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RESEARCH ARTICLE

COMPARE THE EFFECTIVENESS OF NESTED VERSUS SWADDLED POSITIONING ON SELECTED BEHAVIOR AMONG VERY LOW BIRTH WEIGHT NEONATES IN SELECTED HOSPITALS, SALEM

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ABSTRACT

Nested and Swaddle positioning among very low birth weight neonates can increase time in quiet sleep and decrease time spent crying or in active sleep. The Aim of our study were(i) To assess and compare the pre test and post test level of nested versus swaddled positioning on selected behavior among very low birth weight neonates in study group I and II and control group.(ii) Determine the effectiveness of the nested versus swaddled positioning on selected behavior among very low birth weight neonates in study group I and II and control group.(iii) To Associate post –test level of nested versus swaddled positioning on selected behavior among very low birth weight neonate with their demographic variables in study group I and II and control group. Quantitative approach and quasi-experimental to comparative group with wait list control group design used, 90 sample collected by Non- Probability Purposive sampling technique. The pretest and posttest done by using Brazelton (1982) Neonatal Behavioral Assessment Scale the reliability of the tool value was r=0.86.Nested versus swaddle positioning The analyzes depicted that the swaddle positioning effective on very low birth weight neonates with p=0.001 and association found in study group I and II for weight of the neonates, gestational weeks of the neonates in control group there is no association. The result of the study concluded that swaddle positioning was highly effective in improving the good behavior pattern among very low birth weight neonates. Therefore the investigator felt that knowledge gained can be achieved by nested versus swaddle positioning among very low birth weight neonates.

INTRODUCTION

Every family looks forward to the birth of a healthy newborn. It is an exciting time with so much to enjoy. In some cases, unexpected difficulties and challenges occur along the way. Some newborn are considered high risk. This means that a newborn has a greater chance of complication because of condition that occur during fetal development, pregnancy condition of the mother or problems that may occur during labour and birth. Regardless of whether labor is long or short, whether it is hard or easy whether a baby is born vaginally or by cesarean, most parents recall the first hours and days after birth as crystal-clear images surrounded by haze. Falling into the normal range for size is a good start for an infant, suggesting good health. But, each baby is different, and evens those who fall a bit outside the normal range are usually fine. The length of the average newborn baby is from 47.5 to 53.75 cm and about two thirds of all full term infants weigh between 2700 and 3850 gm.

Back ground of the study

According to WHO (World Health Organization) Low birth weight (LBW) has been defined as weight at birth less than 2500 g.

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The global prevalence of LBW is 15.5%, which means that about 20.6 million such infants are born each year, 96.5% of them in developing countries. There is significant variation in LBW rates across the United Nations regions, with the highest incidence in South-Central Asia (27.1%) and the lowest in Europe (6.4%)(World Health Organization, 2005**)** According to United state Department of Health and Human Services' report indicates the incidence and prevalence of Low birth weight (< 2500g) was noted in 8.3% of all births in the United States in 2006, and very low birth weight was noted in 1.48% of all births; approximately 63,137 US births were reported in 2006. The statistics are staggering, According to the march of Dimes, more than 470000 infants born prematurely in the United States every year and rate of premature births has increased to an estimated 29 percent between 1981 to 2002.These babies are often too tiny and sick to go home, since their nutritional and health needs are different from other infants and they are prone to get diseases or infections (United states report on, 2006). According to UNESCO report Low birth weight is a widely used and much studied marker of infant health. It is well measured, reliably recorded, and readily available from vital statistics files and many other data sets. Birth weight is often categorized as very low (less than 1,500 grams, or about 3.3 pounds), low (less than 2,500 grams), or normal (2,500 grams or more). Further distinctions include extremely low (less than

