonates is very important to note because it leads directly to the sensory areas of the most active areas of the brain, and the pain transmission pathways develop completely. However, its inhibitory system is not well developed (Verklan et al., 2020). Newborns in neonatal wards are regularly faced with painful experiences and have the right to receive safe, efficient and effective pain relief (Wallace & Jones, 2017). Pain in neonates impacts both short- and long-term life, including sleep disturbances, heart rate, blood pressure, oxygenation, gastrointestinal motility, infant learning ability, hearing, nutrition, and growth (Venkataraman et al., 2018).

All neonates undergo at least one painful procedure during their first few days of life, such as screening neonates with blood in the heel for bilirubin (Mohamed et al., 2019). Most procedures performed by doctors and nurses in neonatal intensive care units are painful and unbearable for neonates (Roofthooft et al., 2017). Studies have shown that neonates in intensive care units undergo 7.5 to 17.3 painful procedures (Cruz et al., 2016).

Pain can be relieved through pharmacological and nonpharmacological methods. To reduce the use of some medications to relieve pain and minimize adverse effects on the immature neonatal system (Moraes et al., 2016). Nurses can use non-pharmacological methods to reduce pain in neonate. Some of these methods include sensory stimulation (swaddling, shaking,

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aromatherapy, non-nutrient sucking, and music). The next method is in the form of nutrients (sweet oral solution). Maternal intervention methods (mother's scent and voice, breastfeeding, skin-to-skin contact, kangaroo care) as an effective strategy to reduce pain in neonates (Lima et al., 2017).

Non-pharmacological pain layouts offer a lower risk than pharmaceutical pain management, as therapy includes the use of non-nutritional foods to relieve discomfort and provide comfort to the newborn during therapy. pacifiers can improve nervous system function in newborns throughout the first week of life. The pacifier is another effective strategy to stimulate and speed up the sucking reflex. Pacifiers are a riskless way to provide comfort to newborns, especially when they are unwell. (Vu-Ngoc et al., 2020).

Previous results have shown how effective non-nutrient suction can be in reducing newborn discomfort during invasive procedures such as heel piercing. (Pardinan & Rustina, 2021). Premature infants may benefit from a combination of BM-OT, HBs, and pacifiers as an intervention to help them recover from venous puncture procedures as well as prevent and reduce behavioral stress. (Wu et al., 2020). Efficacy of pain medication and safety of non-nutritional suction during unpleasant procedures (neonatal heel prick screening test). As a result, this simple procedure is applied in the inpatient room but also at home to relieve neonatal discomfort. (Vu-Ngoc et al., 2020). One way to stimulate smell is by giving milk and giving pacifiers or *non-nutritive* Sucking has a beneficial influence on neonatal pain reduction. Both approaches are useful in reducing mild to moderate discomfort, such as that caused by vaccination. (Amiri Shadmehri et al., 2020).

The results of a preliminary study from January to February 2023 at Lavalette Hospital from 10 neonates who took venous blood samples from 9 infants experienced pain on a scale of 2-5, which were included in the mild to severe category. During the venous blood draw, officers sometimes provide comfort by touching or doing light pats on the baby, where the baby still feels pain and cries. Based on the background of the above problem, researchers are interested in conducting a study entitled "The Effect of Non-Nutritive Sucking (Petifier) on the baby's pain response when venous blood collection is carried out in the Neonatology room of Lavalette Hospital." This research was carried out from July 1, 2023 to August 5, 2023 in the neonatalology room of the hospital. Lavalette.

B. RESEARCH METHODS

Based on the problems and objectives to be achieved, this study uses a *quasi-experimental research design,* with *a post test only control group design.* This method is carried out with the aim of looking for the effect of non-nutritive sucking (pacifier) on the baby's pain response when venous blood collection is carried out in the Neonatology room of Lavalette Hospital. The total sampling is 152 Babys and samples used in this study were 30 samples of the control group (*non-nutritive sucking) and 30 samples of the intervention group with* non-nutritive sucking. Total sample 60. *Non-probability sampling technique* by *purposive sampling The inclusion criteria in this study include: Neonates aged less than 28 days in the perinatology room, Neonates who underwent venous blood sampling, Neonates gestational age >32 weeks, Good sucking reflex, Neonates in a calm state before the procedure. Exclusion criteria in this study: Neonates with respiratory distress, Neonates receiving oxygen therapy, Neonates whose parents are not willing to be research subjects*. This study used the Neonatal Infant Pain Scale (NIPS) in the form of a table that assesses behavioral responses (facial expressions, crying, general condition, hand and foot movements). Measuring instruments used with non-nutrive sucking observation sheets. The analysis tool uses parametic statistics *independent sample t-test*.

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C. Results

Custom data

Table 1.1 Characteristics of the control group with NIPS of neonatalology room of the hospital. Lavalette.

