



## The effect of oxytocin massage during postpartum on baby weight

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### ABSTRAK

**Latar belakang:** Rendahnya Cakupan ASI eksklusif di Indonesia dan dunia dapat berdampak negatif terhadap ibu, bayi, keluarga bahkan negara. Penelitian Rawat, et al (2018) bahwa salah satu penyebab kegagalan proses menyusui pada primipara dan dalam minggu pertama melahirkan adalah ibu merasa kesulitan pada pelekatan saat menyusui dan merasa ASI tidak cukup. Penelitian lain yang dilakukan oleh Jacobs, et al (2013) juga membuktikan bahwa mayoritas responden merasa produksi ASI sedikit sehingga memutuskan untuk memberikan susu pendamping. Sedangkan penelitian yang dilakukan Madhavi dan Manikyamba (2016) menemukan faktor yang menjadi alasan tidak memberikan ASI eksklusif adalah kesulitan menyusui. Oleh karena itu perlu adanya metode untuk merangsang produksi ASI pada awal masa nifas salah satunya dengan pijat oksitosin.

**Tujuan:** untuk mengetahui hubungan edukasi pijat oksitosin dengan berat badan bayi.

**Metode:** Jenis penelitian ini pre-eksperimen dengan cara posttest only design serta true-eksperimen menggunakan posttest only control group design. Lokasi penelitian di Klinik KIA dan Praktik Mandiri Bidan wilayah Bantul, Sleman dan Gunung Kidul Yogyakarta. Pelaksanaan April-September 2020. Populasi penelitian ini seluruh keluarga ibu nifas hari pertama sampai hari ketiga dan setelah 1 minggu dilakukan evaluasi pemberian ASI oleh ibu kepada bayi serta pertumbuhan bayi pada usia 2 bulan sejumlah 80 responden. Teknik sampling secara total sampling. Sampel penelitian 80 responden ibu nifas hari pertama-hari ketiga nifas diikuti sampai bayi usia 2 bulan. Instrumen penelitian checklist pijat oksitosin dan lembar catatan observasi berat badan bayi. Uji analisis menggunakan paired t-test.

**Hasil:** Mayoritas responden melakukan pijat oksitosin dengan frekuensi lebih dari 3 kali (50%) dan mayoritas berat badan bayi saat usia 2 bulan sesuai dengan umur (98,8%). Pada hasil analisis bivariat terdapat pengaruh edukasi pijat oksitosin terhadap keluarga ibu nifas dengan berat badan bayi ( $p=0,000$ ).

**Kesimpulan :** Edukasi pijat oksitosin berpengaruh signifikan terhadap berat badan bayi usia 2 bulan.

**KATA KUNCI :** oxytocin massage; postpartum; baby weight

### ABSTRACT

**Background:** The low coverage of exclusive breastfeeding in Indonesia and the world can have a negative impact on mothers, babies, families, and even the country. Research by Rawat, et al (2018) states that one of the causes of failure of the breastfeeding process in primiparous and in the first week of delivery is that the mother finds it difficult to attach when breastfeeding and feels that breast milk is not enough. Another study conducted by Jacobs, et al (2013) also proved that the majority of respondents felt that breast milk production was scant, so they decided to provide formula milk. Meanwhile, research conducted by Madhavi and Manikyamba (2016) found that the reason for not giving exclusive breastfeeding was difficulty in the breastfeeding process. Therefore it is necessary to have a method to stimulate milk production at the beginning of postpartum, one of which is oxytocin massage.

**Objectives:** *The purpose of this study was to determine the relationship between the oxytocin massage and baby weight.*

**Methods :** *this study was a pre-experimental research using posttest only design and true-experiment using posttest only control group design. The research locations were in the Mother and Child Health (KIA) Clinic and Midwives Independent Practice (PMB) in Bantul, Sleman, and Gunung Kidul Yogyakarta areas. Implementation from April until September 2020. The population of this study was all the families of postpartum mothers from the first to the third day and after 1 week an evaluation of breastfeeding. The sampling technique uses total sampling was 80 postpartum mothers on the first-third day of childbirth followed until the baby was 2 months old. The research instruments were the oxytocin massage checklist and baby weight observation note sheet. Test analysis using paired t-test.*

**Results:** *The results of this study were that the majority of respondents performed oxytocin massage with a frequency of 2-3 times (85%) and the majority of baby's weight at the age of 2 months was according to age (98.8%). In the results of the bivariate analysis, there was an effect of oxytocin massage education on the family of postpartum mothers with baby body weight ( $p = 0.009$ ).*

**Conclusions:** *Oxytocin massage education on the family of postpartum mothers there was significant with baby weight.*

**KEYWORD :** *oxytocin massage; postpartum; baby weight*

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## **INTRODUCTION**

Postpartum is the period after giving birth to a baby, approximately up to 40 days. The postpartum period is the stage of introducing the baby after birth and how to provide care for the baby, starting from providing nutrition to preventing infection. Nutrition for newborns is carried out through good breastfeeding, namely exclusive breastfeeding, but sometimes mothers experience difficulties in breastfeeding because of the assumption that the milk has not come out and is still rigid in breastfeeding, especially for young mothers who give birth for the first time. According to the World Health Organization (WHO), exclusive breastfeeding is that mothers only give breast milk without giving the baby complimentary food and drinks other than breast milk including plain water during breastfeeding (except medicines and vitamin or mineral drops) from birth to 6 months of age. After 6 months, babies can be introduced

to complementary foods and are advised to continue breastfeeding for two years or more (1). The percentage of exclusive breastfeeding in Indonesia in 2018 itself is still low, namely 65.16%. The eastern part of Indonesia has low coverage, namely 20.43%, followed by Java Province 64.19% and Yogyakarta 67.55% (2).

