Assess the effectiveness of nesting on posture and movement in healthy preterm in Pravara Rural Hospital, Loni (Bk).

Mrs Savita Ingale*, Lt Col.V.Radha**, Mr.Vaibhav Bhosale***

Abstract

Background:*Posture refers to the positioning or alignment of the various parts of the body in relation to one another. Good posture can help to improve circulation and digestion enhances sleep and prevents cramping of internal organs. Newborn lies in nest feel safe and secure. This will not only help to feel safe but it will also encourage good posture and muscle movement and provide comfort positioning and also helps in the growth and development and easy adaptation to new environment, from intrauterine aquatic to external atmospheric environment.*

Objective: *The present study focused on the following objectives,1) To Assess the posture and movements in healthy preterm newborns in experimental and control group and 2) determine the effectiveness of nesting on posture and movements in healthy preterm newborns in experimental group*

Material and methods: *A experimental study with pretest posttest design with control group approach was undertaken in Pravara Rural Hospital, Loni. A total of 60healthy preterm newborns were selected with the help of random sampling technique to assess the posture and movement. The nurse investigator used structure standardized tool to collect data, whereby nesting was provided to experimental group 6 hours in a day for three days after pretest. Effectiveness of nesting was evaluated by conducting posttest. The data was analyzed with descriptive and inferential statistic wherever required.*

Result: *The result of the study revealed that nesting was effective as the posture score shows the improvement from average(57.5%)to good (92.75%)and movement score shows the improvement from moderate to severe discomfort (70%) to fullness of comfort(33.1%)pretest to pos test respectively. Paired test was calculated for posture and movement and found that there was significant difference between pre and post test score posture (t=4.87, pd" 0.001) movement(t=4.93, pd" 0.001).*

Conclusion: *Majority of healthy preterm newborn admitted in Pravara Rural Hospital, Loni, had significant improvement in posture and movement, after implementation of intervention. Hence intervention is effective in order to improve the posture and movement and selected physiological parameters bring a positive health out come in healthy preterm newborns.*

Key terms-*effectiveness, Nesting, Posture, Movement, Healthy preterm*

A newborn, or neonate, is a baby under 28 days of age. During these first 28 days of life, the newborn is at highest risk of dying due to early infection. It is thus crucial that appropriate feeding and care to be provided during this period, both to improve newborns chances of survival and to lay the foundations for a healthy life.

Preterm is defined as babies born alive before 37 weeks of pregnancy. There are sub-categories of preterm birth, based on gestational age: extremely preterm (<28 weeks),very preterm (28 to <32 weeks),moderate to late preterm (32 to <37 weeks).Preterm birth occurs due to variety of reasons. Most preterm births happen spontaneously, but some are due to early induction of labour or caesarean birth, whether for medical or non-medical reasons. Common causes of preterm birth include multiple pregnancies, infections and chronic conditions such as diabetes and high blood pressure; however, often no cause is identified. There could also be a genetic influence[1].

Among preterm newborns, approximately 60% are born at 34 to 36 weeks gestation,20% are born at 32 to 33 weeks gestation,15% are born at 29 to 31 weeks gestation,5% are born at less than 28 weeks gestation[2].In PRH,Loni, every year, 5,000 babies are born and about 900 (18%)of these babies are preterm

All healthy term newborns go through predictable periods of alertness and sleep that should be assessed and taken into consideration when performing comprehensive physical examination. Distressed newborns also progress through these stages but at a much slower rate[3].

