

A Systematic Review: In Infants Admitted to Neonatal Intensive Care Unit, How Does Massage Therapy Affect the stress behavior?

Nenden Nur Asriyani Maryam¹

Pediatric Nursing Department, Faculty of Nursing,
Universitas Padjadjaran

Email: nenden.nur@unpad.ac.id

ABSTRACT

Introduction: Infants are experience various stressors while treated in Neonatal Intensive Care Unit (NICU), massage therapy is a non – pharmacologic approach that could reduce the stress behaviour of infants. The aim of this study was to conduct an evidence-based systematic review and provide an estimate of the effect of massage therapy on stress behaviour of infants in NICU. The search for study is confined only to MEDLINE, EBCOHost and Pubmed. Studies published in English from 2006-2016 inclusively considered as criteria in this review. **Method:** The quantitative component of the review was considered as experimental study. Data extracted and summarized by reviewer using CASP (Critical Appraisal Skills Programme). Three randomizes control trial studies were included in this review. **Result:** The result of this review showed that infants with massage therapy have less stress behaviour than infants without massage therapy. **Conclusion:** Thus, policy makers are able to utilize this data related massage therapy to alleviate the stress behaviour of infants.

Keywords: massage therapy, infants, stress behaviour

INTRODUCTION

Every year, around 15 million babies were born preterm (babies born alive before 37 weeks of pregnancy are completed) and around 1 million children die each year due to complications of preterm birth. Globally, prematurity is the leading cause of new-born deaths (babies in the first four weeks of life) and the second leading cause of death after

pneumonia in children under the age of five (WHO, 2013). In 2013, Indonesia is the 5th from 10 countries with the greatest number of preterm births (675 700 in numbers) and the 9th of 10 countries with the highest rates of preterm birth per 100 live births: 15.5 (WHO, 2013). The infant born with specific condition require admission to Neonatal Intensive Care Unit (NICU). Infants are vulnerable to experience various

stressors while treated in NICU. Health care providers should develop and implement an approach to lessen the stress of infants in NICU. Non-pharmacologic therapies have been well known to be advantageous to reduce pain in infants (Jones & Kassity, 2001). One of the most effective and inexpensive method to reduce the stress of infants is massage therapy. Massage therapy for infants involves hands-on and skin-to-skin manipulation of the soft tissue that contains gentle effleurage (rhythmic, gliding strokes confirming to the contours of the body), light petrissage (lifting, rolling, kneading strokes done slowly) and compression (light compression of selected areas) and nerve stroke (very light brushing of the skin). Massage therapy is beneficial to enhance vagal activity, modulating insulin, and insulin like growth factor 1 in addition to decrease levels of cortisol and epinephrine (Field, Diego & Hernandez- Reif, 2010). Moreover, massage therapy will enhance the growth and at once reduces stress of infants who show disorganized physiological and behavioral responses related stressors while treated in NICU (Anand, et. al, 2005). However, no systematic review has been assessed the effect of massage therapy on stress behavior in infants. Despite the many known benefits of massage therapy for infants and the

acknowledgement of its safety, this intervention is still not practiced in Indonesia healthcare settings. Whereas, the health care providers should improve their quality of care. In considering this approach the evidence of its effectiveness needs to be evaluated as an essential first step. In considering this, the evidence of its effectiveness needs to be evaluated as an essential first step. The aim of this study was to conduct an evidence-based systematic review and provide an estimate of the effect of massage therapy on stress behavior of infants in NICU.

Clinical Question

In Infants Admitted to Neonatal Intensive Care Unit, How Does Massage Therapy Affect the Stress behavior?

METHODS

Criteria for Considering Studies for this Review/Inclusion Criteria Types of participants

The quantitative component of this review will consider studies that include infants in NICU.
3

Types of intervention

The quantitative component of the review will consider studies that evaluate massage therapy on stress behavior of infants in NICU

Types of outcomes

This review will consider studies that include the following outcome measures: stress behavior

Types of studies

The quantitative component of the review will consider both experimental and epidemiological study designs including randomized controlled trials, nonrandomized controlled trials, quasi-experimental, before and after studies, prospective and retrospective cohort studies, case control studies and analytical cross sectional studies for inclusion.

Searchstrategy

Keywords

Initial keywords was utilize the MeSH term that commonly used.

Population (P) used Infant/neontates/baby.

Intervention (I) used massage therapy. Outcomes (O) used stress behavior. Keyword combination utilize Boolean

Operator with used "AND" or 'OR'.

Initial search

The search strategy aims was to find published studies. An initial limited search of Proquest, EBCOhost, PubMed, Springer have be undertaken followed by analysis of the text words contained in the title and abstract, and of the index

terms used to describe article. Studies published in English and in years 2006- 2016 was considered for inclusion in this review.

