Nesting And Prone Position

by Ramadhaniyati Ramadhaniyati

Submission date: 17-Nov-2021 11:30AM (UTC+0500)
Submission ID: 1705368472
File name: Proceeding_INC-169-177.pdf (181.67K)
Word count: 2308
Character count: 12938

ABSTRACT

NESTING AND PRONE POSITION TO INCREASE OXYGEN SATURATION IN PRETERM AT HOSPITAL X PONTIANAK CITY, INDONESIA

Tiara Amalia Mentari[1], Ramadhaniyati[2], Maria Fudji Hastuti[3], Lilis Lestari[4]

1. Bachelor of Universitas Tanjungpura, Indonesia
2. Department of Pediatric Nursing. The Muhammadiyah Institute Of Nursing Pontianak, Indonesia
3. Universitas Tanjungpura Hospital, Indonesia
4. Department of Pediatric Nursing. The Muhammadiyah Institute Of Nursing Pontianak, Indonesia

Correspondent Author :

Tiara Amalia Mentari. Bachelor of Universitas Tanjungpura, Indonesia. Email: tiaraamaliamentari2016@gmail.com

ABSTRAC

Background: Preterm have the potential to increase mortality by 65-75%. This occurs due to the immaturity of the organ system, especially breathing that results in decreased oxygen saturation in preterm. Interventions of nesting and prone positioning are aimed at increasing oxygen saturation in preterm.

Objective: To determine the effectiveness of nesting and prone position against oxygen saturation in preterm.

Method: Pre experimental quantitative research on 6 respondents with 1 pre group and post intervention without control group taken by purposive non probability sampling which was analyzed Paired T-Test with p <0,05. Interventions were performed for 60 minutes with full observation recorded on the obesrvation sheet at 0 minutes, 30 minutes and 60 minutes of intervention. The nesting intervention begins at 0 min intervention and prone position intervention begins at 30 minute intervention.

Result: There is difference of oxygen saturation value before and after intervention of nesting and prone position (p = 0,000) (p <0,05).

Conclusion: Nesting and prone position effective against oxygen saturation level in preterm at Hospital X Pontianak City, Indonesia

Keywords: Nesting, Prone, Preterm, Oxygen Saturation

Background:

Preterm is delivery with a gestational age of less than 37 weeks or less than 2500 g (WHO, 2012; Manuaba, 2007). Preterm is the highest cause of death in the neonatal. The rate of preterm in the world ranges from 5% to 18% of newborn. An estimated 15 million babies are born preterm every year, more than 80% of preterm occur between 32-37 weeks of pregnancy. Indonesia is one of the nine most preterm with a percentage of> 15% in the world. WHO states that infant mortality is mostly caused by preterm with low birth weight (25-30%), (Depkes RI, 2008). The high infant mortality rate is still the main problem faced by Indonesia (WHO, 2012: Kemenkes RI, 2015, WHO, 2016).

Data from Health Profile of West Kalimantan Province (2016) number of neonatal mortality as much as 455 neonatal, 157 (34,5%) of them caused by BBLR. Pontianak is the capital of West Kalimantan Province which based on Health Profile data of West Kalimantan Province in 2016 still has a high prevalence of death from BBLR that is 46.15%.

Low birth weight problems, especially in preterm due to immaturity of the organ system in the baby. Low birth weight babies have a tendency towards increased infection and susceptible to complications. Common problems of respiratory diseases, central nervous system, cardiovascular, haematological, gastrointestinal, renal and thermoregulatory disorders (Profil Kesehatan Indonesia, 2014).

Based on the results of a study conducted by Bayuningsih in 2011 revealed that prone and nesting positions proved to be effective can increase oxygen saturation in preterm. But prone intervention in bayuningsih research is only done for 20 minutes. This is not yet compatible with the physiological stabilization of preterm who take 30 minutes (Kassim et al., 2007; Yin et al., 2015).

The researcher is interested in conducting research on "nesting and

prone position to increase oxygen saturation in preterm at X Hospital, Pontianak City, Indonesia".

Method :

Quantitative research, using pre experimental design research, design with one group pretest-posttest design without control group. The one group pretest-posttest design without control group approach uses a group of subjects, i.e pre-and post-treatment values in the intervention group.

