International Journal of Research In Paediatric Nursing

E-ISSN: 2664-1305
P-ISSN: 2664-1291
www.paediatricnursing.net
IJRPN 2023; 5(1): 16-18
Received: 08-11-2022
Accepted: 16-12-2022

Vandana Kushwaha
Research Scholar, Mansarovar Global University, Bhopal, Madhya Pradesh, India

Dr. Ratna Chhaya Singh
Principal, Mansarovar Nursing College, Bhopal, Madhya Pradesh, India

Corresponding Author:
Vandana Kushwaha
Research Scholar, Mansarovar Global University, Bhopal, Madhya Pradesh, India

A study to assess the effectiveness of a care guide on thermoregulation of low-birth-weight babies in terms of knowledge among student nurses selected hospital Rewa

Vandana Kushwaha and Dr. Ratna Chhaya Singh

DOI: https://doi.org/10.33545/26641291.2023.v5.i1a.112

Abstract
Aim: To assess the effectiveness of a care guide on thermoregulation of low-birth-weight babies in terms of knowledge among student nurses of Gandhi Memorial hospital, Rewa Settings and Design: Quantitative approach with pre-experimental research design was selected and conducted in Gandhi Memorial hospital, Rewa Sample and Sampling: Convenient sampling technique is used for sampling and selecting 46 nursing students. Results: The mean post-test knowledge scores of the student nurses were significantly higher than their mean pre-test knowledge scores as evident by a structured knowledge questionnaire at 0.05 level of significance. Conclusion: Thus, the findings conclude that the care guide was effective in improving the knowledge of the student nurses regarding thermoregulation of the low-birth-weight babies.

Keywords: Care guide, thermoregulation, low-birth-weight babies

Introduction

Newborn's health is the key to child survival and some newborns require additional attention and care to minimize their health risks. According to WHO (World Health Organization), "Low Birth Weight is defined as the birth weight less than 2,500 grams irrespective of the gestational age". In India, according to the recent calculations, IMR in 2017 was 32/1000 live births and neonatal mortality rate (NMR) was 29 per 1000 live births. The incidence of LBW babies varies between 25–30% and all the infants who died before they completed 29 days post birth, 48% suffered from LBW and premature births. Also, thermoregulation is a critical component of neonatal nursing care, particularly with regard to preterm infants. The fall in body temperature that occurs in babies soon after birth is influenced by the babies' weight and its environmental condition. There is evidence of a dose effect on mortality in babies which suggests an increased risk of at least 28% for each 1°C below 36.5°C body temperature at admission. The need for experienced and qualified nurses, caring for high-risk newborns in neonatal intensive care unit (NICU) has been widely recognized by professional organizations. The issue of nursing education and training in the context of providing high quality services for high-risk newborns is a paramount concern. Therefore, an understanding of transitional events and the physiological adaptation that babies must make is essential to help the nurse provide an appropriate environment and help infants maintain thermal stability. Even though researchers have studied ways to reduce heat loss in low-birth-weight babies, still hypothermia remains a widespread problem in after birth. This might occur because of inadequate knowledge among nursing professionals while handling a child immediately at birth and during first week of life. The student nurses should possess knowledge regarding neonatal hypothermia, its causes, treatment, preventive aspects – so that it can be prevented, and also the neonatal morbidity and mortality. So, we felt the need to assess the knowledge of student nurses regarding thermoregulation of neonate, and also to conduct a planned teaching program for them that might help them to improve their knowledge in that regard.

Methods and Materials

Participants: The sample for the present study comprised 46 student nurses of B.Sc. Nursing 3rd year in research group studying in Gandhi Memorial hospital, Rewa. The subjects were selected using convenience non-probability sampling technique.

Material

The tool, Structured Questionnaire to Assess the Knowledge Regarding Thermoregulation of the Low-Birth-Weight Babies, was prepared by reviewing various literatures. A detailed discussion was held with seven experts from the field of child health nursing and obstetrics and gynecology nursing on the objectives of the study to draft the tool for the study to collect information from the subjects.