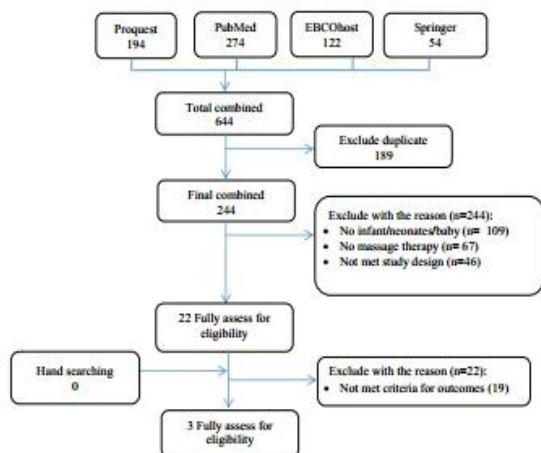
Data extraction

Data extracted by the reviewers and summarized using the JBI data extraction tool. Collected data includes participant demographics, sample inclusion and exclusion criteria, study setting, number and reasons for withdrawal from study, type and description of complementary therapy intervention, application and follow up of intervention, measure of outcomes, statistical methods and study outcome descriptions.

RESULTS

Searching Results The literature searches generated 644 records through searches of databases, excluding duplicates (189). From above number, we exclude the studies that were not included infant/neonates/baby (109), not meet study design (46) and not use massage therapy as intervention (67). For total reviewed the full text of theremaining 22 records. Finally, author only included 4 studies to be reviewed. Even though we only include 3 studies but the 3 studies have key strength in method.

Figure 1. Flow diagram of study selection



Methodological quality

The study that conducted Randomized Control Trial (RCT) (Hernandez-Reif et al, 2007) has been identified as a good quality of study with grade A of recommendation refers to JBI grading system. There were many participant loss of follow up from two studies but the result of this study showed statistically significant. Two studies conducted systematic review of randomized controlled trial and other study (Lai, 2013) and (Werner, 2013). This study have grade A recommendation also refer to JBI grading system.

DISCUSSION

The result of this review showed that massage therapy is an effective treatment for reduce the stress behavior of infants in NICU. In addition, a previous study showed that massage therapy has beneficial effect on anxiety, depression and pain (Moyer et al, 2010). The other studies also reported that massage therapy is associated with relaxation (Field, 1998) and decreased the cortisol levels in preterm infants (Acolet et al, 1993). Furthermore, one study reported, massage with the oil makes infants more alert and shows fewer stress behavior than massage without oil (Field et al, 1996). Author only included 4 studies that meet the eligible

criteria, it seems that massage therapy is important but still needs to be increased and implemented into daily care in NICU especially in Indonesia.

CONCLUSIONS AND CLINICAL IMPLICATIONS

Massage therapy demonstrates effectiveness to reduce the stress behavioral of infants. Moreover, massage therapy is practical and easy and parents could be easily trained to massage their infants. This would make the massage therapy even less expensive and more time saving. Thus, policy makers are able to utilize the data to constitute newest NICU protocols based on reports of stress behavior of infants. Further research is necessary to reveal the better role of massage therapy with additional oil.

REFERENCES

- Anand, K., Johnston, C., Oberlander, T., Taddio, A., Tutag Lehr, V., & Walco, G. (2005). Analgesia and local anesthesia during invasive procedures in the neonate. *Clinical Therapeutics*, 27, 844–876.
- Field T, Diego M, Hernandez-Reif M.(2010). Preterm infant massage therapy research: a review. *Infant Behavior & Development*. 2010; 33:115–24. [PubMed: 20137814].

Hernandez-Reif M, Diego M, Field T. (2007). Preterm infants show reduced stress behaviors and activity after 5 days of massage therapy. *Infant Behavior Development*. 2007; 30(4):557-61.

Jones JE, Kassity N: Varieties of alternative experience: Complementary care in the neonatal intensive care unit. *Clinical Obstetric Gynecology* 44:750- 768, 2001

Lai, Ching-Hung. (2013). Effect of massage therapy in reducing signs of stress on premature infants. (Thesis). University of Hong Kong, Pokfulam, Hong Kong SAR. Retrieved November 1, 2015 from http://dx.doi.org/10.5353/th_b5_088348

Werner, Sarah E. (2013). Does neonatal massage lead to reduced stress behavior in medically stable preterm infants in the NICU? (Disertation). Philadelphia College of Osteopathic Medicine. Retrieved November 1, 2015 from http://network.bepress.com/medicine-and-health-sciences/medical-specialties/pediatrics/?utm_campaign=PDFCoverPages&utm_medium=PDF&utm_source=digitalcommons.pcom.edu%2Fpa_systematic_reviews%2F143

World Health International. (2013). Indonesia: Neonatal and child health profile. Retrieved November 1, 2015 from: http://www.who.int/maternal_child_adolescent/epidemiology/profiles/neonatal_child/idn.pdf?ua=1