1,000 grams) and moderately low (1,500–2,499 grams) birth weight. Births can also be characterized by gestational age: very preterm (less than 32 weeks), preterm (less than 37 weeks), and term (37 weeks or more) with the corresponding rates of births in the United States in 2000. Babies considered small for gestational age (SGA) or growth retarded are typically below the 10th percentile in sex-specific birth weight for gestational age. All low birth weight babies are preterm or growth retarded (they can be both) and virtually all very low birth weight babies are preterm (UNESCO, 2007). In India, the number of neonates suffering from low birth weight neonates is in the range of 10-12%. Prevalence rate of 20-33% of low weight below the 28 weeks of birth of babies have been reported in India, and among them low weight neonates constitute 1 in 10 children**.**The incidence of low birth weight neonates has increased by more than 300%. Various studies have put the prevalence around 6-8% of the population. The U.S. infant mortality rate was 6.14 infant deaths per Objectives—This report presents 2010 period infant mortality 1,000 live births in 2010, 4% lower than the rate of 6.39 in 2009**.**The statistics from the linked birth/infant death data set (linked file) by number of infant deaths was 24,572 in 2010, a decline of 1,836 infant maternal and infant characteristics. The linked file differs from the deaths from 2009. From 2009 to 2010, the infant mortality rate declined 8% for non-Hispanic black mothers to 11.46, and 3% for non-Hispanic white mothers to 5.18 in 2010 (Hyattsville, 2010**)**. Asian or Pacific Islander mothers had the lowest rate in from 2009 to 2010, the neonatal mortality rate declined by 3% to 4.05 neonatal deaths per 1,000 live births, while the postneonatal mortality rate declined 5% to 2.10. In 2010, infants born at 37–38 weeks of gestation (early term) had infant mortality rates that were 62% higher than those born at 39–41 weeks of gestation. For multiple births, the infant mortality rate was 25.41, almost five times the rate of 5.45 for singleton births. The three leading causes of infant death—congenital malformations, low birth weight, and sudden infant death syndrome—accounted for 46% of all infant deaths. In 2010, 35.2% of infant deaths were preterm-related (Indian newborn report on, 2007). Birthing is a traumatic experience for both, the mother and the baby. Apart from the discomfort and trauma associated with the process of delivery, the baby is suddenly thrust into a world of bright lights, loud sounds and cold environment. The baby cannot tolerate environmental insults and stresses, which may adversely affect their neuromotor development.

The babies are being handled as ―objects" without any concern either for their comfort or for their stimulation. The intensive care of the new born babies has become mechanical or ―robotic‖ and ―stereotyped‖. Instead of being flexible and individualized. It's a pity that technological advances have dehumanized the care of new born babies. It has been recently realized, that there is a need to have a synthesis of ―art and science" of neonatal care in order to provide holistic care to newborn babies. Hi-tech care should be provided, but comfort of the baby should not be ignored. Babies should be reared in neonatal intensive care unit (N.I.C.U), which should simulate the ecology of the womb, to ensure maximum comfort to the baby. The babies should be handled with gentle touch, love and compassion and the nurse should feel ―connected‖ and ―tuned‖ to the babies under their care. All efforts should be made to provide babies with as comfortable positioning as possible, although it's impossible to achieve in-utero comfort levels and cushioning. Rough handling may lead to hypoxemia and sudden elevation of blood pressure with risk of development of intra-ventricular hemorrhage, as per evidences. Non-pharmacological pain relief techniques include ―environmental measures" such as lowering the lighting & noise levels, playing soft music & following minimal handling protocol. Comfort measures include nesting, swaddling ,positioning strategies & promoting rest. "Nesting and swaddle positioning" is a comfort measure, that simulates in-utero feeling of lack of space and makes the baby less jittery or prone to startle. The infant can be positioned prone or on the side with flexed extremities by providing a ―nest‖ with a rolled blanket. The upper part of the baby's body is slightly raised resembling a position as he is ―cradled in your arm (http://www.natures). Robertson *et al* conducted a randomized study on, ―Retinopathy of prematurity (ROP) screening, stress related responses, & the role of nesting‖. The findings of the study revealed that the distress caused by ROP screening was significantly less for the nested group as compared to non-nested group for both movement activity($p<0.01$) & crying($p<0.01$) (Robertson, 1997**)**. Bertoncelli conducted a study on posture and movement in healthy preterm infants in supine position in and outside the nest. Ten healthy preterm infants underwent serial video recording in the supine position, when lying in a nest and outside it, at three ages 30-33 weeks postmenstrual age (PMA) (early preterm), 34-36 weeks PMA (late preterm) and 37-40 weeks PMA (term). The nest was shell-shaped, made by applied two rolled blankets in a form of an oval. Posture was assessed both before and after general movements by scoring the predominant postural pattern. Movements towards and across the midline, elegant wrist movements, abrupt hand and or limb movements, rolling to side and frozen postures of the arms and legs were assessed during four general movements. All data relating to motor and posture items were normalized into frequencies of events per minute because the general movements varied in duration. Finding revealed that nesting promoted 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 legs(Bertoncelli, 2006**)**