Section 1: Demographic

Data It comprised of items such as age, gender, religion, area of residence, source of information.

Section 2: Questionnaire

It enclosed questions based on low birth babies and mechanism of thermoregulation. Ethical Consideration Formal administrative approval to conduct the study was obtained.

Procedure

Forty-six nursing students studying in B.Sc. Nursing 3rd year were selected who were the students of Government institute of Nursing, Rewa, M.P. They were selected through convenient sampling technique. Informed consent was taken from the students of this batch for participation in the study. Each student nurse was given an individual code number. The investigator explained the nature and purpose of the study to the students. The sociodemographic profile of the student nurses was filled by them only. Data was collected through a structured questionnaire involving 40 questions among 46 students before and after the administration of care guide among the student nurses.

Statistical Methods

The descriptive and inferential statistics were used for analysis. Calculations were done manually with the calculator. Outcomes were presented as mean and standard deviation. Significant levels were set to be P value less than 0.05.

Results

The data presented in Table 1 shows the mean, mean difference, difference of standard deviation, standard error and 't' value of pretest and post-test knowledge scores of the student nurses on thermoregulation of the low-birth-weight babies and Figure 1 shows the bar graph depicting the difference among pre-test knowledge and post-test knowledge mean of the student nurses on thermoregulation of the low-birth-weight babies at the 0.05 level of significance.

Table 1: Mean, Mean Difference, Difference of Standard Deviation, Standard Error of Mean Difference and 'T' Value of Pre-test and Post-test Knowledge Scores of the Student Nurses on Thermoregulation of the Low-Birth-Weight Babies (N = 46).

Knowledge test	Mean	Mean	SD_D	SE_{MD}	't' value
Pre-test	19.69	13.17	0.74	0.71	18.5
Post-test	32.86				

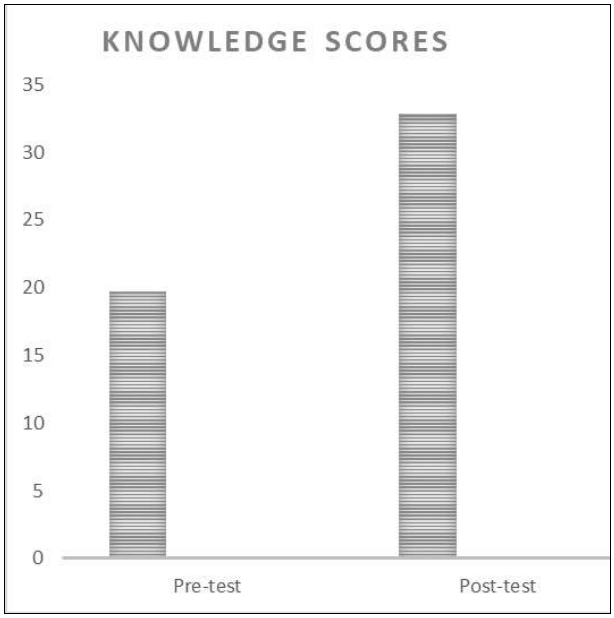

Fig 1: Pre-test Knowledge and Post-test Knowledge Mean of the Student Nurses on Thermoregulation of the Low-Birth-Weight Babies

Conclusion

The following conclusions were drawn from the findings: The selected group of the student nurses of B.Sc. Nursing 3rd year had deficiency in knowledge on thermoregulation of low birth.

Weight babies in all the content areas in varying degrees and they have gained a significant amount of knowledge after administration of a care guide on thermoregulation of the low-birth-weight babies. The findings indicate that the care guide on thermoregulation of the low-birth-weight babies was effective in terms of improvement of knowledge of the student nurses of B.Sc. Nursing 3rd year.

Limitations

1. No attempt was made to measure the acceptability and utility of the care guide.
2. No attempt was made to measure the retention of knowledge gained due to time constraints.

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