Effectiveness of skin bundle care for neonates exposed to radiant warmer in NICU at SMVMCH, Puducherry

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Abstract: *A child is marvellous creation of god. Coming into this world is a big and scary adventure for babies. A healthy child is greatest gift so it is the responsibility of the nursing team to provide appropriate care and promote health. The radiant warmer is a care which was given for babies with hypothermia. Preterm and low birth weight babies are more commonly affected by hypothermia. Skin bundle care is special type of care which is given for babies exposed to radiant warmer to prevent and minimize the skin problems during exposure. The aim of the study is to assess the level of skin integrity for neonates exposed to radiant warmer. The research design adopted was pre experimental research design. The study sample was neonates. The period of data collection was six week. Totally 43 neonates were selected by using purposive sampling technique. The data was gathered and analysed by using descriptive and inferential statistical method and interpretation were made on the basis of the objectives of the study. The result of the study shows that the paired test "t" value of neonates skin condition score among neonates in post-test was "t"= 9.823 and the p<0.001. Hence, it is significant. The paired test "t" value of Dhaka dehydration scale among neonates is 10.27 and the p<0.001. Hence, it is significant.*

Key Words: *Preterm, Radiant warmer, Hypothermia.*

1. INTRODUCTION:

Coming into the world is a big and scary adventure for babies. At first, they don't know you are there to feed and care for them- they only know when they feel comfortable and safe, or otherwise. However, even from birth, they start to communicate and give you little signals when they are tired, hungry, awake, or alert. They are learning all the time, and the job of parents is to help them know that the world is a welcoming place where their needs will be met.

A newborn is, in colloquial use, an infant who is only hours, days, or up to one month old. In medical contexts, newborn or neonate (from Latin) refers to an infant in the first 28 days after birth; the term applies to premature, full term, and post mature infants, before birth, the term "foetus" is used. According to WHO, a newborn infant, or neonate, is a child under 28 days of age. During these first 28 days of life, the child is at highest risk of dying. It is, thus, crucial that appropriate feeding and care are provided during this period, both to improve the child's chances of survival and to lay the foundations for a healthy life

There are various health problems which occur usually in the first 28 days of life. Common health problems in babies include cold, cough, fever, and vomiting. Babies also commonly have skin problems, like diaper rash or cradle cap. Many of these problems are not serious. Other problems may also include skin conditions, jaundice, feeding, and reduced body temperature Babies can develop many types of skin conditions shortly after they are born A lot of these conditions last only a short time and will go away Others, however, are birthmarks that may not be visible at birth but will stay with babies throughout their lives. Out of these, hypothermia is the most common problem that occurs in most of the neonates

Hypothermia occurs when the body temperature drops below 36.5°C (97.7°F), the lower limit of the normal range of 36.5-37.5°C (97.7-99.5°F) The newborn infant with a body temperature of between 36.0 and 36.4°C (96.8 and 97.5°F) may be under cold stress which gives rise to concern An infant with a temperature of 32.0-35.9°C (89.6-96.6°F) has moderate hypothermia, while a temperature below 32°C (89.6°F) is considered to be severe hypothermia Hypothermia is usual at preterm and low birth weight (LBW) babies than normal-term neonates

Preterm and extremely LBW babies are more prone to hypothermia in first 12 hours of life due to inefficient thermoregulation. Pre-warming the delivery room and using plastic bags help in preventing hypothermia as after birth the body temperature of neonate drops at a rate of 0.1°C and 0.3°C per minute for skin and core temperature Lack of

attention to thermoregulation continues to be a cause of unnecessary deaths in the neonatal population. Maintaining a stable body temperature is essential to ensure optimal growth. If temperature is maintained, caloric expenditure and oxygen consumption is minimal. Newborn babies, in particular the preterm and the LBW, are exquisitely predisposed to hypothermia. No other equipment is identified more with the special care of newborn babies than the radiant warmers.

2. OBJECTIVES:

- To assess the level of skin integrity for neonates exposed to radiant warmer
- To evaluate the effectiveness of skin bundle care for neonates exposed to radiant warmer
- To correlate the neonatal skin condition score scale and DHAKA dehydration scale of skin bundle care for neonates exposed to radiant warmer
- To associate the level of skin integrity for neonates exposed to radiant warmer with their selected demographic variables before administering skin bundle care.

3. METHODS AND MATERIALS :

A quantitative research approach and pre-experimental research design was used.

DEVELOPMENT AND DESCRIPTION OF DATA COLLECTION TOOL:

The data collection done with formal prior permission from consent authorities, 43 samples are selected using purposive sampling technique. The tools consist of demographic variables and standard tools such as neonatal skin condition score [NSCS scale] and Dhaka's dehydration scale.

SECTION A: It consists of demographic information of the neonates exposed Warmer to radians

SECTION B: It consists of standard tools such as neonatal skin condition score (NSCS scale) and Dhaka's dehydration scale.

