

A Study To Evaluate The Effectiveness Of Structured Teaching Programme Regarding Thermoregulation In Neonates In Terms Of Knowledge Of Nursing Personnel In Selected Hospitals Of Ambala, Haryana

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ABSTRACT

Newborn babies lose warmth immediately after the birth via evaporation, radiation, convection and conduction. The transition from intrauterine to extra uterine life is perhaps the greatest challenge any human being can fall in the course of life time. In the 21st century it was realized that newborns cannot maintain their own body heat therefore a warm environment is essential in the care of low birth weight newborns. The global mortality rate each year reduced by 1.3 million over the last two decades but the first month of life is still one of the most dangerous time for infant. The nursing personnel should possess knowledge regarding the importance of thermoregulation among neonates so that they can maintain neonatal thermo regulation, and hence the neonatal morbidity and mortality will be reduced.

A study was conducted to assess the effectiveness of structured teaching programme regarding thermoregulation in neonates in terms of knowledge and practice of nursing personnel in selected hospitals of Ambala, Haryana. The objectives of the study were to assess and compare knowledge and practice of nursing personnel regarding thermoregulation in neonates before and after STP, to determine the relationship between level of knowledge and practice of nursing personnel regarding thermoregulation in neonates with selected variables. The research approach adopted for the study was Quasi experimental (one group pre test-post test). The study was conducted at Ambala, Haryana. Thirty six nursing personnel were selected by Total enumeration sampling technique. The tool used for the data collection were structured knowledge questionnaire to assess knowledge of nursing personnel regarding thermoregulation in neonates and observational checklist to assess the practice of nursing personnel regarding thermoregulation in neonates. The data were analyzed by using both descriptive and inferential statistics. The findings of the study were that the mean knowledge score of nursing personnel (22.08 ± 8.63) are increased after structured teaching program (39.83 ± 5.26) with a significant statistical difference at the level of 0.05 level of significance. The findings of the study were that the mean practice score of nursing personnel (6.83 ± 1.10) are increased after structured teaching program (8.22 ± 0.76) with a significant statistical difference at the level of 0.05 level of significance. There is a mild positive significant correlation between knowledge and practices. The finding of the study revealed that structured teaching program positively affect nursing personnel's knowledge and practice regarding thermoregulation in neonates.

Key words: Knowledge, practice, structured teaching programme, effectiveness, thermoregulation

INTRODUCTION

The first 28 days of life are known as the neonatal period. The child during this

time is known as neonate. The children in this age group are vulnerable and are liable to get various disease and disabilities. The

morbidity and mortality rates in newborn infant are high. It is therefore very important comprehensive health care service to children to promote their health.^[1]

Hypothermia is a major cause of morbidity and mortality in infants, underscoring the importance of maintaining normal body temperature in the delivery room. The World Health Organization (WHO) lists hypothermia as a “top killer” during the neonatal period^[2] and suggests that it is widely underreported and underestimated as a cause of death.^[3]

Newborn baby is a homoeothermic, but his ability to stay warm may easily be overwhelmed by extremes of environmental temperatures. Neonatal hypothermia often due to lack of attention by health care providers continues to be a very important cause of neonatal deaths.^[4]

The world health organization (WHO) has included thermal care (including the prevention of the neonatal hypothermia) as a component of the essential care in the newborn among the package of basic interventions recommended university for all babies.^[5]

Immediately after delivery if no action is taken, the core and skin temperatures of a term neonate can decrease at a rate of approximately 0.1°C and 0.3°C per minute respectively. The rapid decline in temperature is mainly due to physical characteristics of the newborn and environmental factors of the delivery area. Typically a wet newborn with a high surface area to volume ratio moves from a warm aqueous uterine environment into a cooler, dry delivery room.^[5]

A study was conducted to evaluate the knowledge, attitude and practices about neonatal hypothermia among medical and paramedical staff dealing with newborn care in Jaipur. A total of 160 subjects were assessed (40 pediatric medicine residents, 40 obstetric residents, 40 private practitioner 40 paramedical staff working in labor room and postnatal wards). A pre-tested structured questionnaire was used. Only

47.8% of the subjects defined neonatal hypothermia correctly. Only 18.6% of the interviewees had knowledge of the correct method of recording the temperature in a newborn. The present study reveals the gross lacunae in the knowledge regarding various aspects of neonatal hypothermia among pediatric and obstetric residents and paramedical staff working in labor room and postnatal wards. To reduce the neonatal morbidity and mortality due to neonatal hypothermia, greater emphasis should be laid on this problem while designing curriculum for training of undergraduate and postgraduate doctors, paramedical staff and traditional birth attendants.^[6]

Hypotheses

The following hypothesis will be tested at 0.05 level of significance.

