



Effect of oil massage therapy on weight gain and sleep pattern among preterm babies in selected hospitals: A literature review

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Abstract

Massage is one of the oldest therapeutic techniques in the world which has been used as a routine part of infant care in many cultures. One of the important effects of massage is promoting optimal infant growth and development.

Objective: To evaluate the effect of oil massage therapy on weight gain and sleep pattern among preterm babies.

Methods: A systematic literature review is conducted. The literature includes last 5 years data.

Electronic search to Collect Literature: The following electronic databases are searched: ProQuest, Embase, Pubmed, EBSCO, Scopus, the British Nursing Index and the Cumulative Index to Nursing & Allied Health Literature (CINHAL) and journal available in library.

Result: The family is a complex and dynamic institution in India. Numerous studies and research suggest that oil massage is safe and beneficial practice. From the evidence present in this paper, it is clear that, oil massage would be a safe, cost effective, and helping in weight gain of preterm child.

Conclusion: It consider positive effect of infant massage on weight gain in premature infants with oil.

Keywords: oil massage, preterm child, weight gain, sleep pattern, physical touch

Introduction

Infant massage could potentially benefit both physiological and psychological health. Massage is one of the oldest therapeutic techniques in the world which has been used as a routine part of infant care in many cultures. The sense of touch is one of the first senses to develop, and parent-infant touch provides numerous benefits including regulation of heartbeat and temperature for babies as well as protection against infections. It also promotes parent-infant bonding and early social development. Teaching mothers to massage their infants may strengthen attachment by helping the mother to become more sensitive to her infant's cues and positive mother-infant interaction patterns. One of the important effects of massage is promoting optimal infant growth and development^[1].

Studies have shown that infants who have been the recipients of positive touch experience more benefits as they develop emotionally and socially. Experiments have been done with infants up to four months of age using both positive touch (stroking or cuddling) and negative touch (poking, pinching or tickling). The infants who received the positive touch cried less often and also vocalized and smiled more than the infants who were touched negatively. Infants who were the recipients of negative touching have been linked with emotional and behavioral problems later in life. A lower amount of physical violence in adults has been discovered in cultures with greater levels of positive physical touching^[1].

Methods and Findings

Electronic search to Collect Literature

The following electronic databases are searched: ProQuest, Embase, Pubmed, EBSCO, Scopus, the British Nursing Index and the Cumulative Index to Nursing & Allied Health Literature (CINHAL) and journal available in library.

Abstract-1

1 Background

The aim of this study was to evaluate the effect of olive oil massage on weight gain in preterm infants.

Material and method

This study was a single-blind, randomized controlled clinical trial. In this study, infants who met inclusion criteria for the study were divided into two groups by using random numbers table. Newborns in intervention group were under massage for 10 days and 3 times for 15 min daily; the mother of these newborns had been trained already using olive oil. Moreover, the infants of the control group were under massaging without oil same as the above-mentioned method. Researchers weighed babies daily during 10 days and recorded it at the checklist.

Result

Data from the study were reviewed and analyzed by descriptive statistics and repeated measure test using the

statistical software SPSS/13. This study showed that the neonatal weight gain in the infants with the oil massage was 21 g daily in average, whereas the increase in infant massage without oil was 7 g. This difference was statistically significant ($P < 0.001$).

Conclusion

Considering the positive effect of infant massage on weight gain in premature infants with olive oil, it is recommended that nurses use oil in infant massage in the neonatal units.

Abstract-2

Background

To determine the effect of massage with oils on the growth of full term infants, which is given by their mothers?

Material and method

This is a double blind randomized controlled trial which was conducted on full term infants visited in the nine Public Health Centers of Shahrekord, Iran in 2010. This study included 217 infants. The infants were randomized into four groups: massage with sunflower oil, massage with sesame oil, massage without oil, and no massage (control group). Massage was given by mothers twice a day for 4 weeks, starting from the 10 - 15th day of life. Weight and height were measured weekly.