Newborns posture is also informative. Normal flexion of extremities indicates good muscle tone. Lack of flexion is associated with hypotonicity, whereas excessive flexion usually suggests

*Clinical Instructor, ¨Principal and Professor , ***Lecturer,

Corresponding author:
Mrs Savita Ingale
Clinical Instructor
Pravara Institute of Medical Sciences(DU)
College of Nursing,Loni (BK) Tal.Rahata,Dist A.Nagar.

hyper tonicity[8].If only one arm is consistently straight and newborn does not flex that extremity, brachial plexus injury must be considered. The normal term newborn maintains some degree of flexion in all extremities whereas posture is less pronounced in preterm newborn. Poor head control is additional evidence of abnormally diminished muscle tone. Positioning preterm newborn correctly can make feel secure, improve breathing ability and strengthen muscles. Newborn babies with 'frog legs' have hips that are not positioned well and they fall out to side. These newborn may have dislocated hips, may find it difficulty to crawl, stand and walk later on. Preterm newborns limbs tend to flail around, instead of curling up as in older babies, so they need some help to lie in a position that is comfortable to helps muscle development and may feel more secure.

The healthcare team member should try to help newborn into a good position through 'containment'. This means limiting movement and giving something to push against to practise flexing muscles, similar to position that newborn would have naturally adopted in the womb during various stage of development . This is often done using rolled-up bedding, clean baby sheet, blanket which needs cushioning under bony parts such as hips and knees but make sure any fabric should not get close to face and impaired breathing[9].

During inspection, resting posture offers many health clues of a newborn. In a healthy full-term newborn the posture should be that of flexion10. Muscle tone, including amount of flexion or extension, should be assessed. Asymmetry of extremities, comparison of upper and lower extremities, and flaccid posture or contraction should be noted and further evaluated during examination. The newborns ease of movement should be noted throughout the assessment. The levals of fluidity and spasticity should be observed. A good clinical observer considers muscle tone acceptable and clinically stable if newborns elbows, hips, and knees are flexed and allow active extension of extremities. Normally return to gently flexed position after examination. Provided scoring for good flexion indicates healthy newborn. An attitude of flexion is necessary to obtain 2 points. A newborn with some flexion should be assigned 1 point. A limp newborn would receive zero points[11,12].

Posture refers to the positioning or alignment of the various parts of the body in relation to one another. Good posture can help to improve circulation and digestion enhances sleep and prevents cramping of internal organs. Proper posture can improve quality of life. correct positioning will help newborn to develop good posture and improve muscle control. Newborn lies in nest and cotton straps are pulled across newborn so that they feel safe and secure. If towel nesting is not available, nesting can be prepared by using clean baby sheets preferably soft ones. Roll sheets length way so that they are tubes. These are then placed around newborn so that they feel sometime secure around them on both sides and under feet. This will not only help to feel safe but it will also encourage good posture and muscle movement and provide comfort positioning[13].

Nesting enables the newborn to maintain a flexed posture, mimicking the position to a certain extent, which was present in foetal state in uterus. This is comforting to newborn and helps in the growth and development and easy adaptation to new environment, from intrauterine aquatic to external atmospheric environment.

Objectives

1) Assess the posture and movements in healthy preterm newborns in experimental and control group 2) Correlate physiological parameters in relation to posture and movements in and out of the nest 3) Determine the effectiveness of nesting on posture and movements in healthy preterm newborns in experimental group 4) Compare the posture and movement in healthy preterm newborns with selected physiological parameters temperature, heart rate, respiratory rate, oxygen saturation and weight

Materials and Methods

Experimental study, posttest only design with control group approachwas carried out to assess the effectiveness of nesting among healthy preterm newborns. The study was conducted in Pravara Rural Hospital ,Loni(Bk); it's a rural village of Ahmednagar Dist, Maharashtra state. The protocol of study was explained to the mother of babysand informed consent was obtained. The subjects were selected through sequential random sampling method.

A self structured interview schedule was prepared to collect profile of healthy preterm newborn babies while considering the study objectives.The standard structure questioner was used to assess the efficacy of nesting on posture and movement of healthy preterm newborn. The instrument used for this study was Infant Position Assessment Tool to assess the posture of neonate, Neonatal comfort scale to assess the behavior of newborn and physiological parameters. The following sources were used for the development of the tool.

