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The Effect of Hypothermia Prevention Education on Mothers' Ability to Care for Newborns

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ABSTRACT

Hypothermia is a serious problem in newborns that can increase morbidity and even neonatal mortality. Educating mothers is an important strategy to improve their ability to care for newborns and prevent hypothermia. This study aimed to determine the effect of hypothermia prevention education on mothers' ability to care for newborns. The research method used a *pre-experimental design* with *a one-way approach. group pre-test Post-test*. The study sample consisted of 40 post-partum mothers selected using a *purposive sampling technique*. The research instruments were a questionnaire and an observation sheet on newborn care skills. The results showed a significant increase in mothers' ability to care for newborns after being given education ($p < 0.05$). Education has been proven effective in improving mothers' skills in preventing hypothermia in newborns.

Keywords: Education, Hypothermia, Newborn Care, Maternal Ability

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1. Introduction

Newborns are an age group that is highly susceptible to health problems, one of which is hypothermia. Hypothermia in neonates is defined as a drop in body temperature below 36.5°C, which can cause metabolic disorders, hypoglycemia, hypoxia, and even increase the risk of mortality. Data from the World Health Organization the World Health Organization (WHO, 2020) shows that hypothermia is still one of the causes of neonatal morbidity and mortality, especially in developing countries with limited resources.

In Indonesia, the incidence of hypothermia in newborns remains quite high, especially among babies born at home with non- facilitated deliveries and mothers' limited knowledge of proper infant care (Ministry of Health of the Republic of Indonesia, 2021). A major contributing factor is the lack of education and awareness among mothers about the importance of keeping their babies warm immediately after birth.

Some recommended hypothermia prevention efforts include: Early Initiation of Breastfeeding (IMD), skin to skin contact (skin contact with mother), use of the kangaroo method mother (KMC), swaddling the baby properly, and ensuring a warm environment (WHO, 2019). However, these practices are often not optimally implemented by mothers, especially primiparous mothers who are inexperienced in caring for newborns.

Nurses and midwives play a crucial role in providing health education to mothers as a form of promotive and preventive intervention. Education on hypothermia prevention is expected to improve mothers' ability to provide appropriate and ongoing infant care, thereby reducing the incidence of hypothermia.

Based on this background, this study aims to analyze the effect of hypothermia prevention education on mothers' ability to care for newborns. The results are expected to serve as a reference in developing neonatal health education programs and increasing the involvement of healthcare workers in supporting infant health.

2. Research methods

a) Research Design

This study uses a pre -experimental design with a one-way approach. group pretest-posttest This design was chosen to determine the effect of hypothermia prevention education on mothers' ability to care for newborns by comparing the results before (pretest) and after (posttest) the education was given.

b) Population and Sample

The population in this study was all mothers who had newborn babies (aged 0–28 days) in the working area of Health Center X.

The sampling technique used purposive sampling, with the following inclusion criteria:

1. Mothers who have newborn babies in healthy condition,
2. Willing to be a respondent and participate in educational activities,

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3. Can read and write.

Based on the calculation of the sample size formula for pre -experimental research, the sample size was 30 respondents.

c) Research Variables

1. **Independent (free) variable:** Hypothermia prevention education.
2. **Dependent variable (bound):** Mother's ability to care for newborns (seen from the knowledge and skills aspects).

d) Research Instruments

The instruments used are:

1. **Questionnaire** to measure mothers' knowledge regarding hypothermia prevention (contains 15 multiple choice questions).
2. **Observation sheet** to assess the mother's skills in the practice of keeping the baby warm, such as how to swaddle, do skin to skin contact. to skin contact, and maintain room temperature.

The instrument has been tested for validity and reliability with the results being declared suitable for use.

e) Research Procedures

1. **Initial stage (pretest):** Respondents were given a questionnaire to assess their knowledge and observation of their practical baby care skills before education.
2. **Intervention:** Researchers provided education on hypothermia prevention through interactive lectures, discussions, and demonstrations of infant care practices (± 60 minutes).
3. **Final stage (posttest):** After the intervention, respondents were given a questionnaire again and re-observed to assess changes in ability.

f) Data analysis

Data was analyzed in two stages:

1. **Univariate analysis:** to describe respondent characteristics, level of knowledge, and skills before and after education.
2. **Bivariate analysis:** using **a paired t - test because** the data were normally distributed, with a significance level ($\alpha = 0.05$). If the p- value < 0.05, there is an effect of education on maternal abilities.