The Indonesian government strongly supports WHO's policy on exclusive breastfeeding through the issuance of Government Regulation Number 33 of 2012 on Exclusive Breastfeeding (3). The hope of this policy, all stakeholders will contribute to the success of exclusive breastfeeding coverage in Indonesia. The exclusive breastfeeding program is one of the preventive measures against the problem of nutritional status of infants and toddlers in Indonesia. The coverage of nutritional status in Indonesia is based on the results of Basic Health Research (Riskesdas) in 2018 that the percentage of malnutrition among

children aged 0-23 months in Indonesia is 3.8%, while the percentage of malnutrition is 11.4% (2).

The practice of breastfeeding has always been a trending topic in recent years. Interventions are developed at various levels designed to increase the success of the practice of breastfeeding in mothers. The practice of breastfeeding is not solely determined by biological factors but is also largely influenced by the mother's socio-economic status, education, and income. Another study conducted by Suresh et al explained that breastfeeding problems are a major contributor to breastfeeding failure. Some of the trends predicting breastfeeding failure are accelerated discharge times of mother-infant partners from the hospital due to personal factors and improper management of breastfeeding problems. The research also explains that there is still a lack of data and a minimum of accurate information in developing countries (4).

Low exclusive breastfeeding coverage can be detrimental, especially for babies, mothers, families, and even the country. This is because breast milk has many benefits, Anatolitu describes the benefits of breastfeeding for the developing baby's body, including the baby's weight (5). Madhavi and Manikyamba found supporting factors for exclusive breastfeeding, namely parity, antenatal care, mode of delivery, baby weight, time of early breastfeeding initiation, and pre-lactal feeding(6). Yacub's research, Gul identified the reasons for not giving exclusive breastfeeding were low milk production, working mothers, sick/weak mothers, and sick babies (7). Kristina also describes the reasons for working mothers not to provide exclusive breastfeeding, namely feeling lazy, high workload, limited leave time, lack of infrastructure and the demands of the family's economic needs that require work(8).

Based on research conducted by Rawat, et al, it is explained that one of the causes of failure of the breastfeeding process in primiparous and in the first week of childbirth is that the mother

finds it difficult to attach when breastfeeding and feels that breast milk is not enough(9). Another study conducted by Jacobs, et al also proved that the majority of respondents explained that mothers felt that breast milk production was low, so they decided to provide complimentary milk(10). Meanwhile, research conducted by Madhavi and Manikyamba found that the reason for not giving exclusive breastfeeding was difficulty in breastfeeding (5).

From the above studies, it can be proven that the failure of the breastfeeding process is not due to the mother's biological factors but rather due to difficulties for the mother in her first role so that this affects improper attachment techniques during breastfeeding and a sense that milk production is scant and obstructed. The science that continues to innovate has found that the presence of oxytocin massage can increase breast milk production (11). Oxytocin massage has been shown to increase relaxation, sleep more comfortably and with quality, reduce pain, reduce stress and help increase the hormones oxytocin and prolactin, thereby facilitating breastfeeding and milk production. Breast milk is the best nutrition for babies which affects their growth. Based on the description above, the researcher is interested in conducting a study with the title of the effect of oxytocin massage education in postpartum mother families on baby weight. The purpose of this study was to determine the relationship between the frequency of oxytocin massage and baby weight.

## **MATERIALS AND METHODS**

This research was pre-experimental research was carried out using Posttest Only Design, namely providing education about oxytocin massage for post-partum mothers, then post-testing on the family of post-partum mothers to do oxytocin massage or not. As well as the true experiment using the Posttest Only Control Group Design, which is to compare the family of post-partum mothers who do oxytocin massage with those who

don't do it with the baby's weight. The research locations were in the Mother and Child Health (KIA) Clinic and Midwives Independent Practice (PMB) in Bantul, Sleman, and Gunung Kidul Yogyakarta areas. Implementation from April until September 2020. The population of this study was all the families of postpartum mothers from the first to the third day and after 1 week an evaluation of breastfeeding. The sampling technique uses total sampling was 80 postpartum mothers on the first-third day of childbirth followed until the baby was 2 months old. Inclusion criteria for respondents were family members of the postpartum mother who accompanied the mother from the first day to the third day, including birth mothers, in-laws and husbands of postpartum mothers, postpartum mothers who were willing to become respondents, postpartum mothers who had just given birth to normal and healthy babies. Exclusion criteria include postpartum mothers who have wounds on the back, chest, and neck, postpartum mothers who experience chronic disease, postpartum mothers who experience postpartum infection, postpartum mothers who experience complications during the postpartum period. The research instruments were the oxytocin massage checklist and the baby's weight observation note sheet. The bivariate analysis test used paired t-test.