Section 1: Structured profile of healthy preterm newborn { 8 items}Section 2: Modified IPAT to assess the posture of healthy preterm newborn { 6 items}Section 3: Comfort behavioral scale to assess the behavior of healthy preterm newborn. { 6 items}Section 4: Physiological parameters { 5 items}.. The collected data were complied, tabulated and analyzed based on objectives with help of descriptive (mean, SD and mean percentage) and inferential ('t' test) statistical methods.

Results

Finding related to profile of healthy preterm newborn babys

The descriptive statistics of the study subjects findings reveal thatin experimental group highest percentage (63%)were in age group of 3 days old and in control group highest percentage (47%) were in age group of 2 days old.According to their gender shows that in experimental group higher percentage (57%)were female and whereas in control group nearly two third (63%) were male baby's.According to their gestational age shows that in both experimental and control group equal percentage(47 %) of

them were had gestational age between 36 weeks to 36 weeks 6 days.According to their birth weight, shows that in experimental group higher percentage (43%) were had birth weight between 1.76 -2.00 gram, However in control group higher percentage (43 %) had birth weight 2.01-2.25gram.

Table 1: Profile of theHealthy preterm newborn (N: 60)

SN	Perticulars of profile	Experimental Group		Control Group	
		Number	Percentage (%)	Number	Percentage (%)
1	**Age in days**				
	2 days	3	10	14	46.67
	3 days	19	63.33	9	30
	4 days	8	26.67	7	23.33
2	**Gender**				
	Male	13	43.33	19	63.33
	Female	17	56.67	11	36.67
3	**Gastational Age in weeks**				
	32-33.6	7	23.33	8	26.67
	34-35.6	9	30	8	26.67
	36-36.6	14	46.67	14	46.67
4	**Birth Weight in grams**				
	1.50-1.75	5	16.67	5	16.67
	1.76-2.00	13	43.33	4	13.33
	2.01-2.25	10	33.33	13	43.33
	2.26-2.50	2	6.67	8	26.67

Finding related to posture and movement-

Analysis of posture and movement in both the group shows that, the preterm baby's of both group had "average posture" and in relation to movement the experimental group preterm baby's had "mild to moderate discomfort" and in control group preterm baby's had "moderate to severe discomfort". In relation to healthy preterm newborn baby's shows that in experimental group the posture score was (6.96 ±2.12) which is 58.12 % of maximum score indicates the "average posture" whereas in control group the mean score was more or less similar i.e. (6.99 ± 1.08) indicate the "average posture".In relation to movement in experimental group the score was (15.5 ±3.02) which is 51.67% of maximum score indicates "mild to moderate discomfort" whereas in control group preterm baby's had "moderate to severe discomfort" with mean score of (21.06 ± 4.51).

Area wise comparison of Mean, SD ,Mean percentage of posture and movement of healthy preterm newborns

n=60

S N	Areas	Experimental group			Control group		
		Mean	SD	Mean%	Mean	SD	Mean%
1	Posture	6.96	2.12	58.12	6.99	1.08	58.33
2	Movement	15.5	3.02	51.67	21.06	4.51	70.20

Finding related to effectiveness of nesting

The below table posture score is shows that , in experimental group score was (11.3 ± 1.43) which is (92.75 %)of total score indicates "good posture" where as in control group mean score was (6.9 ± 1.86) which is (57.5 %)of total score indicates "average posture", and effectiveness was (32.25%) .

In relation to movement posttest mean score of experimental group was (9.93 ± 2.04) which is (33.1%)of total score indicates "fullness of comfort " whereas in control group mean score was (21±4.51) which is (70%) of total score indicates "moderate to severe discomfort ", and effectiveness was (37%) . The finding interprets that nesting was effective in improving the posture and comfortless of healthy preterm newborn babies than routine care.

Area wise comparison of mean , SD, mean percentage in healthy preterm newborn babies

n= 30

S N	Area	Max score	Post test						
			Experimental group			Control group			
			Mean	SD	Mean%	Mean	SD	Mean%	Effectiveness (%)
1	Posture	12	11.13	1.43	92.75	6.9	1.86	57.5	32.25
2	Movement	30	9.93	2.04	33.1	21	4.51	70	37

Discussion

From the discussion it was evident that our research findings were very much consistent and parallel to various number of scientific studies and reports. It was proved that the problem chosen for the study was common and has greater significance in the medical and nursing practice. The study mimics the research methodology used by the other researchers.