H₁: There will be significant difference between the mean pre-test and post-test knowledge score of nursing personnel regarding thermoregulation in neonates.

MATERIAL AND METHODS

Research approach

Quantitative Research Approach

Research design

Quasi Experimental - One group Pre-test Post-test Design.

The symbolic presentation of the research design is as follows:

OK1 X OK2

KEY:

OK1= Assessment of knowledge of Nursing Personnel on thermoregulation in neonates before the administration of Structured Teaching Program regarding thermoregulation in neonates.

X = Administration of Structured Teaching Program regarding Thermoregulation in Neonates

OK2= Assessment of knowledge of Nursing Personnel on thermoregulation in neonates after the administration of Structured Teaching Program.

Group	Pre-test Day 1	Intervention Day 1	Post test Day 15
Nursing Personnel	Knowledge of Nursing personnel regarding thermoregulation in neonates.	Administration of Structured teaching program regarding thermoregulation in neonates.	Knowledge of Nursing personnel regarding thermoregulation in neonates

Variables

Independent Variable: Structured teaching programme regarding thermoregulation in neonates

Dependent Variables: Knowledge of Nursing personnel.

Setting of the study

The present study was conducted in Civil Hospitals of District Ambala, Haryana.

Population

Population: Nursing personnel.

Target population: Nursing personnel working in Civil Hospitals of Haryana.

Accessible population: Nursing personnel working in Civil Hospital Ambala city, Civil Hospital Ambala cantt, Civil Hospital Naraingarh, Ambala, Haryana.

Sample and sampling technique

Total Enumeration Sampling Technique.

Sample size

The sample size for the study comprised of 36 Nursing personnel who were working in civil Hospital, Ambala, Haryana.

Inclusion criteria

The study includes the nursing personnel who were:

Presently working in Labour room, NICU and Postnatal ward of civil hospital Ambala city, civil hospital Ambala cantt and civil hospital Naraingarh.

Willing to participate in this study.

Ethical consideration

This study was approved by the ethical committee of M.M University and MMIMS&R, Mullana, Ambala to conduct the final study. Permission for the study was taken from the

Civil Surgeon, Ambala, Haryana. Consent was prepared and filled by the participant of

the study subjects regarding their willingness to participate in the research study.

Data collection tools and techniques

Tools for data collection: Structured knowledge questionnaire

Structured knowledge questionnaire was developed to assess the knowledge of Nursing personnel on thermoregulation in neonates.

Structured knowledge questionnaire consisted of 50 items with four options and every correct answer was awarded a score of "one" and every incorrect answer was awarded a score of "zero".

The maximum possible score was 50 and a minimum score was zero.

Validity was confirmed through content validity index and the CVI- was 0.89, which was within the normal range 0.8-1. The reliability coefficient for structured knowledge questionnaire was calculated by using Kuder-Richardson- 20(KR₂₀) formula and the acceptable range is 0.07-1.00 and it was found to be 0.76.

The tool was found to be valid, reliable and feasible for the purpose of study.

Structured teaching program was developed for Nursing personnel to enhance their knowledge on Thermoregulation in neonates. The teaching was given with power points and charts. The teaching plan consists of concept of hypothermia, assessment of temperature in neonates, prevention of hypothermia in neonates, management of hypothermia in neonates, hyperthermia in neonates and its management and maintenance of temperature of neonate in different wards

Data collection technique: paper and pencil for structured knowledge questionnaire.

On 1st day, data was collected regarding demographic variables and knowledge pre-test on thermoregulation in neonates was conducted.

After the pre-test, Structured Teaching Programme on thermoregulation in neonates was given by using power point slides and charts. On the 15th day post-test knowledge on thermoregulation in neonates was taken.