Result

Repeated Measures Analysis of Covariance was employed to analyze the data. Birth weight (height) as well as mean frequency of breastfeeding during the study was deemed as covariates. The findings showed that the mean of weight and height was significantly different between groups over time, respectively ($P = 0.005$, $P < 0.001$). The infants' mean weight in sunflower oil massage group increased significantly compared with other three groups ($P = 0.005$). In addition, infants' height gain in sunflower and sesame oil massage group were significantly higher than message only and control groups ($p < 0.001$).

Conclusions

Massage with oil, especially sunflower oil is an inexpensive, simple, and effective intervention which improved weight and height gain in selected samples. Further studies are needed to evaluate the serious adverse effects, if any, to notify midwives and health care staff.

Abstract 3

Background

Priya S. *et al.* Massage therapy (MT) and kangaroo mother care (KMC) are both effective in increasing the weight and reducing length of hospital stay in low birth weight preterm infants but they have not been compared.

Comparison of effectiveness of MT and KMC on body weight and length of hospital stay in low birth weight preterm (LBWPT) infants.

Material and Method

30 LBWPT infants using convenience sampling from Neonatal Intensive Care Unit, V.S. hospital, were randomly

divided into 2 equal groups. Group 1 received MT and Group 2 received KMC for 15 minutes, thrice daily for 5 days. Medically stable babies with gestational age < 37 weeks and birth weight < 2500 g were included. Those on ventilators and with congenital, orthopedic, or genetic abnormality were excluded. Outcome measures, body weight and length of hospital stay, were taken before intervention day 1 and after intervention day 5. Level of significance was 5%.

Result

Data was analyzed using SPSS16. Both MT and KMC were found to be effective in improving body weight ($P = 0.001$, $P = 0.001$). Both were found to be equally effective for improving body weight ($P = 0.328$) and reducing length of hospital stay ($P = 0.868$).

Conclusion

MT and KMC were found to be equally effective in improving bodyweight and reducing length of hospital stay. Limitation.

Abstract 4

Background

Effect of oil massage on growth in preterm neonates less than 1800 g: a randomized control trial.

Objective

To study the effect of oil massage on growth in preterm babies less than 1800 g.

Methods

This randomised controlled trial was conducted in Neonatal intensive care unit of a level II hospital. Neonates with birth weight < 1800 g, gestation < 35 wk and < 48 h of age at enrolment were included in the studies. Eligible neonates were randomized to one of the two groups (a) Oil massage along with standard care of low birth weight (b) Standard care of low birth weight without massage. Weight, length and head circumference was measured in the two groups at 7 d intervals. Serum triglyceride levels were measured at enrolment and at completion of study. Primary outcome variable was weight gain at 28 d after enrolment.

Results

A total of forty-eight neonates were randomised to either oil massage group ($n = 25$) or standard care of low birth weight without massage group ($n = 23$). Mean (SD) weight of babies in the two groups was 1466.4 ± 226.8 g in oil massage group and 1416.6 ± 229.9 g in the control group. At 28 d, weight gain in the oil massage group (476.76 ± 47.9 g) was higher compared to the control group (334.96 ± 46.4 g) ($p < 0.05$). At 7 d, less weight loss (7.80 ± 9.8 g) was observed in babies in oil massage group compared to control group (21.52 ± 19.4 g) ($p = 0.003$). However, there was no significant difference in serum triglycerides and other anthropometric parameters.

Conclusions

Oil application has a potential to improve weight gain and cause less weight loss in first 7 d in low birth weight neonates.

Abstract 5

Background

Sedighah A. *et al.* Admission of low birth-weight (LBW) neonates in neonatal intensive care unit (NICU) causes their deprivation of tactile and sensory stimulation. The purpose of this study was to evaluate efficacy of body massage on growth parameters (weight, height and head circumference) gain velocity of LBW in Yazd, Iran.

Materials and Methods

A randomized clinical trial study was conducted on LBW neonates whom were admitted Hospital to NICU of Shahid Sadoughi, Yazd, Iran from March to December 2011. Neonates were randomly assigned to two groups. In group one, 20 neonates were received massage three times in a day for consecutive 14 days by their mothers. In group two, intervention consisted of standard and routine care as control group. The primary endpoints were efficacy in increase of mean of weight, height and head circumference that were evaluated 14 days after intervention, at ages one and two months. Secondary outcome was clinical side effects.

