

A Study to Assess the Effectiveness of Structured Teaching Program on Knowledge and Practice Regarding Warm Chain in the Prevention of Hypothermia in Newborn Babies Among Staff Nurses in Selected Hospital In Jaipur

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Abstract:

Thermal protection of the newborn is a series of measures taken at birth and in the first days of life to ensure that the newborn does not become either cold or overheated and maintains a normal body temperature of 36.5—37.50C. The newborn cannot regulate its temperature as well as an adult. The poor utilization of this care arises in many high-risk cases and sometimes it leads to the death of newborns. So the present study aim at knowledge and practice regarding warm chain in the prevention of hypothermia in newborn babies among staff nurse. Design/methodology/approach: The experimental research design was used for the study Information can be gathered by direct questioning and through observation method (60 samples) of staff nurses. The data were analyzed through chi-square by using pre-test and post-test knowledge. Findings: the findings show the significant influence of demographic variables in terms of age, gender, professional qualification, professional experience, experience in the labor room, working department, and previous knowledge Research limitations: the study was limited to hospitals of Jaipur with limited demographic variables.

Keywords

Knowledge: It refers to the response of staff nurses on warm chain in the prevention of hypothermia in newborn babies.

Warm chain: It refers to a set of ten interlinked procedures carried out at birth and latter which will minimize the likelihood of hypothermia in all newborn.

Hypothermia: It refers to a body temperature less than 36.5°C(99.5°F).

Newborn babies: It refers to newlyborn babies irrespective of their Gestational age & weight.

Staff nurse: who are working in selected hospital.

INTRODUCTION

A newborn is precious not only to her parents but also to the community, nation and to the world. “A healthy child has a sure future” is one of the themes of WHO. Neonatal care starts in premarital and continues from conception through suitable care during pregnancy, childbirth and childhood. If primary neonatal care is inadequate, it leads to unacceptable high neonatal morbidity and mortality.

The transition from intra-uterine to extra-uterine life is perhaps the greatest challenge any human being can face in the course of life time. In the early 1900s it was realized that a warm environment was essential in the care of low birth weight newborns because they could not maintain their own body heat. Hypothermia has since been recognized as a significant cause of neonatal illness and death, and has been described in low birth weight as well as normal newborns, on every continent, and even in tropical countries.

In the developed world, awareness of the importance of a warm environment has been resulted in improved care of the newborn, especially of preterm and low birth weight babies, who are at special risk. In many parts of the developing World, there is very little understanding of the thermal needs of newborn babies and the significance of neonatal hypothermia.

Workers have not received training in thermal protection, the policies and procedures necessary for maintaining a suitable thermal environment for newborn babies are lacking, and harmful practices are common

Mechanism of heat loss

The temperature inside the mother’s womb is 38°C (100.4013). Leaving the warmth of the womb at birth, the wet newborn finds itself in a much colder environment and immediately starts losing heat.

Newborns lose heat by:

1. **Evaporation:** Particularly soon after birth due to evaporation of amniotic fluid from skin surface.
2. **Conduction:** By coming in contact with cold objects such as cloth, tray etc.
3. **Convection:** By air currents in which cold air from open windows replaces warm air around baby.
4. **Radiation:** To colder solid objects in vicinity such as a cold wall or a window even if the baby is not actually touching them.

The warm chain:- The warm chain is a set of ten interlinked procedures carried out at birth and later, which will minimize the likelihood of hypothermia in all newborns. 1. Warm delivery room, 2. Immediate drying, 3. Skin to skin contact, 4. Breast feeding 5. Bathing and clothing postponed, 6. Appropriate clothing and bedding, 7. Mother and newborn together (rooming-in), 8. Warm transportation, 9. Warm resuscitation, 10. Training and Awareness raising

2. REVIEW OF LITRUTURE

Literture of review is a content or knowledge related to topic which make the scholar familiar with the exciting studies and provide the information needed to conduct the research. A study was conducted to identify the incidence and seasonality of hypothermia among newborns in southern Nepal. A total of 23,240 newborns born between September 2, 2002, and February 1, 2006 were the participants. Measurements lower than 36.5°C were observed in 21,459 babies (92.3%); half (48.6%) had moderate or severe hypothermia and risk peaked in the first 24 to 72 hours of life. A study was conducted at the university Teaching hospital, (Lusaka, Zambia) to investigate the prevalence of neonatal hypothermia,

type of infant care & incidence of mortality. 261 infants aged 0-7 days, admitted to the pediatric unit during the 'warm' season were recruited to the study. 44% of the infants were hypothermic ($<36^{\circ}\text{C}$). Total number of death was 82(31%) and the mortality was higher in infants who were hypothermic