Nesting facilitates transformation of sleep pattern from erratic disturbed spells, to deep peaceful nights and contented days, thus conserving energy (may be lost in crying) and minimizing weight loss. Again the flexed posture reduces the surface area exposed to the environment, minimizing heat loss which prevents huge weight loss (http://www.naturesnest.co.uk/html/ nest/html). Swaddling is a traditional custom in which infants are wrapped tightly but comfortably in sheets, blankets or similar objects. The limbs are fixed more or less tightly to their body such that the children no longer have complete freedom of movement. Prior to the 18th century, swaddling was a universal care method. However, the custom became increasingly forgotten in Europe in the period leading up to the Industrial revolution. Swaddling seems to be a promising method of care which promotes quiet sleep in infants. Due to this, our study center has been using a swaddling sleeping bag for putting newborns and infants to bed for approximately two years as an alternative to the traditional sleeping bag which allows their arms to move freely. This uses flexible straps to fix the arms of the infants to their body, thus creating swaddling conditions. The caregivers have since been unanimous in reporting an

apparently more peaceful and quieter sleep pattern. Although the number of studies on this topic is increasing, the mechanisms and the effects on infant sleep are largely unclear. The aim of the present study was a polysomnographic comparison of the sleep patterns in infants under swaddling and sleeping bag conditions by way of a prospective controlled randomized study (www.mayoclinic.org/healthy-lifestyle/infant ...swaddle).

During the investigator's role as a bedside nurse in a neonatal intensive care unit, it was observed that nesting intervention had therapeutic effects on the neonates, with significant findings of a peaceful sleep with minimal arousal states, maintenance of acceptable levels of physiologic parameters (temperature, pulse, respiration, blood pressure, & pain), decreased rate of weight loss, & maintenance of acceptable neurobehavioral patterns, as compared to non-nested babies. The extent of research activities within the context of "nested and swaddle" intervention for neonates is still in infancy stage, with only a handful of studies under its shade. Hence the need has evolved, to determine the effectiveness of nesting and swaddle positioning intervention upon the very low birth weight neonates.

Objectives of the study

- To assess and compare the pre test and post test level of nested versus swaddled positioning on selected behavior among very low birth weight neonates in study group I and II and control group.
- Determine the effectiveness of the nested versus swaddled positioning on selected behavior among very low birth weight neonates in study group I and II and control group.
- To associate post –test level of nested versus swaddled positioning on selected behavior among very low birth weight neonate with their demographic variables in study group I and II and control group.

Research Hypotheses

RH1-There is a significant difference between pre test and post test level of nested versus swaddled positioning on selected behavior among very low birth weight neonates in study group I and II and control group.

RH2 -There is a significant association between the post-test level of nested versus swaddled positioning on selected behavior among very low birth weight neonates with selected demographic variables in study group I and II and control group.

RESEARCH METHODOLOGY

Research Approach

A quantitative approach was used for a study to compare the effectiveness of nested versus swaddle positioning on selected behavior among very low birth weight neonates.

Research Design

The research design adopted in this study was quasi-experimental to comparative group with wait list control group design.

Group	Pretest	Intervention	Post test
Neonates in study group I (nested)	O1	X1	O_2
Neonates in study group –II (swaddle)	O1	X2	O_2
Control group	O1	-	O_2

O1: pre-test level of selected behavior of very low birth weight neonates
X1: Nested positioning on very low birth weight neonates
X2: swaddled positioning on very low birth weight neonates
O2: post-test of the selected behavior of very low birth weight neonates.

Variables of the study

The Independent variable was nested versus swaddle positioning. The Dependent variable was selected behavior of neonates. the Demographic variables were age, gender, domicile, number of sibling. The Clinical variables Gestational week, weight of neonates.

Research Setting

Study was conducted at 6 private hospital in Salem.(Sri Gokulam Hospital, S Palaniandi Mudaliyar Memorial Hospital,Aishwaryam Speciality Hospital,S.K.S Hospital, Salem Polyclinic (K.N.Row) Hopital, Pranav Hospital) each hospital have 300 bedded with all facilities for intensive neonatal care which has 20 beds.It has all the specialities, providing inpatient and outpatient services. Approximately total sick case for each hospital 20 neonates (30 study group-I, 30 study group-II, 30 control group) so the hospital was selected to attain sample within the stipulated period of time.

Sample

The study sample comprise of all the very low birth weight neonates who full fill the inclusion criteria.

Sample Size

The neonates who were fulfilling the inclusion criteria out of which 30 of them were allotted to each study group I, II and remaining 30 in control group. The sample size was calculated using power analysis by using the following formula

X=Z(c/100)2r(100-r); n=N x/((N-1)E2 + x); E=Sqrt((N - n)x/n(N-1))

Where N is the population size, r is the fraction of responses and Z(c/100) is the critical value for the confidence level c. The assumed sample size is for 95 % Confidence interval is 27. Considering 10% extra the investigator selected 30 samples for each study I&II and control group.

Sample Technique

Non probability purposive sampling technique was used to select the samples for the present study.

