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A Quasi-Experimental Study to Assess the Effect of Swaddling on the Management of Pain During Heel Prick among Neonates Admitted in the Neonatal Intensive Care Unit at NMCH, Nellore

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Abstract
Swaddling is a simple and quick nonpharmacologic method that can be utilized by nurses to decrease heel stick pain in neonates. The aim of this study is to evaluate the impact of swaddling on the management of pain during heel prick among neonates admitted to the neonatal intensive care unit at NMCH, Nellore. The data has been collected by the primary quantitative data collection method in this research. It has been found that neonates face moderate to severe pain at the time of heel prick. It can be concluded that there are noticeable constraints within the pain score at the time of heel prick along with swaddling.

Keywords: Swaddling, Neonates, Heel Prick, Pain Management

1. Introduction

Neonates experience more pain than others due to the existence of the central and peripheral structural significance for nociception. Preterm neonates are entrusted to intensive care connected with a multiple of agonizing procedures. The maximum number of common pain management carry out at the time of infancy are heel prick, regular injection, vaccination without any pain management, and vein puncture. Pain management of neonates is a complex task to accomplishin a "***NICU or Neonatal Intensive Care Unit"***in NMCH, located in Nellore. Some factors such as physical environment and medical procedures serve as tensely imparting components for neonates within NICU. Neonates encounter pain throughout their initial stages of life that caused adverse impacts for long time such as apnea, respiratory distress, desaturation, hypotension, and also negative impacts on the "***central nervous system"***. Management of pain within preterm is also categorized as non-pharmacological or pharmacological. The agents of opiates or narcotics pharmacological are utilized for controlling severe pain. There aresome risks related to the use of those narcotics as sedation, seizures, and respiratory issues. Methods of non-pharmacology such as swaddling, music, non-nutritive sucking, facilitated tucking, kangaroo care, and maternal touch assists in decreasing the pain.

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2. Literature Review

The impact of swaddling on the management of pain during heel prick

Swaddling is the procedure of snugly muffling a baby within a blanket for security and warmth. It keeps the newborns comfortable and helps babies from being annoyed by their own startle reflexes. A neonate or newborn is a baby who is under the age of 28 days, at the initial stages of life; babies are at a higher possibility of dying (Bucsea and Riddell, 2019). It is important that proper care should be provided tothem at this period due to this. This helps to enhance the survival rate of the child and attributes a foundation for a fresh life. Every neonate responded uniquely to pain, nurses have the authority to decrease the pain of these babies in the hospital setting (Talebi*et al.* 2022). Both heel warming and swaddling lessen the neonate's pain responses at the time of heel prick. Heel warming consequences in a decreased pain response for neonates compare to swaddling related for pain recovery. Swaddling assist neonates sleep longer, sustains face scratching, and also decreases anxiety. There are still some risks included with it such as decreased arousal, hip dysplasia, and overheating.

The techniques of non-pharmacology for pain management among neonates

A significant development in analyzing the clinical correlates of neonates has consequences in higher attention to pain management at the time of "***neonatal intensive care"***. There are some "***nonpharmacological therapies"*** that have been explored such as nonnutritive sucking without or with the use of sucrose, facilitated tucking or swaddling, and a stipulation of multi-sensorial (Fitri*et al.* 2021). Other than this the efficiency of these procedures is quite evident, they could not give analgesic in severe or moderate pain to the neonate. The model of pain management which is the approach of 5P denotes physical, psychological, pharmacological, process, and procedural pain management assessments that are significant for directing the pain control efforts for neonates.

3. Methodology

Research methodology gives an overall description of the procedures adopted by the researchers within the study. In this study, the primary quantitative data collection method has been used to collect the study data. The main reason to use this data collection method is to analyze the phenomenon dimension of the research or to create a hypothesis (Sileyew, 2019). This study has used the descriptive research design as it aims to systematically collect data to analyze a situation, population, or phenomenon. Moreover, it assists to answer the questions related to the issues of the research. This research has used the deductive research approach; here researchers begin the research with a generalization, theory, and hypothesis through data collection as well as observations (Casula*et al.* 2021). In this research, a total of 31 participants have been chosen from the intensive care unit at NMCH, Nellore to gather the data relating to the study, and the survey method has been followed. At the time of collecting research data, no participants were forced to answer the research questions. The data of this study has been collected based on the responses of the participants and no other external sources have been used here.