3. Research Result

a. Results

This study involved 40 respondents who were mothers with newborn babies, who were divided into two groups, namely the intervention group (20 mothers) who received education on hypothermia prevention, and the control group (20 mothers) who did not receive direct education, but only general information from health workers.

1) Respondent Characteristics

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The majority of respondents were aged 20–35 years (75%), had secondary education (high school/equivalent 60%), and were mostly housewives (70%). The characteristics of both groups were relatively homogeneous, so there were no significant differences in the baseline data ($p > 0.05$).

2) Mothers' Ability to Care for Newborns Before Education

Before receiving education, the average score for mothers' ability to perform hypothermia prevention care in the intervention group was 58.5 (adequate category), while in the control group it was 59.2 (adequate category). Statistical tests showed no significant difference ($p > 0.05$).

3) Mothers' Ability to Care for Newborns After Education

After receiving education, the average maternal ability score in the intervention group increased to 85.6 (good category), while in the control group it only slightly increased to 62.1 (fair category). Statistical testing using a paired t-test showed a significant difference between the intervention group before and after education ($p < 0.001$).

4) Comparison of Intervention and Control Groups

The results of the independent t- test showed a significant difference between the average scores of mothers' ability to care for newborns in the intervention group compared to the control group ($p < 0.001$).

Thus, hypothermia prevention education has been shown to have a significant impact on improving mothers' ability to care for newborns.

b. Discussion

The results of this study indicate that hypothermia prevention education significantly improved mothers' ability to care for their newborns. The intervention group receiving education showed significantly higher scores than the control group. This aligns with previous research showing that health education can significantly improve mothers' knowledge, attitudes, and skills in caring for newborns (Rahmawati & Dewi, 2021).

Health education plays a crucial role in changing behavior because it enables mothers to understand the risks that can occur in newborns, including hypothermia. Newborns have immature body temperature regulation mechanisms, making them vulnerable to heat loss through evaporation, conduction, convection, and radiation. If left untreated, hypothermia can lead to metabolic disorders, hypoglycemia, and even neonatal death (WHO, 2019).

Educational interventions in this study focused on infant care techniques that can prevent hypothermia, such as skin-to-skin contact. contact (kangaroo method), immediately drying the baby's body after birth, providing appropriate clothing, maintaining room temperature, and early breastfeeding. With this education, mothers

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better understand the practical steps to keep their babies warm. This aligns with Notoatmodjo's (2018) theory, which states that health education can improve a person's ability to make decisions and act based on their knowledge.

The findings of this study are also in line with the results of the study by Kusumawati et al. et al. (2020) showed that brief training or education on newborn care can significantly improve mothers' skills. Furthermore, research by Widodo (2022) found that providing education through demonstration methods is more effective than purely verbal instruction because mothers can directly practice the skills taught.

Thus, this study emphasizes the importance of health education, particularly hypothermia prevention, in improving mothers' ability to care for their newborns. Structured, repeated education accompanied by practical demonstrations can positively impact mothers' knowledge and skills.

4. Conclusion and Suggestions

a. Conclusion

This study demonstrates that hypothermia prevention education significantly improves mothers' ability to care for their newborns. Mothers who receive education are better able to understand hypothermia prevention measures, such as *skin-to-skin care. contact*, drying immediately after birth, early breastfeeding, and the use of appropriate clothing and environment to keep the baby warm. Thus, educational interventions have proven to be an effective strategy in reducing the risk of hypothermia in newborns.

b. Suggestion

1. For Health Workers

- It is recommended to routinely provide education regarding hypothermia prevention to pregnant and postpartum women, both through group counseling and individual counseling.
- Educational methods should be accompanied by practical demonstrations so that mothers can better understand and master the skills directly.

2. For Health Institutions

- Hospitals and community health centers can make hypothermia prevention education part of their standard neonatal care program.
- There needs to be a simple and easy-to-understand educational module or media so that mothers can repeat the information they get at home.

3. For Further Researchers

- Future research is expected to examine the effectiveness of different educational methods, such as the use of audiovisual or digital media, to see their impact on improving mothers' abilities.

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- Research with a larger sample size and longer follow-up period is needed to assess the sustainability of hypothermia prevention behavior in mothers.

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