With pretest or preliminary observation prior to intervention nesting and prone position, after intervention nesting and prone position, then re-done posttest or final observation (Hidayat, 2011). The research technique can be described as follows:

Table 1. A one-group pretest-posttest design without control group design

Pretest	Interventions	Posttest
Oxygen saturation, in preterm	Nesting and prone position	oxygen saturation in preterm

Population:

The population of this study was newborn with preterm condition that was treated in perinatology room X hospital Pontianak City, Indonesia.

Sample:

The samples used were preterm who were treated in the perinatology room x hospital Pontianak City, Indonesia. Samples were taken in this study based on inclusion and exclusion criteria with standard deviation of 2,344.

Researchers anticipate the respondents drop out, then the number of respondents in plus by 20%. So get the number of samples added by 1 respondent. So the number of samples used in this study amounted to 6 respondents (Dharma, 2015).

Sample Criteria:

Inclusion Criteria

The inclusion criteria in this study in accordance with Notoatmojo (2012) are:

1. Preterm with parental consent
2. Preterm treated in the incubator
3.Gestational age ≥ 28 weeks, baby BB> 1000 grams

Exclusion Criteria

The exclusion criteria in this study in accordance with Nursalam (2011) are:

1. Preterm with congenital abnormalities
2. Preterm with lung problems, severe respiratory function and nerve damage
3. Preterm who performed surgery
4. Preterm attached monitoring tools
5. Preterm with oxygen therapy who during the intervention had increased SaO2 to 100%

Result:

Table 4.2 Distribution of RR Normalities, Oxygen Saturation, Pulse and Temperature before, during and after intervention nesting and Prone Position.

Variabel	Hasil	Mean	Median	SD	Min-Max	P Value
Oxygen Saturation	Pretest *nesting*	94,17	94	0,753	93-95	0,212
	Pretest *prone*	95	95	0,894	94-96	0,167
	Posttest *nesting* and *prone*	96,50	96,50	1,049	95-98	0,820

From table 4.2, it is known that the normal oxygen saturation value distribution.

Table 4.3 Tailed Test Results Effectiveness Nesting and Prone Position

Variabel	Hasil	N	Mean	SD	p Value
Oxygen Saturation	Before *nesting*	6	94,17	0,753	0,004
	After *nesting*	6	95	0,894	
	After *nesting*	6	95	0,894	0,001
	After *prone*	6	96,50	1,049	
	Before *nesting*	6	94,17	0,753	0,000
	After *nesting* dan *prone*	6	96,50	1,049	

In Table 4.3 it is also found that the nesting and prone positioning interactions have an effect on the oxygen saturation value value which can be seen in three time. The effect of nesting intervention before and after 30 min intervention nesting with p value 0,004. The effect of prone position intervention from 30 minutes was nesting and after 30 minutes prone position with p value 0,001. Influence of intervention nesting and prone position with p value 0.000.

Discussion:

The results showed that there was an effectiveness of nesting and prone position on oxygen saturation in preterm. This can be seen from the increase of the average value of oxygen saturation of respondents before and after intervention nesting and prone position which increased from 94.17% to 96.50%. Paired T-test results show the influence of nesting intervention and prone position on oxygen saturation in preterm with p value 0.000. The results of this study are in line with research conducted Bayuningsih (2011) where nesting effect on oxygen saturation improvement. Prone position greatly influences oxygen saturation improvement, lung development, chest wall development and decreased incidence of apnea in premature (Wilawan, et al., 2009). In this study, however, the results of the analysis were also affected by decreased oxygen saturation levels at 0 min intervention taken as pretest data because the infant had just been bathed and then increased 60 minutes later after the intervention. Research conducted by Abdeyazdan (2016) mentions that nesting is also effective for improving the quality of baby sleep, where adequate sleep is very important for the neonate because it affects the development of sensory systems, hippocampus structure, punch, brainstem, midbrain, motor system, limbic, learning , Long-term memory, thermoregulation, and appropriate responses to face changes, where it is known that the medulla oblongata is the center of lung regulation. In addition, good thermoregulation will increase the baby's oxygen saturation level. A good thermoregulation mechanism can support the achievement of NTE which is the temperature or environmental condition where the body temperature under normal conditions with caloric expenditure and minimal oxygen consumption (Tjipta, et al, 2011).