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4. Findings & Discussions

From the above study, it has been found that among neonates the pain is quite unavoidable ad unexplainable at the time of invasive procedures. The responsible nurse must know the newborn's feelings at this time.

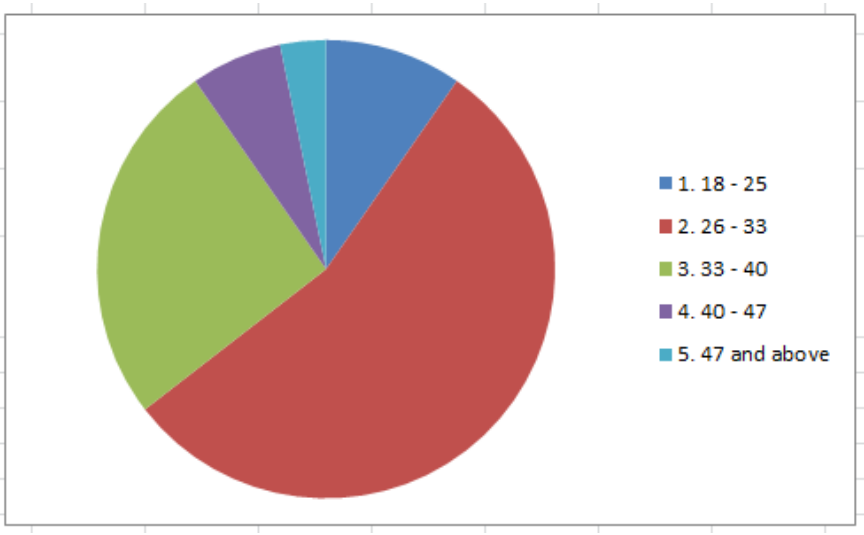

Figure1: Participant's age (Source: MS Excel)

The age of the participants in this study has been between 18 years to 47 years and above. A maximum number of participants are aged between 26 years to 33 years.

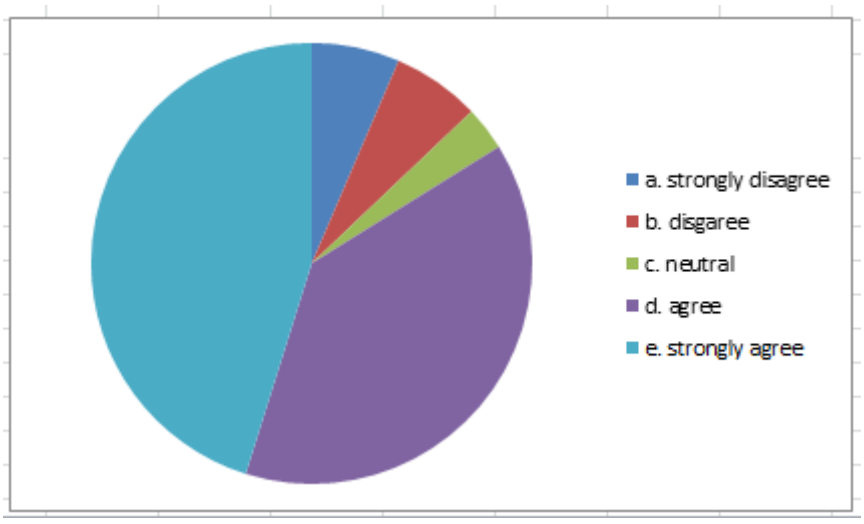

Figure 2: Swaddling procedures help in pain management during heel prick among neonates (Source: MS Excel)

The above data set stated whether the swaddling procedures assist in pain control at the time of heel prick in neonates. The majority number of the respondents strongly agreed with the matter.