3. NEED OF THE STUDY

Hypothermia is one of the main causes of neonatal morbidity and mortality in developing countries. Neonatal hypothermia is caused more by lack of knowledge than lack of equipment and it is an important cause of neonatal death. After birth a baby's body temperature can fall very quickly. The healthy term baby will try to maintain his temperature within the normal range. The important responsibility of the nurse is to stabilize and maintain the neonate's body temperature by achieving a balance between heat production and heat loss. During one year study period, there were 2063 live births and 59% of these developed neonatal hypothermia. The incidence of hypothermia was observed to vary with reasons being significantly higher in winter. Hypothermia remains an important clinical finding in neonatal care in a resource-poor setting like India. The warm chain should be strengthened in all health facilities which offer delivery services and should be incorporated into home-based care of high-risk newborn babies.

4. OBJECTIVES OF THE STUDIES

1. To assess the level of knowledge of staff nurses regarding warm chain in prevention of hypothermia in newborn babies before structured teaching programme.
2. To assess the practice of staff nurses regarding warm chain in prevention of hypothermia in newborn babies before STP.

5. Hypothesis

H1:-There will be a significant difference between the pre test and post test knowledge and practice score of staff nurses regarding warm chain in prevention of hypothermia.

H2:-There will be significant correlation between knowledge and practice of staff nurses regarding warm chain in prevention of hypothermia.

H3:- There will be significant association of post test knowledge level with selected demographic variable.

H4:- There will be significant association of the post test practice score with the selected demographic variables

6. Research methodology

The current investigated the effect of various socio demographic trait (such as age, Gender, Education qualification, Working area, Total year of experience experience in labour room, previous knowledge about warm chain). The Conceptual framework of this study was based on Imogene King's Goal Attainment Model. In the present study an interaction took place between the investigator and the staff nurse during which the goal to improve the knowledge and practice of staff nurse on warm chain was set. a conceptional structure or a blue print for conducting the research called research design. the present study has adopted A quasi-experimental one group pretest post-test design with evaluator approach was adopted to determine the effectiveness of the STP in terms of gain in knowledge score.

7. Analysis and interpretation

Demographic profile of responds

Table: 1. Represents detail information about demographic profile of responds

Age	Frequency	percentage
21- 25 years	29	68.33%
25- 30 years	19	31.66%
31- 35 years	5	8.33%
35 above	7	11.66%
Total	60	100
Gender		
Male	14	23.33
Female	46	76.66
Total	60	100
Professional qualification		
GNM	50	83.33%
BSC Nursing	09	15%
Pc BSC	01	1.6%
MSC Nursing	-	-
Total	60	100
Department where working		
General ward	12	20%
Labour room	28	46.66%
ICU	12	20%
NICU	08	13.33%
Total	60	100
Professional experience		
< 1 year	29	68.33%
1- 5 years	19	31.66%
5- 10 years	5	8.33%
> 10 years	7	11.66%
Total	60	100
Experience in labour room		
< 1 year	46	76.66%
1- 5 years	12	20%
5- 10 years	1	1.6%
> 10 years	1	1.6%
Total	60	100

8. Result and discussion:-

1. objective was To assess the level of knowledge of staff nurses regarding warm chain in prevention of hypothermia in newborn babies before structured teaching programme.

The overall pre test knowledge of staff nurse revealed that 47 (78.53 %) had inadequate knowledge , 10 (16.66%) had moderate only 3 (5%) subject had adequate knowledge . the mean percentage was 37.25 with standard deviation of 1.94 which shows that subject had inadequate knowledge on warm chain in prevention of hypothermia. This inadequate knowledge may be because there was no in – service education programme

on warm chain in prevention of hypothermia in this hospital would have given an opportunity to keep abreast new knowledge and development and sharpen their professional skill. This study is supported by the study was conducted on the effectiveness of competency-based teaching programme on the prevention of neonatal hypothermia

2. objective was To assess the practice of staff nurses regarding warm chain in prevention of hypothermia in newborn babies before STP.