Information	Scale NIPS						
	painless		mild pain		moderate pain		Total
Gender							
Man	0	0%	17	61%	1	50%	18
Woman	0	0%	11	39%	1	50%	12
Total	**0**	**0%**	**28**	**100%**	**2**	**100%**	**30**
Gestational Age							
Moderate Premature	0	0%	3	11%	0	0%	3
Late Premature	0	0%	9	32%	0	0%	9
Aterm	0	0%	16	57%	2	100%	18
Total	**0**	**0%**	**28**	**100%**	**2**	**100%**	**30**
Pain Experience							
not yet	0	0%	28	100%	2	100%	30
already	0	0%	0	0%	0	0%	0
Total	**0**	0	28	**100%**	**2**	**100%**	**30**
Difficulty of Blood Draw							
difficult	0	0%	3	11%	1	50%	4
not difficult	0	0%	25	89%	1	50%	26
Total	**0**	0%	28	100%	2	100%	30

Source : Research Data Processed (2023)

In table 1.1 above, it is known that the female sex has a better NIPS rate than the male sex. Gestational age has a better NIPS rate of 16 babies compared to gestational age Moderate Premature and Late Premature. Babies who have experienced venous blood drawing have a better NIPS scale than those who are inexperienced. Babies who have no difficulty in taking venous blood have a better NIPS scale compared to babies who have difficulty in drawing blood.

Table 1.2 Characteristics of intervention group respondents with NIPS of neonatalology room of the hospital. Lavalette.

Information	Scale NIPS						
	painless		mild pain		moderate pain		Total
Gender							
Man	15	50%	0	0%	0	0%	15
Woman	15	50%	0	0%	0	0%	15
Total	**30**	**100%**	0	0%	0	0%	**30**
Gestational Age							
Moderate Premature	2	7%	0	0%	0	0%	2
Late Premature	8	27%	0	0%	0	0%	8
Aterm	20	67%	0	0%	0	0%	20

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Total	**30**	**100%**	0	0%	0	0%	**30**
Pain Experience							
not yet	27	90%	0	0%	0	0%	27
already	3	10%	0	0%	0	0%	3
Total	**30**	100%	0	0%	0	0%	**30**
Difficulty of Blood Draw							
difficult	2	7%	0	0%	0	0%	2
not difficult	28	93%	0	0%	0	0%	28
Total	**30**	100%	0	0%	0	0%	30

Source : Research Data Processed (2023)

In table 1.2 above, it is known that the female sex has a better NIPS rate than the male sex. Gestational age term has a better level of NIPS than gestational age Moderate Premature and Late Premature. Babies who have experienced venous blood drawing have a better NIPS scale than those who are inexperienced. Babies who have no difficulty in taking venous blood have a better NIPS scale compared to babies who have difficulty in drawing blood.

Tabel 1.3 Independent Samples Test

Levene's Test for Equality of Variances		**t-test for Equality of Means**		
F	Say.	t	df	Sig. (2-tailed)
1.609	.093	23.028	58	.000
		23.028	29.000	.000

Based on table 1.3 above, it is known the value of Sig. Levene's Test for Equality of Variances of 0.093 > 0.5 can be interpreted as the value of equal variances assumed known as the value of sig. (2-tailed) of 0.000 < 0.05. It can be concluded that there is an effect of decreasing the NIPS scale on infants who are carried out *non-nutritive sucking* (pacifier) interventions during venous blood collection in hospitals. Lavalette.

D. DISCUSSION

1. Pain in babies who do not take action *non nutrive sukcing* (empeng) during venous blood collection in the Neonatology room of Lavalette Hospital Malang.

The results showed that babies did not perform non-nutrive succing, most of the time have NIPS scale values mild pain as much as 93%, 7% with moderate pain scale, and 0% no pain. Female babies have good NIPS levels compared to boys. The results of this study support the opinion Hastuti et al (2021), which suggests there is an influence of sex on neonatal pain response. So that the baby is not done *non nutirive sucking* Most feel pain. In the female sex has a light NIPS scale.

Gestational age has a better NIPS level than gestational age Moderate Premature dan Late Premature. This is due to control *Inhibiatics desendens* The center of the premature baby is less developed so the pain stimulus response is more intense (Apriani, 2022). While at the age of infants *late* and *moderate premature* the scale of NIPS is not good. Where in babies *aterm* The pain response is better and has developed well. It is more easily compensated for pain stimuli. Babies who have experienced venous blood drawing have a better NIPS scale than those who are inexperienced. The experience of pain in premature infants is lower than in infants with adaptive term that can modulate pain stimuli that are not experienced until 32-36 weeks of age (Apriani, 2022).

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Babies who have no difficulty in taking venous blood have a better NIPS scale compared to babies who have difficulty in drawing blood. Difficulties in taking venous blood cause trauma to the baby. Venous blood collection in infants without pacifier intervention makes babies feel uncomfortable due to environmental factors such as lighting and privacy. The results of this study support the opinion (Pardinan & Rustina, 2021) which states the difficulties experienced at the time of intervening are influenced by environmental factors such as lighting and privacy.

The results of this study support the research conducted by (Halimah, 2016) which reports if in infants undergoing invasive procedures there is an increase in infant comfort with NNS or locomotor massage, evidenced by a decrease in pain values with PIPP (Premature Infant Pain Profile), a decrease in changes in oxygen saturation values.