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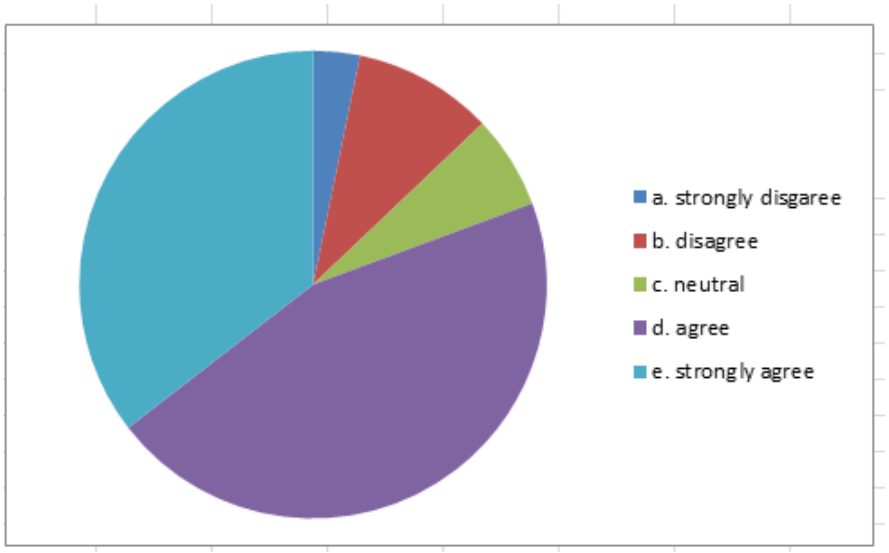

Figure 3: Pain management in NICU is quite a challenging task (Source: MS Excel)

In the above data figure, the respondents have been asked if pain management within NICU is a challenging and tough task to accomplish. The majority of the participants showed their approval of the fact.

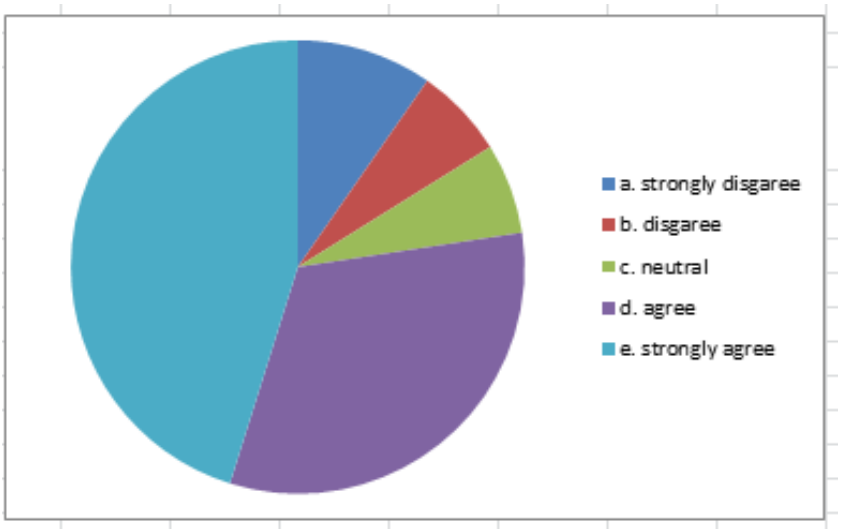

Figure 4: Neonates are at higher risk of dying when they lack proper nursing care in hospital settings (Source: MS Excel)

The above figure represents the maximum number of respondents who strongly agreed with the fact that neonates are at a higher chance of dying at the time they lack proper nursing care.

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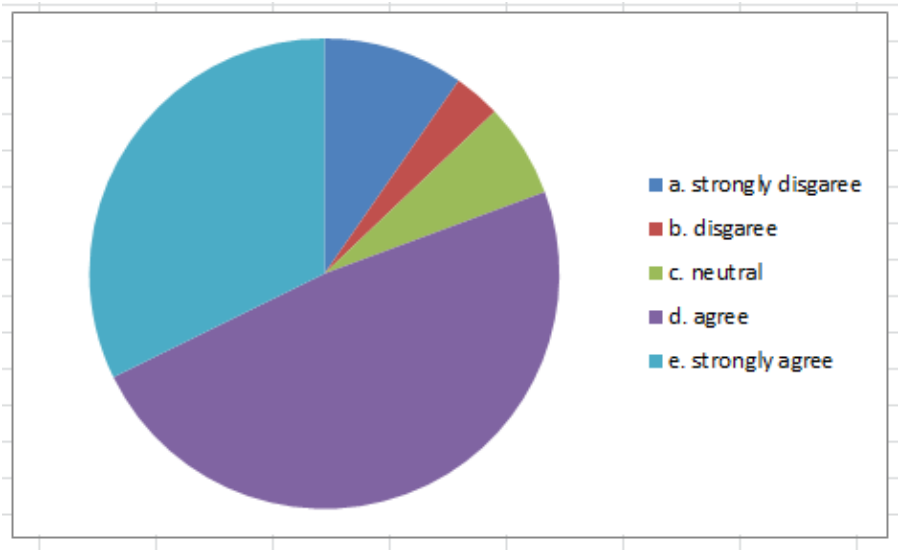