Results

17 girls and 23 boys with mean gestational age of 34.4 ± 1.22 weeks were evaluated. In the body massage group, only weight at the age of two months was significantly higher than the control group (mean \pm SD: 3250 ± 305 vs. 2948 ± 121 gr, $p=0.005$). No adverse events were seen in the two groups.

Conclusion

Body massage might be used as an effective and safe non-medical intervention for increasing of weight gain velocity in LBW preterm neonates.

Abstract 6

Background

Prasanna K. *et al.* study to evaluate the effectiveness of oil Massage on weight gain and selected physiological parameters among preterm babies in selected Hospitals.

Material and Method

A quasi-experimental-non-equivalent control group design was adopted to assess the effectiveness of oil massage on weight gain among preterm babies in selected hospitals, at Nellore, Andhra Pradesh. The sample size was 60 preterm babies and the purposive sampling was used for selection of subjects. Among them 30 preterm babies were assigned to experimental group and 30 to control group. Pre test was done by using questionnaire to obtain socio demo graphic data of child and mother and observational check list to assess physiological parameters and daily weight monitoring. Following the pre-test, intervention with infant massage was given to the preterm babies in the experimental group, i.e., Oil massage was given with naturally available coconut oil of 15-20ml/kg/body wt/session in 2phases of tactile and kinaesthetic stimulation for 3 times in a day with duration of 15 min, for 7 days. Post-test was done on 8 th day to assess the effectiveness of oil massage and same observation checklist for assessing selected physiological parameters and daily weight monitoring was done.

Result

In experimental group the mean was 1.92 with SD of 0.29 where as in control group the mean was 1.82 with SD of 0.21. The calculated value of independent 't' test was 1.94 and table value is 1.69 at $P < 0.05$. The calculated value is greater than the table value, so the null hypothesis is rejected and research hypothesis is accepted. The study shows that there is statistically significant weight gain among preterm babies in both experimental group compared to control group. Massage seems to be a promising solution to improve the growth and development of preterm babies. It is beneficial many ways, such as increase skin integrity, shorten hospital stay, weight gain, and prevent hypothermia, enhances bonding between parent and child and also prevents complications.

Conclusion

Numerous studies and also present research scholar suggest that oil massage is safe and beneficial practice. From the evidence present in this paper, it is clear that, oil massage would be a safe, cost effective.

Abstract 7

Background

Bahia A. *et al.* The efficacy of massage on short and long term outcomes in preterm infants.

Material and Method

A quasi experimental design was used, 66 infants were recruited from two university hospitals with tertiary level NICUs; 32 infants received the massage therapy by their mothers. Data collection by a researcher blind to the infants' group assignments included weight at discharge, pain responses on the PIPP scale at discharge, length of stay in hospital, neuro developmental outcome (Bay ley scores) and breastfeeding duration at 12 months corrected age.

Result

Infants who were massaged had significantly lower scores on the PIPP after a heels tick compared to before the massage and had lower PIPP scores at discharge compared to the control group. Massaged infants had higher cognitive scores at 12 months corrected age. Weight gain, length of stay, breastfeeding duration and motor scores did not differ between groups.

Conclusion

Stable preterm infants benefit from massage therapy given by their mothers and may be a culturally acceptable form of intervention to improve the outcomes of preterm infants.

Abstract 8

Background

Miguel A. *et al.* compare the effects of massage therapy (moderate pressure stroking) and exercise (flexion and extension of limbs) on preterm infants' weight gain and to explore potential underlying mechanisms for those effects.

Material and Method

Weight gain and parasympathetic nervous system activity were assessed in 30 preterm infants randomly assigned to a

massage therapy group or to an exercise group. Infant received 10 min of moderate pressure massage or passive flexion and extension of the limbs 3 times per day for 5 days

Result

EKGs were collected during the first session to assess vagal activity Both massage and exercise led to increased weight gain. However, while exercise was associated with increased calorie consumption, massage was related to increased vagal activity.

