



Study to Develop an Instructional Module to Enhance Clinical Competence in Neonatal Thermoregulation among Nurses Working in Labour Room and Operation Theatre of SUT Hospital, Pattom

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ABSTRACT

INTRODUCTION

Newborn period is a crucial period as far as a child's growth and development is concerned. During this period the newborn has to undergo certain physical and physiological adaptation to make them enable to live outside the womb. Thermoregulation is one of the important aspect of these physiological adaptations which is poorly developed in the neonate. It is the responsibility of the care givers to facilitate thermoregulation immediately after the birth.

METHOD

In the present study, a quasi - experimental approach with one group pre test – post test design was used. Study was conducted among 30 staff nurses working in labour room and operation theatre of SUT Hospital, Pattom. Pre test was done to assess knowledge by administering a structured questionnaire. The skill in doing some selected practices related with neonatal thermoregulation was assessed by observing the practice of staff with the help of an observation check list. An instructional module was administered after pre test with content related to neonatal thermoregulation. Post test was done with the help of the same tool after two weeks.

RESULTS

The present study was intended to assess & improve the knowledge and practice of staff nurses regarding neonatal thermoregulation with the help of an instructional module. The mean score related to awareness regarding neonatal thermoregulation has improved from 13.67 to 21.30. The increase in mean score after the administration of module was found to be highly significant ($t = 11.728$, $df = 29$, $P \text{ value} = 0.000$). The mean score related to practice regarding neonatal thermoregulation among staff nurses has increased from 7.43 to 9.90. The increase in mean score after the administration of module was found to be highly significant ($t = 9.409$, $df = 29$, $P \text{ value} = 0.000$).

SUMMARY

The findings of the study support that the instructional module significantly improves the knowledge and practice regarding neonatal thermoregulation among staff nurses. Hence it can be concluded that the instructional module was highly effective in increasing the knowledge and practice regarding neonatal thermoregulation among staff nurses.

KEYWORDS

Neonatal thermoregulation, Clinical competence, Experimental study

INTRODUCTION

“A Newborn is like the beginning of all things – wonder, hope, a dream of possibilities”

Eda J Leshan

Thermoregulation plays a unique and crucial role in the nurturing and

development of neonates.

Thermoregulation is the ability to balance between heat production & heat loss within normal range. It is one of the most important physiological functions that is closely associated with the neonate's survival. High variation in maintenance of



body temperature leads to severe health issues that may cause neonatal mortality & morbidity. Neonatal thermoregulation is highly significant area in clinical practice especially within neonatology.

NEED FOR THE STUDY

Neonates are more vulnerable to any variations in their body temperature regulation due to inadequate development of brown fat. Intrauterine temperature is 0.3 °C – 0.5 °C higher than external environment. Human beings can adjust their body temperature according to the environmental temperature. The heat thus produced in the body is conserved mainly by the fat under the skin which acts as a blanket. But neonates have less fat under the skin and their thermoregulatory mechanism is immature. So they cannot prevent heat loss. Nurses play a vital role in maintaining thermoregulation in newborn. If temperature is not maintained properly, results in hypothermia and death.

During the clinical postings, the investigator felt that many of the staff nurses have very little knowledge and they are not properly practicing the neonatal thermoregulation measures. Therefore, it is very essential that care givers should have adequate knowledge regarding these factors because failure in neonatal thermoregulation will affect the neonates'

health and it will act as a vicious circle and consequently contribute to mortality and morbidity among neonates. So it is very important to make the staff nurses aware of various aspects of child care and prepare them for neonatal thermoregulation.

Maintaining a neutral thermal environment is one of the key physiologic challenges faced by the newborn after delivery. Attention to the management of an infant's neutral thermal environment may lead to improvement in clinical outcome, including improved survival. Because of all these reasons, assessing nursing competence related to neonatal thermoregulation becomes important. So that nurses who are handling neonates must be trained regarding thermoregulation methods.

STATEMENT OF THE PROBLEM

A study to develop an instructional module to enhance clinical competence in neonatal thermoregulation among nurses working in labour room and operation theatre of SUT Hospital, Pattom

OBJECTIVES OF THE STUDY

1. To assess clinical competence of nurses in neonatal thermoregulation, in terms of their knowledge and practice, working in



labour room and operation theatre of SUTHospital, Pattom.

2. To find out the association between clinical competence and selected socio demographic variables like educational qualification, present working area, experience in labour room and operation theatre and training programme attended related with neonatal thermoregulation.

3. To evaluate the effectiveness of instructional module in enhancing clinical competence.

HYPOTHESES

H₁: There is significant increase in the mean knowledge score of nurses after implementation of instructional module.

H₂: There is significant increase in the mean practice scores after administering instructional module.

H₃: There is significant association between clinical competence and selected demographic variables.

CONCEPTUAL FRAMEWORK

The conceptual frame work used for the present study is based on Billie's system approach for the nursing staff development. He opined that staff development is an integral component of every organization. He defined three components of staff development within a basic system approach to promote job performance.

Three components according to Billie are:

Input: Input includes entry staff behavior, level of education and prior experience.

Through put: Throughput is the processes designed to assess, maintain and develop the abilities of nurses as they practice nursing.