RESULTS

SPSS version 16.0 was used to analyze the data. Level of significance for the present study was taken as $p \leq 0.05$.

Table 1: Range, Mean, Median and Standard deviation of Pre-Test and Post-test Knowledge Score of Nursing Personnel regarding thermoregulation in neonates N=36

Knowledge test	Range	Mean± S.D	Median
Pre-test	14-49	22.08±8.63	19.50
Post-test	26-49	39.83±5.26	40.00

Maximum Score= 50 Minimum score= 00

Table 1 shows that the range of pre-test knowledge score was from 14-49 and the range of post-test knowledge score was from 26-49. The mean pre-test knowledge score with standard deviation was (22.08±8.63). The median of pre-test score was (19.50). The mean post-test knowledge score with standard deviation was (39.83±5.26). The median of post-test score was (40.00). The mean post-test was higher than the mean pre test knowledge scores of nursing personnel regarding thermoregulation in neonates.

TABLE 2: Mean, Mean Differences, standard deviation of differences, Standard error of mean difference and 't' value of pre and post test knowledge score of Nursing personnel regarding thermoregulation in neonates

N=36						
Knowledge Score	Mean	M _D	SD _D	SE _{MD}	't' value	p value
Pre-test	22.08	17.75	9.53	1.58	11.16	0.00*
Post-test	39.83					

Maximum Score=50 Minimum Score=00
 't'(35)=2.724 at 0.05 level of significance *significant(p<0.05)

Table 2 depicts the Mean, Mean Differences, standard deviation of differences, Standard error of mean difference and 't' value of pre and post test knowledge score of Nursing personnel regarding thermoregulation in neonates. The computed t value (11.16) $p < 0.05$ was higher than the tabulated value, which indicates that there was significance difference between pre-test knowledge score and post-test knowledge score. Thus, it was concluded that difference obtained in the mean pre-test and post-test knowledge score was a true difference and not by chance.

Hence, the null hypothesis (H_{01}) was rejected and research hypothesis (H_1) was accepted. This indicates that the S.T.P was effective for increasing knowledge of Nursing personnel regarding thermoregulation in neonates.

DISCUSSION

The present study aimed to evaluate the effectiveness of structured teaching program regarding thermoregulation in neonates in terms of knowledge of Nursing Personnel.

In the present study, the mean post-test knowledge score of nursing personnel (39.83±5.26) was higher than the mean pre-test knowledge scored (22.08±8.63). The computed t value, $t(35) p < 0.05$ indicates a significance difference between pre-test knowledge score and post-test knowledge score, this indicates gain in knowledge after the administration of structured teaching program regarding thermoregulation in neonates These findings was consistent with a study conducted by Amita Sood, Yogesh Kumar (2012) whose findings of the study revealed that the mean post-test knowledge score was higher than the mean pre-test knowledge score. The study also concludes that the video-teaching programme was

effective in terms of enhancing the knowledge and skills of nursing personnel regarding the concept of thermal protection of neonates.^[7]

In the present study, there was a significant difference in the mean post-test practice score (7.31 ± 0.88) was higher than the mean pre-test practice score (6.83 ± 1.10). The computed t value, $t(35) p < 0.05$ indicates a significance difference between pre-test practice score and post-test practice score, this indicates gain in practice after the administration of structured teaching program regarding thermoregulation in neonates. Similar study was conducted by Neha Parmar whose findings of the study revealed that the mean post test knowledge and practice score of samples on thermoregulation of neonates was higher than mean pre test knowledge and practice score. The study also revealed that the PTP and demonstration was effective in increasing knowledge and practice among the Samples.^[8]

Hence, the structured teaching program regarding thermoregulation in neonates was found to be highly acceptable and useful to enhance the knowledge and practice.

CONCLUSION

Based on the findings of the study it is concluded that Structured Teaching Program was effective in enhancing the knowledge of nursing personnel regarding thermoregulation in neonates. Nurses expressed STP to be highly acceptable and useful regarding thermoregulation in neonates.

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How to cite this article: Philip A, Sarin J, Kumar Y. A study to evaluate the effectiveness of structured teaching programme regarding thermoregulation in neonates in terms of knowledge of nursing personnel in selected hospitals of Ambala, Haryana. *Int J Health Sci Res*. 2019; 9(7):73-77.
