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EFFECTIVENESS OF BREASTFEEDING ANALGESIA AND HUGGING THERAPY ON PAIN RESPONSE DURING INFANT IMMUNIZATION : QUASI EXPERIMENTAL

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ABSTRACT

Background: The infant immunization program aims to ensure every infant receives complete basic immunization. Immunization is one of the main sources of pain and suffering that causes anxiety and trauma. Breastfeeding techniques and hugging therapy, which can be used as an alternative method to reduce pain in infants during injections (immunization). Research Objective: To determine the effectiveness of breastfeeding analgesia and hugging therapy on pain responses during infant immunization. Research Method: Quasi-experimental two-group post-test only design. The population in this study were all infants who underwent MR immunization totaling 68 infants. The sampling technique was purposive sampling with a sample size of 50 respondents. Instruments observation sheets FLACC. The analysis test used the independent t-test.Research Results: Pain response during infant immunization in the group given breastfeeding analgesia averaged 4.9. Pain response during infant immunization in the group given the hugging technique averaged 2.0. There was a difference in pain response during infant immunization between those given breastfeeding analgesia and hugging therapy with p-value = 0.007. Conclusion: hugging therapy is more effective than breastfeeding analgesia and on pain response during infant immunization

Keywords: Breastfeeding analgesia; Hugging therapy; Pain response.

INTRODUCT

Immunization is a method that can be done to create/increase a person's immunity to disease (Proverawati & Andhini, 2018). Throughout the first year of life, babies will receive routine immunizations. For complete basic immunization, babies under 24 hours old are given Hepatitis B immunization (HB-0), 1 month old are given BCG and Polio 1, 2 months old are given DPT-HB-Hib 1 and Polio 2, 3 months old are given DPT-HB 2 and Polio 3, 4 months old are given DPT-HB-Hib3, Polio 4 and IPV or Polio injection, and 9 months old are given Measles or MR. The immunizations that cause pain because they are given through injection are the BCG vaccine through (Intracutaneous), the DPT-HB-Typhus vaccine is given through (Intramuscular), IPV (Intramuscular), and the Measles vaccine is given through (Subcutaneous)(RI, 2016)

The immunization program for infants aims for every infant to receive complete basic immunization. The success of an infant in receiving basic immunization is measured through the complete basic immunization indicator according to their age(Ranuh et al., 2016). However, in certain conditions, some infants do not receive complete basic immunizations. This group is called immunization dropout (DO). Infants who receive DPT/HB1 immunization at the beginning of immunization, but do not receive measles immunization, are called the DPT/HB1-Measles immunization dropout number. The dropout rate for DPT/HB1-Measles immunization has shown a downward trend from 2007 to 2016, assuming that more and more babies received complete basic immunization. However, in 2017, the DO rate increased to 4.1% due to the increasing number of

anti-vaccine groups refusing to immunize their children, so immunization coverage decreased for almost all antigens. The dropout rate for DPT/HB1-Measles immunization in 2018 was again suppressed to 2.5%. In 2019, the dropout rate increased again to 3.1%(Kemenkes, 2019).Complete basic immunization coverage for infants in Central Javain 2019 from all antigens has reached the target of the Central Java Provincial Health Office's Strategic Plan in 2019, which is 98.5 percent. Meanwhile, the achievement of the Central Java Provincial Health Profile2019 out of 69 districts/cities in 2019, 9 districts/cities had not reached the target of 94.5%, namely Banjarnegara, Rembang, Purbalingga, Pekalongan City, Purworejo, Wonogiri, Temanggung, Brebes and Tegal City(Prabowo et al., 2019).

Immunization is one of the main sources of pain and suffering that causes anxiety and trauma, not only in infants but also in families(Abdel Razek & AZ El-Dein, 2016). The way infants express their pain during immunization varies, one of which is showing distress behavior (such as crying, grimacing, frowning, and even crying that is difficult to silence(Wilson et al., 2017). Theexperience of pain felt by infants can affect heart rate, respiratory rate, blood pressure, and tissue oxygenation, which has the potential to cause these parameters to decrease or increase(Fauzi, n.d.).