Criteria for selection of sample

Inclusion criteria

1. Very low birth weight neonates who are in the age group of birth to 15 days.
2. Very low birth weight neonates who are delivered ether normal delivery or LSCS.
3. Very low birth weight neonates who are in the weight of less than 1500 grams.

Exclusion criteria

1. Very low birth weight neonates undergoing phototherapy for treatment of jaundice.
2. Very low birth weight neonates who were critically ill.
3. Very low birth weight neonates who are having congenital anomalies

Development description and interpretation of tool

The tool was developed with an extensive review of literature, discussion with professional experts and a standardized tool was used.

Section-A

Structured questionnaire to assess the demographic variables such as age, gender, domicile, number of sibling and to assess the clinical variables such as gestational week, weight of the neonates.

Section-B

Brazelton (1982**)** Neonatal Behavioral Assessment Scale. It consist of 6 item used to identify behavior pattern of very low birth neonates.

Original scoring for the scale: six point scale

Score	Level of behavior	Percentage
1-2	Poor behavior	16-33%
3-4	Average behavior	34-66%
5-6	Good behavior	67-100%

Description of the intervention

Positioning refers to comfortable rest of the neonates. Parturient neonates in nested positioning to the application of snug and secure boundary or an enclosure using a rolled blanket, around the immediate physical environment of the neonate with help of rolled blanket on both sides of the neonates to keep the neonates for 1 hour which is repeated for 3 times a day in a week for study group-I. Parturient neonates swaddled positioning with help of the blanket to keep elbow, shoulder, hip, and knee joint in flexion for 1 hour which is repeated for 3 times a day in a week for study group-II.

Reliability of the tool

Reliability of the tool was established by test retest method. The r value was r=0.86. Hence it was considered and feasible for proceeding main study

Ethical considerations

The proposed study was conducted after the approval of the Dissertation committee and Dean of SRM College of nursing, SRM University, Kattankulathur, Kancheepuram district. To execute the study the researcher obtained official written permission from was obtained from the managing director and neonatology of the selected hospital in Salem.(Sri Gokulam Hospital, S.Palaniandi Mudaliyar Memorial Hospital, Aishwaryam Specialty Hospital, S.K.S Hospital, Salem Polyclinic Hospital, Pranav Hospital,).

Table 1. Frequency and percentage distribution of demographic variables of very low birth weight neonates in study group I, II and control group

N=90

Demographic variables		Group						Total	Chi square
		Study group-I (nested positioning) n=30		Study group-II (swaddle positioning) n=30		Control group n=30			
		n	%	n	%	n	%		
Age	At birth- 5 days	23	76.7	16	53.3	13	43.3	52	2=7.28 p=0.12
	6days-10 days	4	13.3	9	30.0	11	36.7	24	
	11-15 davs	3	10.0	5	16.7	6	20.0	14	
Sex	Male	20	66.7	20	66.7	20	66.7	60	2=0.00 p=1.00
	Female	10	33.3	10	33.3	10	33.3	30	
Domicile	Urban	19	63.3	19	63.3	21	70.0	65	2=3.10 p=0.21
	Rural	11	36.7	11	36.7	9	30.0	25	
Number of sibling	No	21	70.0	21	70.0	18	60.0	60	2=0.90 p=0.63
	One	9	30.0	9	30.0	12	40.0	30	
	Two	0	0	0	0	0	0	0	
	Three	0	0	0	0	0	0	0	
	More than 3	0	0	0	0	0	0	0	
Weight of the neonates	Less than 700 grams	0	0	0	0	0	0	0	2=5.33
	701-899 grams	2	6.7	1	3.3	1	3.3	4	
	900-1109 grams	5	16.7	7	23.3	5	16.7	17	p=0.50
	1100-1199 grams	15	50.0	8	26.7	10	33.3	33	
	1200-1499 grams	8	26.7	14	46.7	14	46.7	36	
Gestational weeks	28-30 weeks	0	0	0	0	0	0	0	2=1.51 p=0.46
	31-33 weeks	0	0	0	0	0	0	0	
	34-36 weeks	7	23.3	6	20.0	10	33.3	23	
	37-38 weeks	23	76.7	24	80.0	20	66.7	67	

Table 2. Frequency and percentage distribution of pre test level of Nested versus Swaddled positioning on selected behavior among very low birth weight neonate in study group I and II, control group

N=90

Behavior pattern Pretest	Group						Chi- square test
	Study group- I (Nested positioning) n=30		Study group- II (Swaddle positioning) n=30		Control group n=30		
	n	%	n	%	n	%	2=6.79 p=0.14
Poor behavior pattern	27	90.0	28	93.3	25	83.3	
Average behavior pattern	3	10.0	2	6.7	5	16.7	
Good behavior pattern	0	0	0	0	0	0	

