



## “Effects of Implementing Learning Package on Nesting and Swaddling for Premature Neonates on Nursing Officers Knowledge and Skills at Pediatric Units of Hsk Hospital and Research Center, Bagalkot”. Karnataka, India.

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### KEYWORDS

Nest making,  
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(Paediatric intensive  
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package,

### ABSTRACT:

**Introduction:** Preterm birth occurs before the 37th week of pregnancy, affecting weight gain and organ development. Preterm babies may have more medical problems and require longer hospital stays. Advances in care include new technology and medicine, focusing on emotional and developmental needs. Preterm babies need special care to mature and develop as they would in their mother's womb.

**Objectives:** To assess the level of knowledge regarding nest making and swaddling for preterm neonates among nursing officers, to assess the level of skills regarding nest making and swaddling for preterm neonates among nursing officers.

**Methods:** An evaluative study with sample size comprises of 50 nursing officers working in pediatric units and post-natal ward of HSK Hospital and Research Centre of Bagalkot. and selected by non-probability purposive sampling technique. The data was collected by using two tools A structured knowledge questionnaire and the observation check list. The data was entered in MS excel sheet and transferred at to SPSS 25 for analysis.

**Results:** Among 50 sample 64% were female and 36% were male. Among 50 participants according to their level of knowledge before the administration of learning package majority were 78% of the average knowledge and 22% have poor knowledge. After administration of learning package majority were 52% very good knowledge and 48% were good knowledge. prior to the administration of learning package. Among 50 participants skills regarding the nesting majority of 50 (100%) of subjects were the inappropriate skill regarding nesting procedure. After the administration of learning package to subjects' skills regarding the nesting there was marked increase skills regarding nesting least 14% of moderate skill and majority of 86% were the appropriate skills. And among 50 participants skills regarding swaddling that prior to the administration of learning package to subjects' skills regarding the swaddling showed that majority of (72%) were moderate skills and (28%) appropriate have skill regarding swaddling. After the administration of learning package to nursing officers' skills regarding the swaddling there is marked increase (100%) subjects' appropriate knowledge.

**Conclusions:** After obtaining the result for the present study the researcher noticed that there was significant difference between knowledge and skills after the administration of leaning package. Nursing officer's need to know the different skills regarding the nesting and swaddling procedure for preterm neonates.



## 1.Introduction:

Addressing inequalities in health outcomes, particularly sexual and reproductive health, rights, and gender, is crucial for ensuring all women have access to respectful and high-quality maternity care. With 140 million births annually, the proportion attended by skilled health personnel has increased from 58% in 1990 to 81% in 2019. However, progress is slow, with an average reduction of just under 3% per year. SDG targets for maternal health include aiming for an average global ratio of less than 70 deaths per 100,000 births by 2030 and 3.8 for universal health coverage. Preterm births cause approximately 15 million babies to be born too early, with 1 million children dying each year due to complications. Improving maternal health is a key priority for the World Health Organization (WHO)<sup>1</sup>. Pre-term birth refers to babies born before 37 weeks of gestation, with sub-categories including extremely preterm, very preterm, and moderate to late preterm. In 2020, 13.4 million babies were preterm, and around 900,000 died in 2019 due to complications. Prematurity is the leading cause of death in children under 5 years, and survival rates are starkly varying. In low-income settings, half of preterm babies die due to lack of care, while in high-income countries, almost all survive<sup>2</sup>. Pre-term neonates may experience jerky or shaky movements due to muscle weakness, tightness, and prematurity. Developmentally supportive positioning, or nesting, helps limit these issues<sup>3</sup>. Swaddling, an age-old practice of tightly wrapping infants in blankets or cloth, provides soothing and comfort, reminding them of being back in the mother's womb. Swaddling is especially beneficial for preterm babies, as their muscles are not as strong as full-term babies<sup>4</sup>.

## 2.Objectives

1. To assess the level of knowledge regarding nest making and swaddling for preterm neonates among nursing officers 2. To assess the level of skills regarding nest making and swaddling for preterm neonates among nursing officers. 3 To evaluate the effectiveness of learning package on nest making and swaddling for preterm neonates on nursing officers' knowledge and skills. 4 To find out the association between post- test level of knowledge and skills scores on nest making and swaddling for preterm neonates among nursing officers with their selected socio-demographic variables.

## 3.Methods:

An evaluative study with sample size comprises of 50 nursing officers working in paediatric units and post-natal ward of HSK Hospital and Research Centre of Bagalkot. and selected by non-probability purposive sampling technique.