Figure 5: Neonates encounter pain throughout their initial stages of life has long time bad impacts on their health (Source: MS Excel)

The above data set presents that the maximum number of participants strongly agreed with the statement that neonates who experience severe pain throughout their beginning stage of life have long-lasting adverse effects on their health.

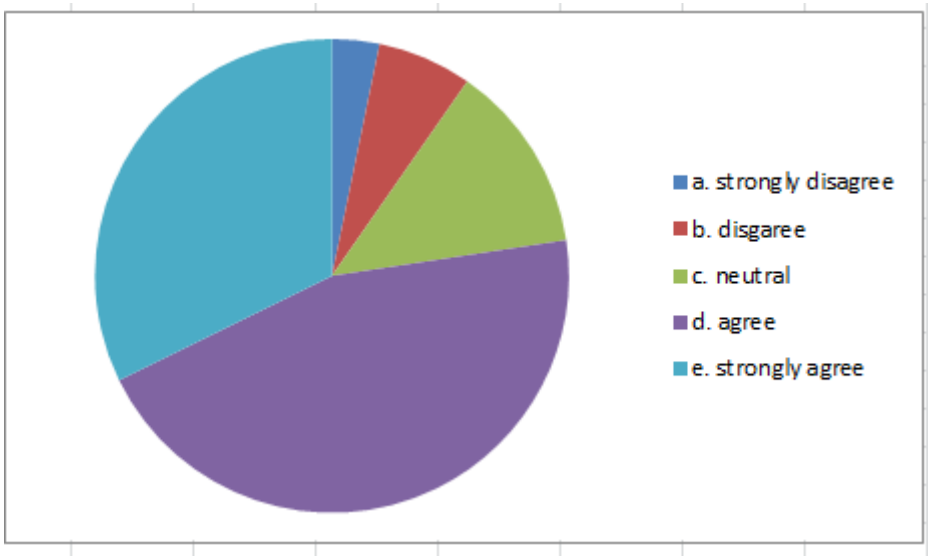

Figure 6: There is a risk related to the opiates pharmacological agents uses to decrease pain (Source: MS Excel)

The above data figure represents that the majority of the respondents agreed with the fact that there is risk linked to the use of opiated pharmacological agents to reduce pain in neonates.

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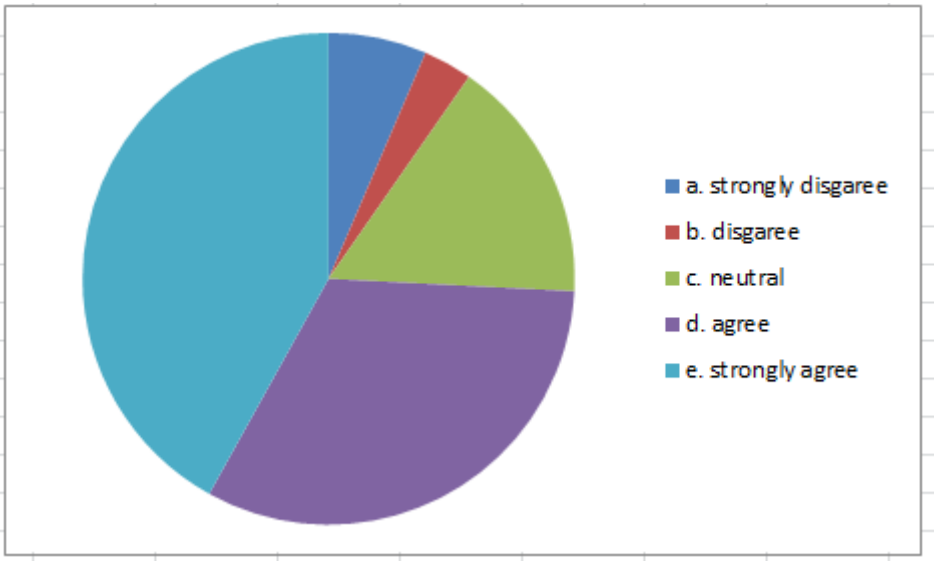

Figure 7: Both heel warming and swaddling lessen the neonate's pains at the time of heel prick (Source: MS Excel)

The above figure stated that a maximum number of the participants strongly agreed with the statement that both heel warming and swaddling decrease the newborn's pain at the time of heel prick.