NS-Not Significant

Table 3. Frequency and percentage distribution of post test level of Nested versus Swaddled positioning on selected behavior among very low birth weight neonate in study group I and II, control group

N=90

Behavior pattern Pretest	Group						Chi- square test
	Study group-I (Nested positioning) n=30		Study group-II (Swaddle positioning) n=30		Control group n=30		
	n	%	n	%	n	%	2=95.66 p=0.001 ***
Poor behavior	0	0	0	0.0	23	76.7	
Average behavior	24	80	5	16.7	6	20	
Good behavior	6	20	25	83.3	1	3.3	

*Significant at $p \leq 0.05$ ** highly significant P=0.01 ***Very highly significant P=0.001

Table 4. Mean and Standard deviation of pre and post test level of Nested versus Swaddled positioning on selected behavior among very low birth weight neonates between study group I and II and control group

N=90

	Group						One way Analysis of variance F-test
	Study group-I (Nested positioning) n=30		Study group-II (swaddled positioning) n=30		Control group n=30		
	Mean	SD	Mean	SD	Mean	SD	
Pretest	1.20	.61	1.33	.61	1.23	.57	F=0.40, P=0.66
Posttest	3.87	.68	5.63	.72	1.90	.76	F=201.67, P=0.001***

NS - Not Significant *Significant at $p \leq 0.05$; ** Highly significant P=0.01 ***Very highly significant P=0.001

Table 5. Mean and Standard deviation of pre test and post test level of Nested versus Swaddled positioning on selected behavior among very low birth weight neonates in study group I and II and control group

N=90

Groups	Behavior pattern score				Mean difference	Paired t-test
	Pretest		posttest			
	Mean	SD	Mean	SD		
Study group-I (Nested positioning)	1.20	.61	3.87	0.68	2.67	t=18.20; P=0.001 ***
Study group-II (swaddle positioning)	1.33	.61	5.63	0.72	4.30	t=26.85; P=0.001 ***
Control group	1.23	.57	1.90	0.76	0.67	t=1.80; P=0.07

NS - Not Significant; Significant at $p \leq 0.05$; Highly significant P=0.01; Very highly significant P=0.001

Table 6. Mean and Standard deviation of pre test level of Nested versus Swaddled positioning on selected behavior among very low birth weight neonates between study group I and II and control group

N=90

Groups	Pretest Behavior score				Mean difference	Independent t-test
	Control group		Study group			
	Mean	SD	Mean	SD		
Control vs study group-I	1.23	0.57	1.20	0.61	0.03	t=0.20; P=0.84
Control vs study group-II	1.23	0.57	1.33	0.61	0.10	t=0.66; P=0.51
Study group-I vs study group-II	1.20	0.61	1.33	0.61	0.13	t=0.70; P=0.50

NS-Not Significant

Table 7. Mean and Standard deviation of posttest level of Nested versus Swaddled positioning on selected behavior among very low birth weight neonates between study group I and II and control group

N=90

Groups	Posttest Behavior score				Mean difference	Independent t-test
	Control group		Study group			
	Mean	SD	Mean	SD		
Control vs study group-I	1.90	0.76	3.87	0.68	1.97	t=10.58; P=0.001***
Control vs study group-II	1.90	0.76	5.63	0.72	3.73	t=19.51; P=0.001***
Study group-I vs study group-II	3.87	0.68	5.63	0.72	1.76	t=9.73; P=0.001***

*Significant at $p \leq 0.05$; ** Highly significant P=0.0; ***Very highly significant P=0.001

Table 8. Effectiveness of the nested versus swaddle positioning on selected behavior among very low birth weight neonate with tsheir demographic variables in study group-I, II and control group

N=90

Groups	Maximum score	Behavior score				Mean gain score	% of gain
		Pretest		Posttest			
		Mean	SD	Mean	SD		
Control	6	1.23	.57	1.90	0.76	0.67	11.2%
Study group-I (Nested positioning)	6	1.20	.61	3.87	0.68	2.67	44.5%
Study group-II (swaddle positioning)	6	1.33	.61	5.63	0.72	4.30	71.6%