### Study participants:

The study participants were nursing officers working in NICU, PICU post-natal ward general ward of paediatric unit of HSK Hospital and Research Centre of Bagalkot.

### Setting of the study:

The nursing officers working in NICU, PICU post-natal ward general ward of paediatric unit of HSK Hospital and Research Centre of Bagalkot, who fulfilled the inclusion criteria, were selected as samples for the study.

### Sampling technique:

The sample was selected by using non probability purposive sampling technique will be used to select the sample for selecting HSK Hospital Navanagar Bagalkot.

### Sample size estimation:

The sample size used for the present study was estimated using the following formula based on result of pilot study.

$$\text{Sample size} = Z\text{value}^2 \times SD^2/d^2$$

were,

Z = the value of normal variant at 95% confidence level i.e. Z value = 1.96.

SD = Standard Deviation

D = Expected allowable error in the mean (i.e. 5% of mean)

Nursing officers

Mean =11.38

SD = 1.79

d =5×11.38/100

d= 0.569

The value of normal variant at 95% confidence level i.e. Z valve = 1.96.

Hence,

Sample size (n) = Z value<sup>2</sup> × SD<sup>2</sup> / d<sup>2</sup>

Sample size (n) = (1.96)<sup>2</sup> × (1.79)<sup>2</sup> / (0.569)<sup>2</sup>

Sample size (n) = 3.84 × 3.204/ 0.324

Sample size (n) = 37.972

Hence calculated sample size was 37.972 with 10% of attrition sample size will be 42 but considering the



availability of subjects at research setting the sample size was increased 50 i.e Nursing Officers .

#### Data collection Instrument:

- 1) Self-Structured knowledge questionnaires
- 2) Observation checklist

#### Reliability of data collection instruments:

The Reliability co-efficient of correlation of the knowledge questionnaires and check list obtained by split off method and the r value were found to be 0.82 and 0.81 since, the reliability co-efficient of R is more than 0.7. The knowledge questionnaire and check list were found to be more reliable. Hence investigator has decided to use the same tool in main study for data collection regarding nesting and swaddling.

#### Data collection Procedure:

The formal permission obtained by the principal of Sajjalashree institute of nursing sciences Navanagar Bagalkot. Then permission was obtained from the Principal SNMC AND HSK HOSPITAL RESEARCH CENTER Navanagar Bagalkot the data collection done from 27-06-2023. The investigator given self-introduction explained the purpose of data collection to the subjects and subject's willingness to participate in the study was ascertained. The subject was assured the anonymity and confidentiality of the information provided by them. knowledge questionnaires and check list were administered to nursing officers to assess their knowledge and skills regarding the nesting and swaddling for preterm neonates. Each participant has taken around 30 minutes to complete questionnaires and checklist.

#### Ethical clearance:

Ethical clearance certificate was obtained from institutional ethical clearances committee B.V.V.S Sajjalashree Institute of Nursing Sciences Navanagar Bagalkot, (ref No BVVSSIONS- IEC/ 2022-23/1001 dt:12-08-2022) written consent of participants obtained from participants before data collection.

#### Statistical analysis:

The data was analysed using (SPSS) for version 25 The obtained data was entered in MS excel sheet. the data was edited for accuracy and completeness. were revised, coded, tabulated, and presented using descriptive statistics in the form of frequencies and percentage for qualitative variables, and mean and standard deviations was used for quantitative variables. The inferential statistical measures were used calculate Chi square and paired t- test tests were used for test of

significance. The results were accepted to be statistically significant for  $p < 0.05$ .

	AGE IN YEARS	FREQUENCY	PERCENTAGE
1	A 20-25YEAR	26	52%
	B 25-30 YEAR	16	32%
	C 30-35 YEAR	5	10%
	D 35-40YEAR	3	6%

	GENDER	FREQUENCY	PERCENTAGE
2	A MALE	18	36%
	B FEMALE	32	64%

	MARRITAL STATUS	FREQUENCY	PERCENTAGE
3	A UNMARRIED	41	82%
	B MARRIED	9	18%
	C WIDOWER	1	2%

	EDUCATIONAL STATUS	FREQUENCY	PERCENTAGE
4	A G N M	28	56%
	B B.SC NURSING	19	38%
	C M.SC NURSING	3	6%
	D P. HD NURSING	0	0