The long-term effects of pain include increased somatic complaints without a clear cause, increased physiological and behavioral responses to pain, psychosocial problems, and rejection of human contact(Wilson et al., 2017). Uncontrolled pain experiences during theearly stages of life can have negative sideeffects on the development of the central nervous system. Pain associated with injections is a source of distress not only for infants but also for parents and the staff who perform the injection. If left untreated, the pain can lead to pre-procedural anxiety in the future(Wahyuni & Suryani, 2020).

Various types of non-pharmacological pain management have been widely applied in the nursing service setting. However, the use of non-pharmacological pain management in Indonesia is still not optimal. Oneeffort that needs to be made to reduce the impact of pain is to reduce or minimize pain during immunization. Several studies have been conducted on techniques to reduce pain felt by infants during immunization. Several interventions regarding non-pharmacological pain management methods. These interventions are breastfeeding, non-nutritional suction, music therapy, swaddling, positioning, auditory and multisensory stimulation, kangaroo method, maternal touch, and breastfeeding(Probowati et al., 2017).

Breastfeeding techniques are recommended for mothers to do before, during, and after immunization injections. Breastfeeding can calm the baby and can reduce the range of crying in the baby(Devi, 2018).The benefits of breast milk as an analgesic "descending nerve pathways have the activity of releasing endogenous opiates such as endorphins and dynorphins, a natural pain killer that comes from within the body. Breast milk contains a sweet solution, and the sweet taste affects the pain response. This happens because the sweet solution in breast milk can induce theendogenous opioid pathway which can cause the transmission of pain that is felt not to reach the brain to be perceived so that the sensation of pain will not be felt by the baby during the immunization injection(Permatasari & Ritanti, 2020).Previous research by Devi, P. S. Stated that there was an influence of breastfeeding techniques on the pain response in babies during immunization, as well as research by Permatasari, I., & Ritanti, R. stated that babies who were given breast milk by breastfeeding during immunization could reduce the risk of severe pain (scale 7-10) by 80%(Devi, 2018; Permatasari & Ritanti, 2020).

Other interventions can be through maternal touch-hugging therapy or parental holding, which can be used as an alternative method that can reduce pain in infants when injections (immunizations) are given. Hugging therapy is a combination of restraint and choosing a comfortable position when performing invasive procedures can also affect the child's comfort and minimize distress. The purpose of providing a comfortable position is to immobilize the child's extremities during the procedure, providing a sense of security and pleasure for the child through

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direct contact with the parent. Providing a hugging position creates a greater sense of control so that fewer people are needed to complete the procedure. The hugging position was developed to promote comfort for the child, sufficient immobilization, the child can be invited to cooperate and the child's self-control can be maintained so that the child becomes calm during the procedure(Wahyuni & Suryani, 2020).

Hugging can reduce the response to painful procedures and is a means for parents to divert attention and calm their babies. According to WHO recommendations, babies should receive special attention during vaccination(Yin et al., 2017).Previous research by Wahyuni, F., & Suryani, U. (2021) stated that the average decrease in pain scale before and after hugging therapy was 4.2 while music therapy was 2.7. It was concluded that hugging therapy was moreeffective in reducing pain scale in babies during measles immunization(Wahyuni & Suryani, 2020).Research by Wijayanti, F., & Oktarina, N. D. (2021)stated that there was a difference in pain in the hugging intervention group and the control after immunization (p-value: 0.0001 <0.005)(Wijayanti & Oktarina, 2021).