Table 9. Association of post test level of Nested positioning on selected behavior among very low birth neonates with their demographic variables in study group-I

n=30

Demographic variables		Level of posttest						Total	Chi square test
		Poor behaviour		Average behaviour		Good behaviour			
		n	%	n	%	n	%		
Age	At Birth - 5 days	0	0	17	73.9	6	26.1	23	2=2.28 p=0.31
	6 -10 days	0	0	4	100.0	0	0	4	
	11 -15 days	0	0	3	100.0	0	0	3	
Gender	Male	0	0	18	90.0	2	10.0	20	2=3.75 p=0.06
	Female	0	0	6	60.0	4	40.0	10	
Domicle	Urban	0	0	16	84.2	3	15.8	19	2=0.57 p=0.44
	Rural	0	0	8	72.7	3	27.3	11	
Number of sibling	No	0	0	15	71.4	6	28.6	21	2=3.21 p=0.07
	One	0	0	9	100.0	0	0	9	
	Two	0	0	0	0	0	0	0	
	Three	0	0	0	0	0	0	0	
	More than 3	0	0	0	0	0	0	0	
Weight of the neonates	701-899 grams	0	0	2	100.0	0	0.0	2	2=12.44; p=0.01**
	900-1109 grams	0	0	5	100.0	0	0.0	5	
	1100-1199 grams	0	0	14	93.3	1	6.7	15	
	1200-1499 grams	0	0	3	37.5	5	62.5	8	
Gestational weeks	28-30 week	0	0	0	0	0	0	0	2=3.85; p=0.05*
	31-33 weeks	0	0	0	0	0	0	0	
	34-36 weeks	0	0	7	100.0	0	0.0	7	
	37-38 weeks	0	0	17	73.9	6	26.1	23	

*Significant at $p \leq 0.05$; ** Highly significant P=0.01; ***Very highly significant P=0.001

Informed consent was obtained from the parents after explaining the nature and duration of the study. The investigators have explained the Intervention to the parents which is given to their neonates. Assurance was given to the individuals that each individual report will be maintainedconfidentially and they can withdraw from the study at any point of time.

Data collection procedure

The investigator has collected data for 4 weeks from 14-08-14 to 13-09-14. Formal approval was obtained from the managing

director and neonatology of the selected hospital. (Sri Gokulam Hospital, S Palaniandi Mudaliyar Memorial Hospital, Aishwaryam Speciality Hospital, S.K.S Hospital, Salem Polyclinic Hopital, Pranav Hospital). Investigator has selected 90 samples, which fulfilled the inclusion criteria, using purposive sampling technique. The 6 hospital were divided into study groupI-30, in 30 study group II and were allotted 30 in control group. Written consent was obtained from the from the parents of subjects. Pre-test was done by administering to assess the behavior pattern among very low birth weight neonates. Followed by pre test, to assess the behavior pattern among very low birth weight neonates. After intervention for nested versus swaddle positioning applied for 1 hour 3times per day. After one week of interval was done using the same tool. The investigator maintained good interpersonal relationship with the ward sister and mother throughout the study and there as adequate cooperation from mother. The investigator spent nearly 3 hour for each participant. The data was analyzed by using both descriptive and inferential statistics.

RESULTS

Section A: Assessment of Demographic variables of very low birth neonates in study group I,II and control group

Objective 1: To assess and compare the pre test and post test level of Nested versus Swaddled positioning on selected behavior among very low birth weight neonates in study group I and II and control group

Objective-2: Determine the effectiveness of the nested versus swaddle positioning on selected behavior among very low birth weight neonate with their demographic variables in study group-I,II and control group

Objective 3: To associate post test level of nested versus Swaddled positioning on selected behavior among very low birth weight neonate with selected demographic variables in control group

DISCUSSION

According to UNICEF,more than 2omillion infant born each year,weight less then 2.5 kg,accounting for 17% of all birth I developing world.Infant with low birth weight are at higher risk of dying during their early months and year.Those who survive are liable to have an impaired immune system and may suffer from higher incidence of chronic illness like diabetes and heart disease in later life.There is significant variation in the incidence of low birth weight across region.Consider the latest available statistics from the National Center for Health Statistics for 2011 in less than 2,500 grams 8.1% of total birth and less than 1,500 grams 1.4% of total birth(UNICEF, 2007). This study finding were supported by the study done by Kihara, *et al*. conducted a study on observed the effect of nested and swaddled positioning support in the prone position on heart rate, sleep distribution, and behavior state of very low birth weight infants (VLBWI). A total of 20 VLBWI who were born at a gestational age of 26.5 ± 4 weeks with a birth weight of 709 ± 207 g were studied at an average gestational age of 37.4 ± 0.6 weeks and a weight of 1590 ± 337 g. The study concluded that a prone position with nested and swaddled positioning support might facilitate sleep and heart rate stability compared to prone positioning alone in VLBWI (Kihara and Hadders-Algra, 2003**)**.