Further researchers who are in line with this study stated that the picture of neonatal pain in the treatment group obtained moderate pain values. The neonatal pain picture in the control group had a severe pain scale (Pramesti, 2018). Researchers argue that babies feel uncomfortable because they are in unfamiliar areas. The baby feels uncomfortable because he does not know the surroundings and strangers, so the baby feels restless. So with the baby given a pacifier to feel comfortable so that it can be distracted from pain.

2. Pain in infants performed the procedure *non nutrive sukcing* (pacifier) during venous blood collection in the Neonatology room of Lavalette Hospital Malang.

The results showed that the NIPS scale in infants with pacifier intervention showed that all infants had NIPS values in the painless range. Neonates in the treatment group with the female sex had better NIPS levels than the male sex. According to Hastuti et al (2021) Gender has an influence on the pain response to intravenous insertion. Where the pain response is better in the female sex than in the male sex. In women there is a better hormonal system than men. So that women are better in their pain response.

Gestational age term has a better level of NIPS than gestational age Moderate Premature and Late Premature. The level of pain experienced by the baby depends on his gestational age. Compared to adult newborns, premature babies feel more pain. Even the modulation of pain is different from premature babies, especially in babies between 36 and 40 weeks gestation. Premature neonates lack key mediators in pain modulation, including dopamine, serotonin, and norepinephrine, whose levels can drop dramatically. These factors contribute to the inability to control pain.

Babies who have experienced venous blood drawing have a better NIPS scale than those who are inexperienced. The experience of pain in premature babies is particularly painful because of their inability to modulate pain. In infants, one of the uncomfortable experiences felt, especially those that require special or intensive care is pain. Neonates are not yet able to express discomfort verbally, they express pain stimulation through behavior and physiology that can be seen through expression and increased heart rate and decreased oxygen saturation. (Alfina & Annisa, 2021) .

Babies who have no difficulty in taking venous blood have a better NIPS scale compared to babies who have difficulty in drawing blood. Venous blood collection that does not experience difficulties will reduce pain in neonate. Noenatus, who is already comfortable with pacifiers, is easier to draw venous blood. If Not treated properly when pain occurs can result in emotional experiences and tissue damage, as well as interfere with brain development, and physiological behavior which can affect the process and disruption of learning and behavior of children in the future. Various non-pharmacological interventions are used to reduce pain in neonates. One such intervention is non-nutritive sucking (NNS). In the administration of NNS is still unknown how to control in reducing pain (Amiri Shadmehri et al., 2020).

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Researchers argue that babies who get *non-nutritive sucking* interventions will feel comfortable. Babies who have gained calm, will be easier to draw venous blood and will feel a little pain so that the baby does not feel a feeling of trauma when stabbing venous blood draw.

3. The effect of baby pain performed by action *non nutrive sukcing* (pacifier) during venous blood collection in the Neonatology room of Lavalette Hospital Malang with which it was not done.

The results showed that there was a marked effect on the NIPS scale of infants with pacifier intervention during venous blood collection in hospitals. Lavalette. The results corroborate other research that found pacifiers impact newborns receiving intravenous drugs in terms of how they respond to discomfort. The fact that the average score of the treatment group was greater than that of the control group indicates that their pain response was lower. (Pramesti, 2018).

The results of this study are in accordance with research conducted by Kristinawati (2013) entitled sucrose and non-nutritive feeding on pain response and duration of crying infants on invasive actions. Significant results were obtained, in the treatment group the pain response was lower and the duration of crying was shorter in the control group. The results obtained from Kristiawati's research were P value 0.635 ($p < 0.05$) when oral sucrose administration was effective in reducing pain response and crying duration in neonates undergoing invasive procedures. Researchers argue that babies who are given pacifiers are very influential on reducing discomfort in the baby, especially when light venous blood is taken so that the baby feels comfortable.

E. Conclusion

The results showed that babies who did not take action *non nutrive sukcing* (pacifier) during venous blood collection at the hospital. Lavalette Most have NIPS scale value mild pain. The results showed that the NIPS scale in infants with the intervention *non nutrive sukcing* (pacifier) during venous blood collection at the hospital. Lavalette has a NIPS value in the painless range. The results showed that there was an influence on the pain response of infants given pacifier intervention during venous blood collection in the hospital. Lavalette. It is expected that infant patients who will be drawn venous blood should be given non-nutrive suckey treatment. It is hoped that this research can provide input to the Hospital as a basis for taking venous blood collection in infants. It is hoped that through this research educational institutions can become a reference for additional research materials in the field of study on handling infant pain responses during venous blood collection or action *Invasive* another in infants. It is expected that the reporters will provide education to the baby's mother to give the baby a pacifier when venous blood collection will be carried out. This can be done by making posters in the room neonatologists Rs Lavalette. The results of this study can be used as basic data and also a comparison in future research on Effect of giving *non nutritive sucking* (pacifier) to the baby's pain response during a venous blood draw in the neonatology room. In addition, it is expected that further researchers can add research variables as a comparison.

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