The results of the preliminary survey from Plumutan Village, Bancak District obtained data on the number of babies in December as many as 38 babies. Interviews conducted by researchers with mothers who immunized their children felt sorry for their children because they were fussy when they felt the pain of immunization. So far, there has been no action to overcome immunization pain, during immunization, what is usually done is to divert the baby's attention with toys and hold the baby after the injection immunization is carried out. Research objectives to determine the effectiveness of breastfeeding analgesia and hugging therapy on pain responses during infant immunization

METHOD

The research design was a quasi-experimental two-group post-test-only design. Group one with breastfeeding analgesia, group two with hugging therapy. In this study, there are independent variables, namely breastfeeding analgesia and hugging therapy, as well as dependent variables, namely pain responses during infant immunization. The sampling technique was purposive sampling with a sample size of 50 respondents who underwent MR immunization. The instruments were Standard Operating Procedures breastfeeding analgesia and hugging therapy and observation sheets FLACC (Face, Leg, Activity, Cry, Consolability). Implementation of breastfeeding analgesia involves the baby, who will be given immunization, sitting on the mother's lap. The baby is then given breast milk immediately after the immunization injection for 2 minutes. Implementation of hugging therapy, the baby who will be given immunization sits on the mother's lap, then the hugging therapy is carried out by positioning the child's body facing the mother, where the child's chest meets the mother's chest, hugged once for 2 minutes immediately after the immunization. The analysis test used an independent t-test. This research has passed ethical standards as evidenced by a letter of passing ethical tests Number: 49/KEP/UNKAHA/SLE/VIII/2022

RESULTS

1. Pain response during infant immunization in the group given breastfeeding analgesia.

Table 1 Pain response during infant immunization in the group given breastfeeding analgesia (n=25)

Pain Response	Mean	SD	Min	Max
Post	4.9	2.28	1	10

Based on the table above, the pain response during infant immunization in the group given breastfeeding analgesia averaged 4.9, standard deviation 2.28 with a minimum value of 1 and a maximum of 10.

2. Pain response during infant immunization in the group given the hugging technique.

Table 2 Pain response during infant immunization in the group given the hugging technique (n=25)

Pain Response	Mean	SD	Min	Max
Post	2	1.94	0	5

Based on the table above, the pain response during infant immunization in the group given the hugging technique averaged 2.0, standard deviation of 1.94 with a minimum value of 0 and a maximum of 5.

3. Differences in pain response during infant immunization between breastfeeding analgesia and hugging technique

Table 3 Differences in pain response during infant immunization between breastfeeding analgesia and hugging technique

Pain Response	Mean	SD	P-Value
Breastfeeding analgesia	4.9	2.28	0.007
hugging technique	2	1.94	
Difference	2.9	0.34	

Based on the table above, the mean difference is 2.9 and the standard deviation difference is 0.34. The results show that the independent t-test obtained a p-value = 0.007 so it is concluded that Ha is accepted, namely, there is a difference in pain response during infant immunization between breastfeeding analgesia and hugging techniquein Plumutan Village, Bancak District. Hugging techniqueis moreeffective than breastfeeding analgesia and on pain response during infant immunization in Plumutan Village, Bancak District.

DISCUSSION

The results of the study showed a difference in pain response during immunization between babies who were given breastfeeding analgesia and hugging techniquein Plumutan Village, Bancak District. The results obtained showed that hugging techniquewas moreeffective in reducing immunization pain, as seen from the difference between breastfeeding analgesia and cuddling therapy, where the average pain was lower with hugging techniquewith an average value of 2.0, compared to breastfeeding analgesia with an average value of 4.9.

The hugging technique is moreeffective in reducing pain during infant immunization because it is a form of restraint used to assist in theimplementation of procedures in less cooperative children, to prohibit the child from interfering with the procedure and equipment(Bray et al., 2015).Non-pharmacological strategies for pain management, such as swaddling combined with positioning, holding the infant (holding the infant in a flexed position with the arms close to the body) with or without parental assistance, and non-nutritive sucking, have shown variableeffectiveness in reducing pain. There is a theory that the presence of parents and loved ones is very important for children who are experiencing pain(Potter & Perry, 2016).