SCORING :

SCORE INTERPRETATION FOR NEONATAL SKIN CONDITION SCORE :

S.NO	SCORE	INTERPRETATION
1	3	Perfect score
2	4-9	Worst score

SCORE INTERPRETATION FOR DHAKA DEHYDRATION :

| S. NO	SCORE	INTERPRETATION
1	0-1	No dehydration
2	2-3	Some dehydration
3	>4	Severe dehydration

STATISTICSL ANALYSIS :

The data was organized, tabulated and analyzed according to the objectives Data analysis begins with description that applies to the study in which the data are numerical with some concepts. Descriptive statistics allows the researcher to organize the data and to examine the quantum of information and inferential statistics is used to determine the relationship**.** . A "p" value of <0.05 was considered to be statistically significant for the interpretation of results. The analysis and graphs are carried out in accordance with the above data for easy comprehension.

4. RESULTS AND DISCUSSION :

The findings reveals that out of 43 neonates, In pre-test 30 (69.8%) are in worst level of the skin integrity and 13 (30.2%) are in perfect level of the skin integrity. In post-test, Majority of the neonates 40 (93%) are in perfect level of the skin integrity and 3 (7%) are in worst level of the skin integrity respectively. The findings reveals that out of 43 neonates. In pre test, 36 (83.7%) are in severe level of dehydration, 6 (14%) are in some level of dehydration and 1 (2.3%) are in no dehydration. In post test, 20 (46.5%) are in no dehydration, 13 (30.2%) are in some level of dehydration and 10 (23.3%) are in severe level of dehydration respectively. The findings reveals that their mean, standard deviation values are 4.232,1.250 in pre-test. In post-test their mean, standard deviation values are 2 348, 0.6127 in neonatal skin condition score, In the aspect of Dhaka dehydration scale, mean and standard deviation values are 5.302, 2.659 in pre-test: 1.860,1.833 are in post-test respectively. The findings reveals that the paired test "value of neonatal skin condition score among neonates in post-test was 't'-9.823 and the p<0.001. Hence it is significant. The paired test "" value of Dhaka dehydration scale among neonates is 10.27 and the p<0.001. Hence it is significant.

SECTION A : Frequency and percentage wise distribution of demographic variables among neonates.

DEMOGRAPHIC VARIABLES	FREQUENCY [N]	PERCENTAGE[%]
1. Age of the baby [in days]		
1-9 days	32	74.4
10-18 days	10	23.3
19-28 days	1	2.3
2. Sex of the baby		
Male	23	53.5
Female	20	46.5
3. Religion		
Hindu	33	76.7
Muslim	6	14
Christian	4	9.3
Others	0	0
4. Weeks of gestation		
< 28weeks	9	20.9
28 – 33 weeks	21	48.8
34 – 37 weeks	10	23.3
38 weeks	3	7
5. Type of delivery		
Normal vaginal delivery	11	25.6
LSCS	30	69.8
Forceps delivery	2	4.6
6. Weight of the baby		
2-2.5kg	14	32.6
1.5-2kg	18	41.8
<1.5kg	11	25.6
Duration of the baby in warmer		
0 – 7 days	3	7
8-15 days	32	74.4
>15days	8	18.6
7. Mode of radiant warmer		
servo mode	16	37.2
manual mode	27	62.8
8. Temperature of the body		
36 – 36.4 degree Celsius	0	0
32 – 35.9 degree Celsius	13	30.2
<32 degree celcius	30	69.8
9. Reason for placing the baby in warmer		
Low birth weight	2	4.7
Preterm	25	58.1
10. reason for placing the baby in warmer		
low birth weight	2	4.7
preterm	25	58.1
IUGR	1	2.3
others	15	34.9
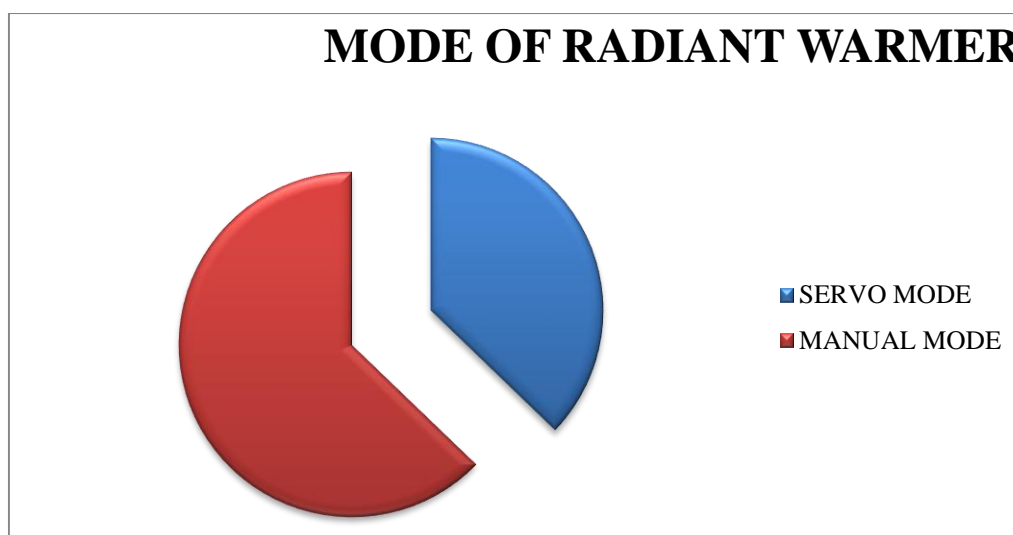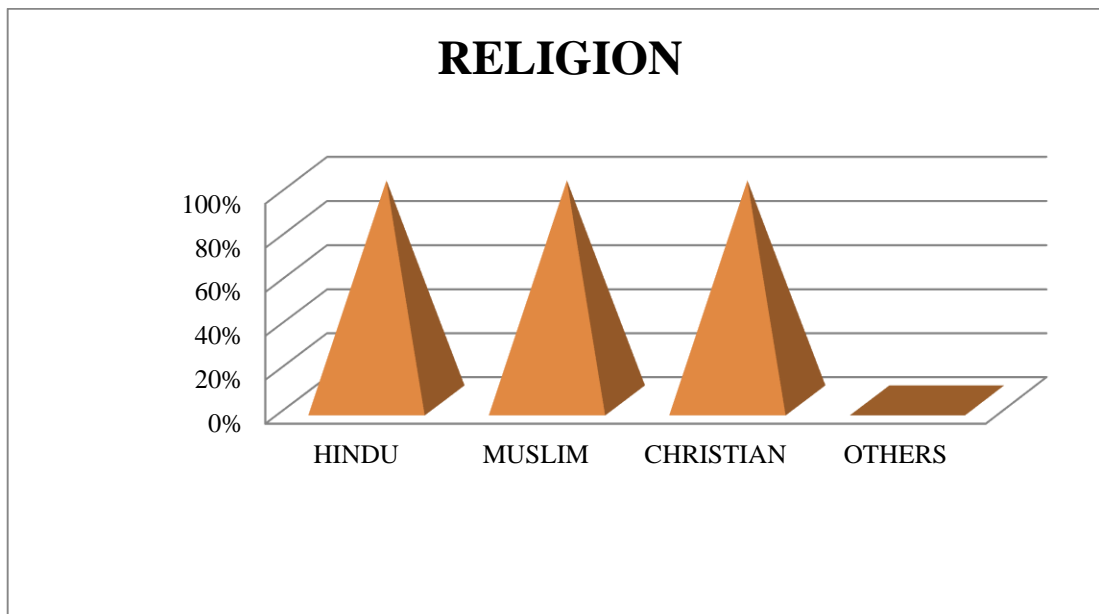
SECTION B :