	FAMILY MONTHLY INCOME	FREQUENCY	PERCENTAGE
5	A BELOW 10000	8	16%
	B 10001-20000	28	56%
	C 20001-30000	8	16%
	D 30001-40000	2	4%
	E ABOVE 40001	3	6%

	YEAR OF WORKING EXORIENCE IN NICU	FREQUENCY	PERCENTAGE
6	A BELOW 1YR	5	10%
	B 1-5 YR	42	84%
	C 6-10YR	1	2%
	D ABOVE 10YR	2	4%

	COURSE ATTENDED	FREQUENCY	PERCENTAGE
7	A YES	6	12%
	B NO	44	88%



**4.RESULT: Part I: Description of Socio demographic profile of Nursing officer**

**N=50**

**Part II: Comparison Knowledge of nursing officers regarding nesting and swaddling for preterm neonates.**

**N=50**

Level of Knowledge scores	Pre test		Post test	
	N	%	N	%
Very good	0	0%	26	52%
Good	0	0%	24	48%
Average	39	78%	0	0%
Poor	11	22%	0	0%
Very poor	0	0	0	0%
Total	50	100%	50	100%

The percentage wise distribution of the subjects according to their level of knowledge before the administration of learning package majority were 78% of the average knowledge and 22% have poor knowledge. After administration of learning package majority were 52% very good knowledge and 48% were good knowledge.

**Part III: Comparison of skill level scores regarding nesting for preterm neonates**

**N=50**

Levels of skills	Category	Classification of respondents			
		Pre test		Post test	
		N	%	N	%
Inappropriate	0-9	5	100%	0	0
Moderate	10-19	0	0	7	14%
Appropriate	20-28	0	0	43	86%
		5	100%	50	100%
		0	0%	0	0%

The percentage wise distribution of the subjects according to their level of skills regarding nesting is prior to the administration of learning package. to subjects' skills regarding the nesting majority of 50 (100%) of subjects were the inappropriate skill regarding nesting procedure. After the administration of learning package to subjects' skills regarding the nesting there was marked increase skills regarding nesting least 14% of moderate skill and majority of 86% were the appropriate skills.

**Part IV: Comparison skill scores regarding swaddling for preterm neonates.**

**N=50**

Level of skills	Category	Classification of respondents			
		Pre test		Post test	
		N	%	N	%
INAPPROPRIATE	0-7	0	0	0	0
MODERATE	Aug-15	3	72%	0	0
APPROPRIATE	16-24	1	28%	5	100%
		4	0	0	0
		5	100%	5	100%
		0	0	0	0

The percentage wise distribution of the subjects according to their level of skills regarding swaddling that prior to the administration of learning package to subjects' skills regarding the swaddling showed that majority of (72%) were moderate skills and (28%) appropriate have skill regarding swaddling. After the administration of learning package to nursing officers' skills regarding the swaddling there is marked increase (100%) subjects' appropriate knowledge.

**Part V: Effectiveness of implementation of learning package on knowledge of nursing officers regarding nesting and swaddling for preterm neonates.**

**N=50**

Aspect	Knowledge score				Paired t-test
	Mean	SD	Mean %	Mean D	
Pre test	11.38	1.794	22.76%		30.75
Post test	19.56	1.214	39%	8.18	

P<0.05\* significant

The comparison of pretest and post-test knowledge scores. The mean and SD of post-test knowledge score 19.56±1.214 was significantly higher than the mean and SD of pretest knowledge scores 11.38±1.794 and paired t test value is 30.75. Hence it indicates that the learning package was effective in enhancing the knowledge of nursing officers on nesting and swaddling for preterm neonates. Null hypothesis was rejected and research hypothesis is accepted.



**Part VI:** Effectiveness of implementation of learning package on skills of nursing officers regarding nesting for preterm neonates. **N=50**

Aspects	Skill of nesting				Paired t-test
	Mean	SD	Mean %	SD%	
Pre test	5.34	1.745	10.68%	3.49%	45.72
Post test	21.1	1.568	42.2%	3.136%	

\* Significant at 0.05 level, df=49 (1.645)

The comparison of pre-test and post-test skills scores of subjects regarding nesting is mean and SD post- test is 21.1±1.568 was significantly higher the mean and SD of pretest is 5.34±1.745 and paired t test value 45.72. Hence it indicates that the learning package was effective in enhancing the skills of subjects on nesting procedure for preterm neonates. Null hypothesis was rejected and research hypothesis is accepted.