Conclusion

Taken together, these findings suggest that massage and exercise lead to increased preterm infant weight gain via different underlying mechanisms.

Abstract 9

Background

Ayşe G. *et al.* the effect of baby massage on attachment between mothers and their newborns. This study was carried out from June 2008 to February 2010.

Material and Method

A quasi experimental design (57 in the experimental group, 60 in the control group). Between the dates of the study, all healthy primipara mothers and their healthy babies were included. Data were collected regarding their demographic characteristics and by using the Maternal Attachment Inventory (MAI). All mothers were assessed on the first and the last days of the 38day study period. In the experimental group, the babies received a 15minute massage therapy session every day during the 38 days.

Result

There was no significant difference found in the pretest mean value baseline of the MAI score in both groups. The posttest mean values of the MAI of the experimental group mothers (90.87 ± 10.76) were significantly higher than those of control group (85.10 ± 15.50). There was a significant difference between groups ($p < .05$).

Conclusion

The results of the study have shown that baby massage is effective in increasing the mother–infant attachment.

Abstract 10

Background

Tiffany F. *et al.* preterm infant massage therapy studies. Massage therapy has led to weight gain in preterm infants when moderate pressure massage was provided.

Material and Method

In studies on passive movement of the limbs, preterm infants also gained significantly more weight, and their bone density also increased. Research on ways of delivering the massage is also explored including using mothers versus therapists and the added effects of using oils. The use of mothers as therapists was effective in at least one study. The use of oils including coconut oil and sunflower oil enhanced the average

weight gain, and the transcutaneous absorption of oil also increased triglycerides. In addition, the use of synthetic oil increased vagal activity, which may indirectly contribute to weight gain.

Result

The weight gain was associated with shorter hospital stays and, thereby, significant hospital cost savings. Despite these benefits, preterm infant massage is only practiced in 38% of neonatal intensive care units. This may relate to the underlying mechanisms not being well understood. The increases noted in vagal activity, gastric motility, insulin and IGF1 levels following moderate pressure massage are potential underlying mechanisms. However, those variables combined do not explain all of the variance in weight gain, highlighting the need for additional mechanism studies.

Abstract 11

Title

Effect of oil massage on growth and neurobehavioral in very low birth weight preterm neonates.

Objective

To study the effect of oil massage on growth and neurobehavior in preterm babies less than 1500 g.

Design

Randomized Controlled Trial.

Setting

Tertiary level neonatal unit of a teaching hospital.

Subjects

Neonates with birth weight <1500 grams, gestation >37 weeks, receiving enteral feeds of at least 100 mL/kg/day and less than 10 days of age.

Outcome Variables

Primary-Weight gain 28 days after enrolment. Secondary-Neonatal neuro behavior, change in other anthropometry and serum triglycerides.

Methods

Eligible neonates were randomized to one of the three groups (a) massage with oil (b) massage without oil and (c) no massage. Weight, length, head circumference and triceps skin fold thickness were measured in the three groups at regular intervals. Serum triglyceride levels were measured at enrolment and at completion. Neuro behavior using Brazelton's Neonatal Behavior Assessment Scale (NBAS) was assessed at enrolment and after 10 days of intervention.

Results

Weight gain in the oil massage group ($365.8 \pm 165.2g$) was higher compared to the only massage group ($290.0 \pm 150.2g$) and no massage group ($285.0 \pm 170.4g$). This difference and the difference in other anthropometric parameters was not statistically significant. Serum triglycerides and neonatal neurobehavior were comparable in the three groups.

Conclusion

Oil application may have a potential to improve weight gain among preterm very low birth weight neonates.

Over All Result

Researcher assessed the effect of oil massage among preterm. Overall literature shows that oil massage is very effective in weight gain among preterm child. It also increases strength of bonding between mother and child. It is beneficial many ways, such as increase skin integrity, shorten hospital stay, weight gain, and prevent hypothermia, enhances bonding between parent and child and also prevents complications.

Source of Funding

No separate funding was received for this study.

Ethical Clearance

The ethical clearance obtained from our institute.

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