   Frequency and percentage wise distribution of the level of the skin integrity for neonates exposed to radiant warmer in neonatal skin condition score scale in pre-test and post-test.

LEVEL OF THE SKIN INTEGRITY	PRE TEST		POST TEST	
	Frequency [N]	Percentage [%]	Frequency[N]	Percentage [%]
Perfect score	13	30.2	40	93
Worst score	30	69.8	3	7

   This shows Frequency and percentage wise distribution of the level of the skin integrity for neonates exposed to radiant warmer in neonatal skin condition score scale in pre and post-test The findings reveals that out of 43 neonates. In pre-test 30(69-8%) are in worst level of the skin integrity and 13 (30.29%) are in perfect level of the skin integrity. In post-test, Majority of the neonates 40 (93%) are in perfect level of the skin integrity and 3 (79%) are in worst level of the skin integrity respectively.

   Frequency and percentage wise distribution of the level of the skin integrity for neonates exposed to radiant warmer in Dhaka dehydration scale in pre and post test

LEVEL OF THE SKIN INTEGRITRY	PRE-TEST		POST-TEST	
No dehydration	1	2.3	20	46.5
some dehydration	6	14	13	30.2
severe dehydration	36	83.7	10	23.3

This table shows Frequency and percentage wise distribution of the level of the skin integrity for neonates exposed to radiant warmer in Dhaka dehydration scale in pre-test and post-test. The finding reveals out of 43 neonates. In pre-test, 36[83.7%] are in severe level of dehydration and , 6 (14%) are in some level of dehydration and 1 (2.3%) are in no dehydration. In post-test, 20 [46.5%] are in no dehydration, 13.[30.2%] are in some level of dehydration and 10 [23.3%] are in severe level of dehydration respectively.

4. CONCLUSION :

A total number of 43 newborn were selected for this present study. Thw study was conducted using Dhaka's dehydration scale and NSCS scale [neonatal skin condition score]. Dhaka's dehydration scale consist of assessment areas to assess the skin hydration of newborn and NSCS is an assessment tool to assess the various skin components of neonates. In conclusion, it was evident that the skin bundle cars on skin problems for seats exposed to radiant warmer was very effective. The theory application in clinical settings will improve the skin integrity for neonates and also prevent the skin problems, and their practical skills will be improved.

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