The overall pre test practice of staff nurse revealed that 54 (90%) had inadequate practice and 5 (8.3%) had moderate practice and only 1 (1.6%) subject had adequate practice the mean percentage of overall practice was 29.68% with standard deviation of 1.44 which shows that subject had inadequate practice on warm chain in prevention of hypothermia. This study finding were supported by the study was conducted to evaluate the knowledge, attitude and practices about neonatal hypothermia among medical and paramedical staff dealing with newborn care in Jaipur

3. correlate the improvement knowledge and practice of staff nurse regarding warm chain in prevention of hypothermia in newborn babies .

Using Spearman's rank correlation coefficient between knowledge and practice of staff nurse regarding warm chain in prevention of hypothermia. thus study finding reveal that there is positive correlation between knowledge and practice as the knowledge increase practice also improve the result show that $r = 0.99$ the structured teaching programme will help to improve knowledge and thereby skill in practice in warm chain in prevention of hypothermia

Hence the null hypothesis H_0 was rejected and restated that there is significant relationship between knowledge and practice of staff nurse regarding warm chain in prevention of hypothermia.

9. Nursing Implications

Nursing education

The importance of warm chain must be emphasized in the nursing curriculum so that nursing staff will be aware of the critical situations like hypothermia of neonates and warm chain for the maintenance of neonatal temperature and to prevent hypothermia in order to reduce neonatal mortality rate. The nurse educator and staff development personnel continue to teach warm chain in prevention of hypothermia so that the next generation of nurse serve better if they were taught.

Nursing practice

In the hospital set-up nurses should play an important role in taking care of the neonates with hypothermia and in its prevention. In the clinical area as well as in the community the nurse will have direct contact with the patient and the family. keep the warm the baby and the environment of the baby , provide KMC ,proper breast feed. maintain the warm chain to prevent the newborn from hypothermia ..

Nursing administration

The study findings will help to improve the quality of patient care to babies who are admitted in labour room, NICU and in the post natal Ward. The nursing administration may encourage nurses to attend short- term courses, provide good reading materials and ensure that nurses make use of them. The staff nurses should be instructed to provide warm chain for the prevention of hypothermia in the routine practice.

10.Limitations

The subject had difficulty in attaining the teaching programme and demonstration due to time factor

11. Conclusion

The present study assisted the knowledge and practice of staff nurse regarding warm chain in prevention of hypothermia which affect on care of new born

REFERENCES:

1. Rangappa AS. Prevention of hypothermia in neonates. *Nightingale Nursing Times* 2011 Mar;12 (6)139-43.
2. Kumar V Shearer. Neonatal Hypothermia in Low Resource Settings: A Review. *Journal of Perinatology* 2009;29: 1-12.
3. Thermal protection of the newborn: a practical guide. WHO/RHT/MSM/97.2 Ghai OP. *Essential paediatrics*. Sm edition. New Delhi: Metha Publishers; 2005.
4. *Essential newborn care: Report of a technical working group WHO/FRH/MSM/96.13*
5. Thomas K. Thermoregulation in neonates. *Neonatal Net W*, 1994 13(2):15-22
6. St.Louis Mosby Merenstein G.B. Gardiner SI *Hand book of neonatal Intensive care* 3rd edition,1998
7. Nursan CD, Tuncay FM. Neonatal thermoregulation. *Journal of Neonatal nursing* 2006;12:69-74.
8. NNF Teaching AIDS; Newborn care; hypothermia in newbom.[on line]. [cited 17.7.2010]. Available from: [URL:http://www.newbom_whocc.org/pdf/teaching-aids/hyp0thermia.pdf](http://www.newbom_whocc.org/pdf/teaching-aids/hyp0thermia.pdf) (accessed on 9.9.2010).
9. Byaruhanga R, Bergstrom A. Neonatal hypothermia in Uganda: Prevalence and risk factors. *Journal of Tropical Paediatrics* 2007;51(4): 212-4.
10. Americal college Nurses – (Midwives Traditional Birth Attenders Training). *The Journal of Midwifery & Women Health* 2004. Jul/Aug 49:4:298-304