Bottos Michele conducted a study on the, ―effects of a containing position in a hammock versus the supine position on the cutaneous oxygen levels in prematur& term babies‖. The study was conducted upon 50 babies admitted to N.I.C.U, whereby 33 were males; 17 were females, gestational ages where 29-40 weeks (mean-33.9 weeks) & their birth weight lied in the range of 1060-4280 grams (mean 2.918kilograms).The 50 babies, were monitored for transcutaneous oxygen level both in supine & the containing position, within the hammock. The findings comprised of the following viz., Inhibition or shortening of dystonic phase counteraction on asymmetric tonic neck reflux (ATNR) and startle patterns following total flexion pattern/containment similar to the utero, stimulation of visual exploration of the environment through hand position of the baby in the midline, facilitation of hands in the middle pattern, one of the basic milestones of neuromotor development of the baby in the first year of life, & counteraction on possible regurgitation, due to the tilted position of hammock(Bottos Michele, 1984**)**.

Sizun J & JV Browne *et al.* conducted a study on Interventions involving positioning and handling in the neonatal intensive care unit: Early developmental care and skin-to-skin holding. Research on Early Developmental Care for Preterm Infants. Montrouge, France; John Libbey Eurotext. This is a review that covers prone positioning, SIDS, prone sleeping helps acquire motor milestones earlier , supine positioning does not prevent asymmetrical postures which increase functional asymmetries that prone positioning does not, head up positioning minimizes apnea and bradycardia for 6 hours swaddling, nesting, postural support, sling carrying, minimal handling, and KC. They conclude that ―skin to skin care has several aspects that support the infant‘s neurobehavioral development. It promotes stability of heart and respiratory function, it is a time when infant is protected from painful interventions, it offers opportunity for maternal proximity and interaction, and provides stimulation by skin to skin contact, stroking, and by the sound of the mother‘s body and voice Reported short term benefits are an increase in sleep time. Yet, there are few studies of medium-term or long-term effects of skin to skin holding on neuro development(Sizun and Browne, 2004**)**.

This study finding were supported by the study done by Chung-Park, Min *et al*. Conducted a study to assess the knowledge, opinions, and practices of infants' sleep positions and their association with demographics. A cross-sectional descriptive design was used to survey a convenience sample of military beneficiary parents being seen at a military treatment facility in the United States. A 19-item investigator-designed questionnaire was adapted using the "Safe Sleep Survey" developed by Indiana Perinatal Network. A sample of 161 parents responded. Forty percent were fully aware of the safe sleep facts for infants; 85% believed supine position was the safest; and 69% of those who believed supine position to be the safest also practiced their belief. Major reasons for nonsupine sleeping positions were for infant preference, comfort, and fear of choking; whereas supine position was for safety reasons.

Table 10. Association of post test level of Swaddle positioning on behavior pattern among very low birth neonates with their demographic variables in study group-II

n=30

Demographic variables		Level of posttest						Total	Chi square test
		Poor behavior		Average behavior		Good behavior			
		n	%	n	%	n	%		
Age	At Birth-5 days	0	0	3	18.8	13	81.3	16	2=3.81 p=0.14
	6 -10 days	0	0	0	0	9	100.0	9	
	11 -15 days	0	0	2	40.0	3	60.0	5	
Gender	Male	0	0	3	15.0	17	85.0	20	2=0.12 p=0.72
	Female	0	0	2	20.0	8	80.0	10	
Domicle	Urban	0	0	3	12.0	22	88.0	25	2=2.35 p=0.12
	Rural	0	0	2	40.0	3	60.0	5	
Number of sibling	No	0	0	4	19.0	17	81.0	21	2=0.28 p=0.59
	One	0	0	1	11.1	8	88.9	9	
	Two	0	0	0	0	0	0	0	
	Three	0	0	0	0	0	0	0	
	More than 3	0	0	0	0	0	0	0	
Weight of the neonates	701-899 grams	0	0	1	100.0	1	100.0	1	2=11.35 p=0.01**
	900-1109grams	0	0	3	42.8	4	57.2	7	
	1100-1199grams	0	0	1	12.5	7	87.5	8	
	1200-1499grams	0	0	0	28.6	14	100.0	14	
Gestational week	28-30 week	0	0	0	0	0	0	0	2=6.00 p=0.01**
	31-33 weeks	0	0	0	0	0	0	0	
	34-36 weeks	0	0	3	50.0	3	50.0	6	
	37-38 weeks	0	0	2	8.3	22	91.	24	

*Significant at p ≤ 0.05,** Highly significant P=0.01,***Very highly significant P=0.001

