

A study to assess the knowledge regarding care of incubated newborn among IIIrd year B.Sc Nursing Students in selected colleges at Tumkur

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Abstract: -Background of the study: In the present study the data was collected on knowledge regarding care of incubated newborn among 3rd year B.Sc Nursing students.

Objectives of the study:

1. To assess the knowledge regarding care of incubated newborn among the III rd year B.Sc nursing students.
2. To find out the association between the knowledge and selected socio-demographic characteristics of IIIrd year bsc nursing students.

Methods: Descriptive research design was adopted for the present study. The Structured Knowledge Questionnaire was developed to collect the data. The pilot study was conducted among 20 3rd year B.Sc Nursing students of Akshaya College of Nursing on 02-05-2013 to find the feasibility of the study. The final study was conducted at Sridevi College of Nursing and Ramana Maharshi College of Nursing from 11-05-2013 to 23-07-2013 among 100 3rd year B.Sc Nursing students who were selected by using convenient sampling technique and the data collected was analyzed and interpreted based on Descriptive and Inferential statistics.

Results: Results also revealed that majority (53%) had poor knowledge, around (44%) had average knowledge and only (3%) had good knowledge regarding care of incubated newborn.

The present study showed that there was no statistically significant association between knowledge scores and selected demographic variables such as age, sex, type of family, educational status of father and mother.

Index Terms— New born, Incubator, care, knowledge.

I. INTRODUCTION

The newborn cannot regulate its temperature as well as an adult. It therefore cools down or heats up much faster and is able to tolerate only a limited range of environmental temperatures. The smaller the newborn, the greater the risk. Thermal stability improves gradually as the baby increases in weight.

The temperature inside the mother's womb is 38°C (100.4°F). Leaving the warmth of the womb at birth, the wet newborn finds itself in a much colder environment and immediately starts losing heat.

In the days following birth, hypothermia can be prevented by keeping the baby and mother together (rooming-in), by breast-feeding as long and as often as the baby wants, and by dressing the baby appropriately for the environmental temperature. Low birth weight or sick newborns are most vulnerable to hypothermia. Methods to keep these high-risk babies warm include kangaroo-mother care (round-the-clock skin-to-skin contact), "warm rooms", heated water-filled mattresses, radiant heaters, and incubators.¹

A neonatal incubator is a device consisting of a rigid box-like enclosure in which an infant may be kept in a controlled environment for medical care. The device may include an AC-powered heater, a fan to circulate the warmed air, a container for water to add humidity, a control valve through which oxygen may be added, and access ports for nursing care. It may also contain a servocontrol to help regulate incubator air temperature. The servocontrol uses a temperature sensing thermistor, which is taped to the child's abdomen.

Over 130 million babies are born every year, and more than 10 million infants die before their fifth birthday, almost 8 million before their first. Every year over 4 million babies die in the first four weeks of life; 3 million of these deaths occur in the early neonatal period. Ninety-eight per cent of the deaths take place in the developing world. Recent studies in selected countries have shown that hypothermia is still a common problem and that it contributes to the high perinatal mortality rate seen in the developing world. This situation results more from lack of

knowledge than from lack of equipment. Health personnel and mothers are not aware of the importance of keeping newborn babies warm. In health facilities where managers and health 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. Under such circumstances, the risk of neonatal hypothermia or hyperthermia is considerable.

Nursing staff must regulate and record the incubator air temperature regularly. Even if the incubator has heat-sensitive probes that monitor skin temperature, nursing staff must take the baby's body temperature regularly (every 4-6 hours) and adjust the temperature of the incubator if necessary to ensure that the newborn maintains normal body temperature. It should be possible to regulate the air temperature inside the incubator between 30-37°C (86-98.6°F). Thus incubators may be more of a hazard than a benefit to newborns if they are not used and maintained correctly.