It was noted that (before nesting) in both group the healthy preterm newborn babies had good posture whereas in relation to movement the experimental group preterm baby's had "mild to moderate discomfort" and in control group preterm baby's had "moderate to severe discomfort" .

The result shows that In experimental group healthy preterm newborn babies had mean score (11.3 ± 1.43) which is (92.75 %)of total score indicates "good posture" whereas in control group mean score was (6.9 ± 1.86) which is 57.5 % of the total score indicates "average posture", and the difference between the groups was 32.25% . It highlight the nesting was effective in facilitating the good posture.

The finding enumerates that the healthy preterm newborn babies in experimentalgroup had mean score (15.5 ±3.02) which is 51.67% of maximum score indicates "mild to moderate discomfort" whereas in control the mean score was higher i.e. (21.06 ± 4.51) indicates "moderate to severe discomfort. It is imperatively suggest that nesting was proved to be effective in minimizing the discomfort.

Further the inferential statics (ttest)show that the difference between the experimental and control group in relation to posture and movement was statistically significant.

Conclusion

The study concludes that, the adolescent girls of rural area had satisfactory eating behaviors. However they had some unhealthy eating behaviors in the meal time habits and eating habits areas. The study also clearly shows that the eating behavior is associated with family income. Evidence shows that adolescents who have healthy eating behaviors were more likely to have better performance and health. As today's adolescents are the pillars of future nation, promotion of healthy eating behaviors that stresses on the importance of regular intakes of main meals is crucial for their current and future health and well-being.

The rural populations comprise majority of the Nation's populace and also because adolescents in rural areas face unique challenges to healthy development. The welfare of the entire community depends on the health and welfare of youth. It is essential to raise awareness on significance of diet and healthy eating behaviors; and develop health seeking behaviors among the rural adolescents to improve health status and quality of life.

Reference

1. WHO. Nutrition in adolescence: issues and challenges for the health sector: issues in adolescent health and development, 2005.

2. NCCFN. A report of the Technical Working Group on Nutritional Guidelines, National Coordinating Committee on Food and Nutrition, Ministry of Health, Putrajaya, 2005.

3. Chin YS and MohdNasir MT. Eating Behaviors among Female Adolescents in Kuantan District, Pahang, Malaysia, Pakistan Journal of Nutrition, 2009; 8 (4): 425-432.

4. Hoek HW and Hoeken D. Review of the prevalence and incidence of eating disorders. International Journal of Eating Disorders, 2003: 383-396.

5. Babitha B and Kusuma DL. Chronic energy deficiency and obesity among rural women– relationship between BMI and selected body composition parameters. Indian Journal of Nutrition and Dietetics, 2009; 46: 386-92.

6. Deshmukh PR, Gupta SS, Bharambe MS, Dongre AR, Maliye C, Kaur S and Garg BS. Nutritional Status of Adolescents in Rural Wardha, Indian Journal of Pediatrics, 2006; 73(2): 139-141.

7. Choudhary S, Mishra CP and Shukla KP. Nutritional Status of Adolescent Girls in Rural Area of Varanasi, Indian Journal of Preventive and Social Medicine, 2003; 34(1): 54-61.

8. National Institute of Mental Health (NIMH) (2007). Eating disorders: Facts about eating disorders and the search for solutions.

9. Cavadini C, Decarli B and Dirren H. Assessment of adolescent food habits in Switzerland. Appetite 2008; 32:97-106.

10. Srinivasan K and Prabhu GR. A Study of the Nutritional Status of the Social Welfare Hostels in Tirupati, Andhra Pradesh. The Indian Journal of Nutrition and Dietetics, 2004; 41 (5): 210-214.