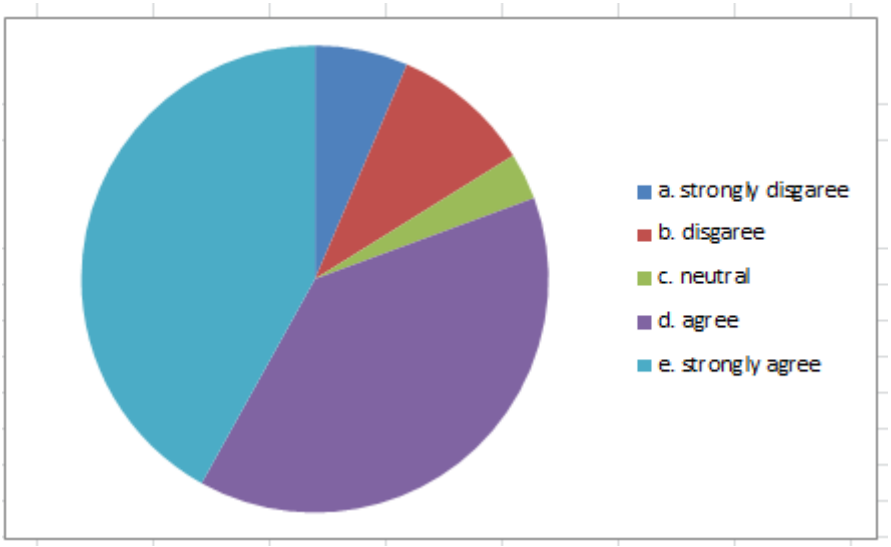

Figure 8: Swaddling helps neonates from being annoyed by their own startle reflexes (Source: MS Excel)

From the above data set, it can be stated that the majority of the participants strongly agreed with the matter that swaddling truly helps neonates from being annoyed by their startle reflexes.

5. Conclusion

From the above study, it can be concluded that swaddling for pain management of neonates is effective, low-cost, convenient, and practical. Heel pricks or routine procedures are the most

common painful medical methods at the time of the neonatal stage. Swaddling is a procedure that helps to keep newborns relaxed by decreasing their pain at the time of heel prick.

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Appendices

Q.1. What is your age?

a. 18 - 25
b. 26 - 33
c. 33 - 40
d. 40 - 47
e. 47 and above

Q.2. Swaddling procedures help in pain management during heel prick among neonates, do you agree?

a. Strongly disagree
b. Disagree
c. Neutral
d. Agree
e. Strongly agree

Q.3. Pain management in NICU is quite a challenging task, do you agree?

a. Strongly disagree
b. Disagree
c. Neutral
d. Agree
e. Strongly agree

Q.4. Neonates are at higher risk of dying when they lack proper nursing care in hospital settings, do you agree?

a. Strongly disagree
b. Disagree
c. Neutral
d. Agree
e. Strongly agree

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Q.5. Neonates encounter pain throughout their initial stages of life has long time bad impacts on their health, do you agree?

a. Strongly disagree
b. Disagree
c. Neutral
d. Agree
e. Strongly agree

Q.6. There is a risk related to the opiates pharmacological agents uses to decrease pain, do you agree?

a. Strongly disagree
b. Disagree
c. Neutral
d. Agree
e. Strongly agree

Q.7. Both heel warming and swaddling lessen the neonate's pains at the time of heel prick, do you agree?

a. Strongly disagree
b. Disagree
c. Neutral
d. Agree
e. Strongly agree

Q.8. Swaddling helps neonates from being annoyed by their own startle reflexes, do you agree?

a. Strongly disagree
b. Disagree
c. Neutral
d. Agree
e. Strongly agree