II. REVIEW OF LITERATURE

A descriptive study was conducted on knowledge and attitudes regarding neonatal hypothermia among nursing staff in SMS Medical College. A total of 160 subjects were assessed that included 40 nursing staff in labour rooms and general wards. A pretested structured questionnaire was used. Only 47.8% of the subjects defined hypothermia correctly. As many as 52.2% of the subjects had considered it to be an uncommon problem; only 18.6% of the subjects had knowledge about the correct method of recording temperature in a newborn.⁹

A study was conducted in the neonatology unit of the Department of Paediatrics, Kamla Nehru Hospital and Indira Gandhi Medical College, Simla to determine the incidence of hypothermic babies. The study was carried out from July 1994 to June 1995 during which there were 2063 live births and 59 (29%) of these developed hypothermia. Hypothermia was detected in babies while they were in the operation theatre (n=11), labour room (n=18) and maternity ward with mothers (n=26). The first 24 hours of life were observed to be critical for maintaining the body temperature as maximum case of hypothermia were seen during this period (n=47). Birth asphyxia requiring active resuscitation was

associated with 51% cases of hypothermia and 18.6% had septicaemia.²⁰

A study was conducted on weaning of premature infants from incubator to an open crib in an NICU in Saint Mary Plain Hospital, Lubbock, Texas. Thirty pairs of healthy growing pre-term infants were included in this randomised prospective study comparing thermal weaning at 1700 gms with that at 1800 gms. The result showed no infant in either group lost weight after successful weaning and mean 24-hour weight gain was similar for both groups. Two infants were weaned at 1800 gms requiring return to the incubator due to hypothermia and 4 infants weaned at 1700 gms likewise requiring return to the incubator. Based on an intention to treat analysis infants weaned at 1700 gms were discharged one day sooner than those weaned at 1800 gms. However this result was not statistically significant (p=0.13).²⁴

A study was conducted to assess the prevalence of pathogenic organisms in the environment of a neonatal unit in the Department of Microbiology, University of Ghana. Ninety-two swabs were randomly collected from cots, incubators and various equipment in the unit and were cultured on blood Agar and MacCankey Agar plates. After 48 hours of incubation isolates were identified biochemically. Ninety-one percent of the swabs yielded growth with coagulase negative staphylococcus being the predominant organism (44%) followed by bacillus species (20%), E. coli (12.5%), Klebsiella (8.5%), pseudomonas species (3.6%), and mould (3.6%).¹⁸

A descriptive study was conducted among 52 nurses to investigate whether educational information for nurses concerning causes of noise would decrease noise levels in an intensive care unit in a university hospital in Sweden. An educational programme consisting of presentation of a videotape, presentation of the decibel values for various care activities, and a discussion of the problem was carried. Statistical analysis with a paired two tailed 't' test showed significant difference to exist between measurement in a cot and incubator before the intervention (p=0.0001) and between cot measurement before and after intervention programme (p=0.0007). The results of this study showed that through simple methods and without additional cost and by making the staff aware of the problem, noise levels can be lowered considerably.²⁸

III. STATEMENT OF THE PROBLEM

A study to assess the knowledge regarding care of incubated newborn among III rd year B.Sc Nursing Students in selected colleges at Tumkur.

IV. OBJECTIVES

1. To assess the knowledge regarding care of incubated newborn among the III rd year B.Sc nursing students.
2. To find out the association between the knowledge and selected socio-demographic characteristics of IIIrd year bsc nursing students.

V. HYPOTHESIS

H₀: There will not be a significant association between knowledge regarding care of incubated newborns and demographic characteristics of IIIrd year Bsc nursing students.

VI. METHODOLOGY

In view of the nature of the problem under study and objectives of the study, descriptive approach which was considered appropriate to assess the knowledge regarding care of incubated newborn among 3rd year B.Sc Nursing students. The design of the present study is 'Non Experimental Descriptive research design'. The study was conducted in Shridevi college of nursing and Ramanamaharshi college of nursing among 100 3rd year B.Sc Nursing students.