As a comparison, the researcher also conducted an analysis of the value

of recording done 3 times at 0 minutes, 30 minutes and 60 minutes to assess whether there is a significant difference in the value of the influence of separate nesting intervention, prone position intervention and the influence of the combination of both interventions. From the analysis results obtained that nesting alone can increase the average value of oxygen saturation of respondents at 0 minutes and 30 minutes of nesting intervention. The average oxygen saturation level of respondents at 0 minute nesting intervention was 94.17% and increased after 30 min of nesting intervention to 95%. Paired T test results showed the influence of nesting intervention on oxygen saturation level of respondents with p value 0,004.

The results of the analysis showed that the prone position itself was able to increase the average saturation value of the respondent's oxygen measured at 30 min of nesting intervention as pretest prone position data and 30 min intervention prone position as prone position posttest data. The mean oxygen saturation rate of pretest respondents to prone position intervention was 95% and the mean value of intervention after 30 min of prone position was 96.50%. The result of Paired T test shows the influence of prone position intervention on oxygen saturation level of respondent with p value 0,001. So it can be concluded that the position of prone gives greater influence to the increase of oxygen saturation level of respondent compared with nesting intervention. The prone position in the baby is a very energy-saving proce, as this position will reduce heat loss compared to the supine position. This is because in the prone position, the baby's feet are flexed so as to decrease the body's metabolism consequently there is a decrease in the amount of heat loss (Hegner and Cadwel, 2003 in Bayuningsih, 2011). Research conducted by Idemmiaty (2011) shows that the position of prone increases lung volume characterized by increased oxygen saturation. According to research conducted by Kusumaningrum (2009) the oxygen saturation value in patients performed prone position is obtained within normal limits and this is related to respiratory physiology. Prone positioning will affect the perfusion of oxygen. The impact of oxygenation of the prone position on the alveolar inflation distribution will be more homogeneous. Increased density of pulmonary anterio is less than the decrease in posterior pulmonary density, which indicates that in the prone position there is greater

posterior posterior emphasis. Pulmonary weight size will affect the intrapulmonary air distribution. This intrapulmonary air redistribution is related to hydrostatic pressure, so that in the prone position it is likely that the dependent lung area is a more minimal ventral area.

Conclusion:

This study has the following limitations are during the intervention of respondents using diapers so that the position of prone given in the study becomes not optimal where the baby's leg position cannot be stretched straight, intervention conducted in the study is given too early that sometime after the respondent was bathed, so physiological respondents have not been stable in adapting from exposure to temperature during infant process is bathed. This study also have limitation i.e little sample size (only six respondents), this is due to the small standard deviations from previous studies. It is hoped that the future researcher can use larger sample quantities and with control groups and conduct behaviors against oxygen saturation of premature infants at regular intervals.

Nesting and prone position are effective against oxygen saturation levels in preterm.

Conflict of Interests :

There is no conflict of interest in this study.

References :

Abdeyazdan, Z., Mohammad, M., & Zohreh. (2016). Effects of Nesting and Sawadding on the Sleep Duration Of Premature Hospitalized In Neonatal Intensive Care Units. *Original article*, 552-556.

Bayuningsih, R. (2011). Efektivitas penggunaan Nesting dan Posisi Prone Terhadap saturasi Oksigen dan Frekuensi Nadi pada Bayi Prematur di Rumah Sakit Umum Daerah Kota Bekasi. *Jurnal Keperawatan UI*, 1-5.

Dharma, K. K. (2015). *Metodologi Penelitian Keperawatan Panduan Melaksanakan dan Menerapkan Hasil Penelitian.* Jakarta: Salemba Medika.

Hidayat, A. A. (2011). *Metode penelitian Keprawatan dan*

Teknik Analisa Data. Jakarta: salemba Medika.