**Part VII:** Effectiveness of implementation of learning package on skills of nursing officers regarding swaddling for preterm neonates. **N=50**

Aspects	Skill of swaddling				Paired t-Test
	Mean	SD	Mean (%)	SD%	
Pre test	14.3	2.305	28.6%	4.61	18.9
Post test	20.66	0.917	41.32%	1.834	

\* Significant at 0.05 level, df=49 (1.645)

The comparison of pretest and post-test skills scores of swaddling showing that post-test mean and SD is 20.66±0.917 was significantly higher the mean and SD of pretest is 14.3±2.305 and paired test value is 18.9. Hence it indicates that the learning package was effective in enhancing the skills of subjects on swaddling for preterm neonates' procedure. Null hypothesis was rejected and research hypothesis is accepted.

**Part VIII: Association between post-test knowledge and skills scores and selected socio demographical variable**

SL NO	SOCIO DEMOGRAPHIC VARIALE	DF	CHI SQUARE	TABLE VALUE
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1	AGE	1	2.41	3.84
2	GENDER	1	1.38	3.84
3	MARRITAL STATUS	1	1.02	3.84
4	EDUCATIONAL STATUS	1	3.62	3.84
5	FAMILY MONHLY INCOME	1	3.31	3.84
6	YEAR OF WORK EXPERIENCES IN NICU	1	5.22 (*)	3.84
7	COURSES ATTENDED	1	0	3.84

Significant => at 0.05 level, df =49 (1.645)

**5.Discussion:**

An evaluative study to assess the level of knowledge regarding nest making and swaddling for preterm neonates among nursing officers, to assess the level of skills regarding nest making and swaddling for preterm neonates among nursing officers' hospital and research center Navanagar Bagalkot. A similar study was conducted by Young J et al. A descriptive, cross-sectional survey design aimed to describe the knowledge, attitudes and practices of child health nurses (CHN) relating to the advantages and disadvantages of wrapping<sup>5</sup>. A similar descriptive cross-sectional exploratory survey to assess the self-reported knowledge, education, and practices related to hip-healthy swaddling of newborns among nurses, The study concluded that illustrate a gap in knowledge about hip-healthy swaddling among the maternity nurses who participated in this survey and a need for further education<sup>6</sup>. A similar quasi-experimental study to evaluate the effect of intervention program about evidence based nursing practices of developmental supportive care for preterm neonates on knowledge and practices of the internship nursing students as regards care of neonates. The result concluded that application of DSC intervention program has a positive effect on the internship students' knowledge, practices and increased level of their perception regarding DSC in NICU<sup>7</sup>. A similar descriptive cross sectional study is to develop and apply a neonatal supportive positioning (NSP) training video program for premature infants, using a position support mat for nurses in neonatal intensive care units (NICUs), and to verify its effect on nurses' performance. the result concluded that our NSP training video program increased nurses' NSP knowledge and performance. Continuous training NICU nurses on NSP,



using a standardized training video program, can help improve the care of premature infants<sup>8</sup>.

A similar experimental research study was conducted to assess the pain, stress, comfort and salivary cortisol and melatonin values in nesting positions during the heel lance procedure in premature infants at the NICU. The study concluded that nesting in the prone position has a pain reducing effect, enhancing comfort and reducing stress in premature infants<sup>9</sup>. A similar evaluate study to assess the whether lying in a nest affects the posture and spontaneous movements of healthy preterm infants. The result showed that a nest promotes a flexed posture of the limbs with adduction of shoulders, facilitates elegant wrist movements and movements towards and across the midline and reduces abrupt movements and frozen postures of the arms and leg<sup>10</sup>. A similar evaluate study was conduct to assess the impact of swaddling on tactile manual abilities in preterm infants. The study concluded that swaddling preterm infants during sensory learning did not influence the tactile memorization process but would improve the use of their attentional resources. Swaddling seems to provide favorable conditions for sensory learning by improving attention to tactile stimuli<sup>11</sup>. A similar randomized control design was used to compare the effect of swaddling to standard positioning on neuromuscular development in very low birth weight (VLBW) infants (< 1,250 gm). The results demonstrated that swaddled infants had higher total scores on the MNNE as compared to infants with standard positioning. Swaddling appears to be a positioning technique that can enhance neuromuscular development of the very low birth weight infant<sup>12</sup>.

### Conclusion and Recommendation:

After obtaining the result for the present study the researcher noticed that there was significant difference between knowledge and skills after the administration of leaning package. Nursing officer's need to know the different skills regarding the nesting and swaddling procedure for preterm neonates.

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