Description of Tool: The tool consists of two parts:

PART I: - Consists of questions related to demographic variables like age sex educational status of mother and father etc.

PART II: - Questions related to knowledge of the student nurses regarding care incubated newborn.

VII. RESULTS

SECTION I: DISTRIBUTION OF DEMOGRAPHIC VARIABLES

Distribution of subjects according to the age depicts that the higher percentage of students (76%) were between the age group of 20-21 years and about (24%) were in the age group of 22-23 years. Distribution of subjects according to the sex depicts that the higher percentage of students (81%) were females and only (19%) were in males. Distribution of subjects according to the type of family depicts that the higher percentage of students (87%) belonged to nuclear families and only (13%) belonged to joint families. Distribution of subjects according to the educational status of their father depicts that around 31% completed secondary and intermediate education, whereas 26% completed graduation, 5% completed primary school education, only 4% had completed post graduation and 3% no formal education. Distribution of subjects according to the educational status of their mother depicts that around 38% completed secondary education, while 18% primary education, 17% intermediate education, 11% no formal education, 10% with graduation and only 6% had completed post graduation.

SECTION II: DISTRIBUTION OF KNOWLEDGE SCORES OF STUDENTS REGARDING CARE OF INCUBATED NEWBORN.

Table 1: Mean and standard deviation for the knowledge of students care of incubated newborn.

Sl. No	Knowledge variables	No .of Items	Max score	Mean	Mean Percentage	SD
1	Structured knowledge questionnaire	25	25	7.88	65.67	1.742

n=100

SECTION III: DISTRIBUTION OF LEVEL OF KNOWLEDGE AMONG STUDENTS REGARDING CARE OF INCUBATED NEWBORN

Table 2: Knowledge level of students regarding care of incubated newborn

Level of knowledge score	Frequency	Percentage
Good (Mean+SD)	3	3
Average (Mean+SD) & (Mean-SD)	44	44

n=100

Poor (Mean-SD)	53	53
Total	100	100

Table no 2 shows that majority (53%) had poor knowledge, around (44%) had average knowledge and only (3%) had good knowledge regarding care of incubated newborn.

SECTION IV: ASSOCIATION OF DEMOGRAPHIC VARIABLES WITH KNOWLEDGE SCORE

Table 3: Association between selected Demographic variables with knowledge score of students

n=100

Sl. No	Demographic variables	Good	Average	Poor	X ²
1	Age in years				(0.069) Not significant
	a) 20-21years	1	13	21	
	b) 22-23years	2	21	32	
2	Sex				(0.256) Not significant
	a) Male	0	18	1	
	b) Female	3	26	52	
3	Type of family				(0.292) Not significant
	a) Nuclear	3	32	40	
	b) Joint	0	12	13	
4	Educational status of father				(0.591) Not significant
	a)No formal education	0	2	1	
	b)Primary	0	1	2	
	c)Secondary	0	2	2	
	d)Intermediate	0	7	18	
	e) Graduate	1	5	21	
f) Post graduate and above	2	27	9		
5	Educational status of mother				(0.116) Not significant
	a)No formal education	0	4	0	
	b)Primary	0	7	3	
	c)Secondary	3	9	4	
	d)Intermediate	0	3	15	
	e) Graduate	0	17	23	
f) Post graduate and above	0	4	8		

From the above table it is evident that there is no statistically significant association found between demographic variables with knowledge score regarding care of incubated newborn at the level of $p < 0.05$ hence H_0 is accepted.

CONCLUSION

The study concluded that majority of the students had poor and average knowledge where as only few students had good knowledge regarding care of incubated newborn. Further the study recommended that similar study can be done by taking a larger area for generalization, similar study can be done among the professional nurses and quasi-

experimental study can be conducted to assess the effectiveness of a STP or SIM.

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