Idemmiaty. (2011). Efektifitas Posisi Pronasi Terhadap Saturasi Oksigen, Frekuensi Nadi dan Frekuensi Napas pada Bayi Yang Menggunakan Ventilatr Diruang NICU RSUP DR. M. Djamil Padang 2011. Padang: Universitas Andalas.

Indonesia, P. K. (2016). *Diperoleh pada tanggal 12 Desember 2016.* Provinsi Kalimantan Barat: Dinas Kesehatan .

Kassim, Z., Donaldson, N., Khetriwal, B., Rao, H., & Sylvester. (2007). sleping Position, Oksigen Saturation and Long Volume in Convalescent, Prematurely Born Infant. *fetal and Neonatal Edition*, 347-350.

Kusumaningrum, A. (2009). Faktor yang Memperngruhi Nilai SPO2 Pasca Pronasi Pada Bayi Yang Memakai Ventilator. *Jurnal UI.*

Kusumaningrum, A. (2009). Frekuensi Nafas Bayi Yang Menggunakan Ventilator Sebelum Dan Sesudah Pronasi. *Jurnal UI*, Vol. 12 Hal 68-75 .

Manuaba, I. C., & Manuaba, I. (2007). *Pengantar Kuliah Obstetri*. Jakarta: EGC.

Notoatmojo, S. (2012). *Metodologi Penelitian Kesehatan.* Jakarta: Rineka Cipta.

Nursalam. (2011). *Konsep dan Penerapan Metodologi Penelitian Ilmu Keperawatan.* Jakarta: Salemba Medika.

Profil Kesehatan Indonesia. 2012. www.depkes.go.id/.../profil-kesehatan-indonesia/profil-kesehatan-indonesia. Diperoleh 23 Desember 2016.

Profil Kesehatan Provinsi Kalimantan Barat. 2016. Diperoleh pada tanggal 12 Desember 2016 dari Dinas Kesehatan Provinsi Kalimantan Barat.

Tjipta, G. D., Azlin, E., & Sianturi. (2008). *Thermoregulasi pada Neonatus.* Medan: Kedokteran Universitas Sumatra Utara.

WHO, 2012. Born Too Soon: The Global Action Report on Preterm Birth. Eds CP

Howson, MV Kinney, JE Lawn. World Health Organization. Geneva.

Wilawan, P. P., & Chavee, B. (2009). Positioning of Preterm Infants for Optimal Physiological Development : a Systematic Review. *JBI Library*, Vol.7.

Yin, T., Seng, Y., & Juan, J. (2015). Semi Prone Position Can Influence Variabelity In Respiratory Rate of Premature Infants Using Nasal CPAP. *Elsevier*.

Nesting And Prone Position

ORIGINALITY REPORT

9%	7%	3%	1%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	pingpdf.com Internet Source	2%
2	publications.inschool.id Internet Source	1%
3	www.drexel.edu Internet Source	1%
4	Submitted to King's College Student Paper	1%
5	gssrr.org Internet Source	1%
6	www.gfmer.ch Internet Source	1%
7	Chang, Hannah H, Jim Larson, Hannah Blencowe, Catherine Y Spong, Christopher P Howson, Sarah Cairns-Smith, Eve M Lackritz, Shoo K Lee, Elizabeth Mason, Andrew C Serazin, Salimah Walani, Joe Leigh Simpson, and Joy E Lawn. "Preventing preterm births: analysis of trends and potential reductions with interventions in 39 countries with very	<1%

high human development index", The Lancet, 2013.
Publication

8	eprints.ners.unair.ac.id Internet Source	<1%
9	e-journal.unair.ac.id Internet Source	<1%
10	eprints.ukmc.ac.id Internet Source	<1%
11	www.scribd.com Internet Source	<1%
12	Novita Verayanti Manalu. "The INFLUENCE OF HYPERTENSION EXERCISE ON BLOOD PRESSURE IN ELDERLY HYPERTENSION IN THE KEDATON COMMUNITY HEALTH CENTER PENENGAHAN RAYA VILLAGE BANDAR LAMPUNG", Abstract Proceedings International Scholars Conference, 2019 Publication	<1%

Exclude quotes	On	Exclude matches	Off
Exclude bibliography	On		