The primary processes used in nursing staff development are

1. Assessing competence
2. Developing competence
3. Maintaining competence

Output: Output refers to the final staff behavior and quality patient care.

METHODOLOGY

RESEARCH APPROACH

The present study uses an evaluative approach to study the impact of an instructional module on knowledge and practice of nurses regarding selected aspects of neonatal thermoregulation.

RESEARCH DESIGN

In the present study, a quasi experimental one group pre test - post test research design was adopted.

POPULATION

In this study, population refers to nurses working in labour room and operation theatre of SUT Hospital, Pattom.

SAMPLE AND SAMPLING TECHNIQUE

Samples consisted of 30 staff nurses working in labour room and operation



theatre of SUT Hospital, Pattom. Purposive sampling technique was used that involved entire population. Purposive sampling can provide data that are more specific and directly relevant to the research concern.

DEVELOPMENT AND DESCRIPTION OF TOOL

Tool used for data collection for this study were:

1. A structured questionnaire to assess the level of knowledge; and
2. An observation check list to assess the practice

Questionnaire consisted of 2 sections

A - Socio demographic data

B - Knowledge regarding neonatal thermoregulation

Section A: This section was intended to collect demographic variables of the staff nurses such as age in years, sex, educational qualification, present working area, total years of experience, training programmes attended and formal orientation programme prior to posting regarding neonatal care.

Section B: This section consisted of 31 questions related to the general aspects of neonatal thermoregulation

Observation check list: It consisted of 14 statements to observe the practice of staff nurses related with neonatal thermoregulation.

ETHICAL CONSIDERATION

The investigator got formal permission from the Director of the hospital and Heads of concerned clinical area. The investigator established good rapport with the staff nurses working in the labour room and gynaec operation theatre and explained the purpose of the study. An informed written consent was obtained from the study participants. It was assured to them that all the data would be kept strictly confidential and used only for the study purpose.

PLAN FOR DATA ANALYSIS

It was planned to analyze the data by using Statistical Package for Social Sciences (14 version). Based on the scores obtained, the clinical competence was graded, as adequate and inadequate. Paired 't' test was used to test the effectiveness of instructional module by calculating the difference between pre test and post test mean scores.

RESULTS

The major findings of the study were presented under the following sections.

Section I: - Socio demographic characteristics of staff nurses

Section II: - Assessment of existing level of knowledge and practice of staff nurses regarding neonatal thermoregulation

Section III: - Influence of selected socio demographic variables on existing level of



knowledge and practice of staff nurses regarding neonatal thermoregulation.

Section IV: - Effectiveness of instructional module to improve knowledge and practice regarding neonatal thermoregulation.

Section I: - Socio demographic characteristics of staff nurses

After collecting socio demographic data from samples it is evident that majority of staff nurses have ≤ 25 years, no prior experience in concerned areas & not attended any training or orientation programme.

Section II: - Assessment of existing level of knowledge and practice of staff nurses regarding neonatal thermoregulation

Pre test result shows that around half of the staff nurses had adequate knowledge & practice.

Section III: - Influence of selected socio demographic variables on existing level of knowledge and practice of staff nurses regarding neonatal thermoregulation.

It was found that there was significant association between demographic variables like educational qualification, present working area, experience in operation theatre and training programme attended related with neonatal thermoregulation and knowledge of staff nurses.

Section IV: - Effectiveness of instructional module to improve

knowledge and practice regarding neonatal thermoregulation.

The mean score related to awareness regarding neonatal thermoregulation has improved from 13.67 to 21.30. The increase in mean score after the administration of module was found to be highly significant ($t = 11.728$, $df = 29$, P value = 0.000). The mean score related to practice regarding neonatal thermoregulation among staff nurses has increased from 7.43 to 9.90. The increase in mean score after the administration of module was found to be highly significant ($t = 9.409$, $df = 29$, P value = 0.000).

The results of the study supports that nearly half of the staff nurses in labour room and operation theatre had adequate knowledge and practice regarding neonatal thermoregulation. Attending training programmes related to neonatal thermoregulation/newborn care had significantly improved the level of knowledge but it had no influence on practice. So, it needs to be seriously investigated. Another finding of the study was no orientation programme was given to the staff nurses working in labour room and operation theatre related with newborn care prior to their posting concerned areas.



CONCLUSION

The study assessed the effect of instructional module in improving the clinical competence of staff nurses regarding neonatal thermoregulation. It is evident that instructional module helps to improve their knowledge level. Eventhough they got more information about neonatal thermoregulation the investigator found that the improvement in their practical session was comparatively lower when compaired with the hike in their knowledge level. Nurse administrators needs to be more vigilant.

RECOMMENDATIONS

1. All staff nurses working in labour room and operation theatre might receive proper training in neonatal thermoregulation.
2. Regular in - service education programme on neonatal thermoregulation has to be arranged for staff nurses working in hospital settings and in community.
3. The same study can be conducted in another settings.

LIMITATIONS

1. The study is limited to the staff nurses working in operation theatre and labour room.
2. The study is limited to SUT Hospital, Pattom.
3. Same tool was used for conducting both pre test and post test.



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