Breastfeeding analgesia techniques can also reduce pain even though hugging therapy in this study is moreeffective, this is because breast milk contains a sweet solution, namely lactose, which is milk sugar, the sweet taste has an effect on the pain response. This happens because the sweet solution in breast milk, namely lactose, can induceendogenous opioid pathways that can cause the transmission of pain that is felt not to reach the brain to be perceived so that the sensation of pain will not be felt by the baby(Permatasari & Ritanti, 2020).

According to researchers, babies who are breastfed when given immunization feel less pain than babies who are not breastfed because when breastfeeding, the baby is in the arms of his mother, he will feel calm, safe, and can provide comfortable contact to the baby. The hug given will provide skin contact between the mother and her baby, at that time the body will release the hormone oxytocin (a hormone associated with feelings of peace and love) so that it will affect the baby's psychology. This feeling reminds the baby of the comfort of being in the mother's womb, so the baby enjoys breastfeeding.

According to research by Febriani & Ritanti

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(2018), it was stated that giving breast milk during measles immunization injection is effective in reducing the pain response of infants even though they are more than 6 months old. Breast milk can be used as a non-pharmacological method to reduce the pain response of infants and is cheaper and more practical compared to pharmacological methods(Febriani et al., 2018).

This study is in line with the study conducted by Wahyuni, F., & Suryani, U. (2020) that hugging techniqueis moreeffective in reducing the pain scale in infants during measles immunization(Wahyuni & Suryani, 2020). Hugging techniqueis carried out by positioning the child's body facing the mother, where the child's chest meets the mother's chest. Hugging techniqueis different from other physical activity restrictions. The difference lies in the level of strength and involvement of the child. Holding the baby during immunization in a position facing the mother is moreeffective in relieving vaccination pain than holding it in an upright position. Thus, holding the mother in a cuddling position can help reduce vaccination pain in infants(Yin et al., 2017).

Researchers provide a therapeutic position of hugging that can provide a sense of comfort, namely the position of hugging in a family hug which is done by sitting the baby on the mother's lap in a facing position, the child's chest resting on the mother's chest, the position of the legs straddling the mother's lap and arms hugging the baby's body. Pain is a condition in the form of an unpleasant feeling that is very subjective. Hugging therapy cannot be separated from providing a comfortable position for the baby. Providing this position is a technique that can help minimize the impact of distress on the baby when various invasive actions are carried out, one of which is immunization(Wahyuni & Suryani, 2020; Yin et al., 2017).

The hugging therapy in this study is also by the comfort theory of Kolcaba, which explains that a need for a comfort experience resulting from a stressful healthcare situation, which cannot be met by the recipient of traditional support systems that remind physical comfort physiologically, psychologically, or environmentally can involve the patient's family/behavior towards well-being. The need to get comfort is classified into several contexts concerning physical comfort, the need for self-confidence comfort with motivation, environmental reassurance, and continuous comfort in carrying out nursing interventions will affect the health that will be desired(Wahyuni & Suryani, 2020; Wijayanti & Oktarina, 2021; Yin et al., 2017).

Researchers assume that hugs greatly affect the psychology of babies, which creates a sense of calm and security for babies and is also said to be a process where the results of a continuous interaction between babies and parents who are mutually loving provide both emotional fulfillment and mutual need. Thus, the bond between parents and babies makes mothers always want to hug their babies. Touch, hugs, eye contact, skin-to-skin contact which is often an expression of other extraordinary affection for parents to help babies gain comfort and calm when babies lose their response.

CONCLUSION

Hugging techniqueis moreeffective than breastfeeding analgesia and on pain response during infant immunization in Plumutan Village, Bancak District. The suggestion given is that hugging therapy can be used as an alternative therapy for post-immunization pain in babies to reduce trauma in babies.

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