Table 10. Association of post test level of selected behavior among very low birth weight neonates with demographic variables in control Group

n=30

Demographic variables		Level of post-test						Total	Chi square test
		Poor behavior		Average behavior		Good behavior			
		n	%	n	%	n	%		
Age	At Birth - 5 days	9	69.2	3	23.1	1	7.7	13	2=7.70 p=0.10
	6 days -10 days	11	100.0	0	0	0	0	11	
	11 -15 days	3	50.0	3	50.0	0	0	6	
Gender	Male	15	75.0	4	20.0	1	5.0	20	2=0.52 p=0.77
	Female	8	80.0	2	20.0	0	0	10	
Domicle	Urban	15	71.4	5	23.8	1	4.8	21	2=1.18 p=0.55
	Rural	8	88.9	1	11.1	0	0	9	
Number of sibling	No	13	72.2	4	22.2	1	5.6	18	2=0.89 p=0.64
	One	10	83.3	2	16.7	0	0	12	
	Two	0	0	0	0	0	0	0	
	Three	0	0	0	0	0	0	0	
	More than 3	0	0	0	0	0	0	0	
Weight of the neonates	Less than 700 grams	0	0	0	0	0	0	0	2=5.92 p=0.43
	701-899 grams	1	100.0	0	0	0	0	1	
	900-1109grams	5	100.0	0	0	0	0	5	
	1100-1199grams	9	90.0	1	10.0	0	0	10	
	1200-1499grams	8	57.1	5	35.7	1	7.1	14	
Gestational week	28-30 week	0	0	0	0	0	0	0	2=4.56 p=0.10
	31-33 weeks	0	0	0	0	0	0	0	
	34-36 weeks	10	100.0	0	0	0	0	10	
	37-38 weeks	13	65.0	6	30.0	1	5.0	20	

*Significant at p ≤ 0.05; ** Highly significant P=0.01; ***Very highly significant P=0.001

Parents' opinions of safe position and their practices (p <0.001) were significantly associated, whereas knowledge on infant safe sleep facts (p= 0.611) was not. The results indicate that there is still a need for education. However, merely providing information to increase knowledge alone is not enough to change behavior, as attitude was an important factor for the behavior. Theory- based intervention associated with change in behavior will have an impact on parents' attitudes (Sahni *et al*., 2000).

Conclusion

Every very low birth weight neonate is the most good behavior. So it is the responsibility of every nurse to make comfortable and make it ease. Thus the investigator adopted nested versus swaddle positioning among very low birth weight neonates it improve the behavior pattern. The present study compared the comparative study to assess the nested versus swaddled positioning on selected behavior among very low birth weight neonates in selected hospitals, Salem.The result of the study revealed that, the comparison of post test mean and standard deviation of selected behavior among very low birth weight neonates in study group I and II was statistically significant at p=0.01 level. The parturient neonates who adopted in swaddle positioning had good behavior and score was less in nested positioning. The result of the study proved that swaddle positioning was more effective then nested positioning in very low birth weight neonates.

REFERENCES

Bertoncelli study on posture and movement in healthy preterm infants in supine position in and outsid the nest 2006; 21(1):23–32

Bottos Michele. The effects of a containing position in a hammock versus the supine position on the cutaneous oxygen level in premature and term babies in NICU. Italy. November 1984

http://www.natures nested and swaddle positioning.+co.uk/html/nest/html

http://www.naturesnest.co.uk/html/nest/html

www.mayoclinic.org/healthy-lifestyle/infant...swaddle.& nestedbean.com benefits-of-swaddling

Indian newborn report on 2007. http://www.articlescase.com

Kihara, H Hadders-Algra M. The Neuronal- study on observed the effect of nested and swaddled positioning support in the prone position on heart rate,sleep distribution, and behavior state 2003: 4(4): 475-483.

National Center for Health Statistics. User guide to the 2010 natality public use file. Hyattsville, MD. Available: //ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/DVS/natality/User Guide2010.pdf.

Robertson Retinopathy of prematurity screening, stress related responses, the role of nesting. *Br J Ophthalmol,* 1997. 81762–764.764.

Sahni, R., Schulze Curley, M.A., Thompson, J.E. and Arnold, J.H. 2000. The effects of early and repeated prone positioning in pediatric patients with acute lung injury. Chest, 118(1):156–63

Sizun, J. & Browne, J.V. Study on Interventions involving positioning and handling in the neonatal intensive care unit Paed, 2004. 93; p.779-785

UNESCO report on 2007. http://www.encyclopedia.com

UNICEF report on 2007. http://www.encyclopedia.com

United states report on 2006. http://www.encyclopedia.com

World Health Organization report on 2005. http://www. WHO.org

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