## RESULTS AND DISCUSSION

The results of this study are as follows:

**Table 1. Respondent Characteristics**

Characteristics	n	%
<b>Ages</b>		
<20 years old	3	3.8
20-30 years old	52	65.0
>30 years old	25	31.3
<b>Parity</b>	n	%
Primipara	33	41.3
Multipara	47	58.8
amount	80	100.0

*sources: Primary data 2020*

The majority of respondents in this study were in the reproductive age range of 20-30

years (65%) and multiparous (58%). Based on the age category, respondents are of healthy reproductive age and adults. The maturity of a person greatly influences the process of receiving new information and making decisions. In this study, it was explained that mothers are willing to receive oxytocin massage education, which is closely related to the willingness of mothers to do oxytocin massage, which is carried out by the family of the postpartum mother (husband or accompanying family member).

The majority of mothers' parity status in this study is multiparous, meaning that the mother has had previous birth experiences. Through previous childbirth experiences, of course, mothers will be more responsive to new things related to previous experiences. It can be concluded that based on these characteristics, it is very supportive to be given oxytocin massage education and to do massage by the family so that it will support the implementation of this research.

### Univariate Analysis Results

Frequency distribution based on the willingness of oxytocin massage education, type of family who does oxytocin massage, frequency of oxytocin massage, the weight of babies aged 2 months, nutritional status of infants aged 2 months, body length of infants aged 2 months, and head circumference of infants aged 2 months.

The results of the univariate analysis in this study showed that all respondents were willing to be given oxytocin massage education, a half of respondents who did oxytocin massage after being given education, the majority of the oxytocin massage by the family was carried out by the husband of the postpartum mother (91.3%), the frequency of oxytocin massage in this study was mostly carried out 3 times. The results of the majority of infants at 2 months of age were in the appropriate category (87.5%), the majority of infants' nutritional status was in the normal

**Table 2. Variable Frequency Distribution**

Variable	Frequency	%
The willingness of Oxytocin Massage Education in Postpartum Families	N	%
Yes	80	100
Type of Family Postpartum mothers who do oxytocin massage	N	%
Husband	73	91.3
Biological mother	2	2.5
Sisters	4	5
Mother-in-law	1	1.3
Oxytocin Massage after given education of oxytocin massage	N	%
No	40	50
Yes	40	50
New Born Baby Weight	N	%
Normal	77	96.25
Low-Weight	3	3.75
Baby Weight 1 month	N	%
Weight Not Appropriate	6	7.5%
Weight Appropriate	74	92.5
Baby Weight 2 months	N	%
Weight Not Appropriate	10	12.5
Weight Appropriate	70	87.5
Distribution of Nutritional Status for Babies at 2 Months Old	N	%
Less	10	12.5
Normal	68	85
More	2	2.5
2-Month-Old Baby Body Length	N	%
Incorrect Body Length	1	1.3
Body Length Appropriate	79	98.8
Frequency Distribution of Infant Head Circumference at 2 months of Age	N	%
It is not following	13	16.3
Corresponding	67	83.8

sources: Primary data 2020

**Tabel 3. The average weight gain of a baby 2 months**

Variable	Mean	Median	Minum	Maksimum
Baby Weight 2 Months	1361.00	1287.50	380	3100

sources: Primary data 2020

category (85%), the majority of infants aged 2 months were in the appropriate category (98.8%) and the baby's head circumference the majority of 2 month olds were in the appropriate category (83.8%). The role of husbands in supporting oxytocin massage in this study is very large, this is following Doko's 2019 research that husbands play an important role in oxytocin massage which

affects breast milk production <sup>(11)</sup>. Based on table 3 Weight gain in infants between the first and second months there is an average increase of 1361 grams. The baby's weight gain is an indicator of the fulfillment of baby's nutrition as well as a measurement of the baby's growth and development.

### Bivariate Analysis

The results of the bivariate analysis of the oxytocin massage with the baby's weight.

Based on the results of the bivariate analysis between the oxytocin massage by the postpartum mother's family on the baby's body weight, it was found that the results were significant.

**Table 4. Relationship Between The Oxytocin Massage And Baby Weight**

	Variable	p-value
Oxytocin Massage	Baby weight	0.009

source: primary data 2020

### DISCUSSION

Oxytocin massage is very effective in the early part of the postpartum. In this phase, stimulation of the prolactin hormone is needed, one of which is by giving oxytocin massage. Hormone stimulation through oxytocin massage is very beneficial for postpartum mothers at the beginning of the puerperium, which stimulates the hormone prolactin to produce breast milk. In the early part of the puerperium, breastfeeding problems are often encountered, especially related to milk production. Oxytocin massage is a simple relaxation therapy that is carried out by massaging the back of the mother to the 5<sup>th</sup> rib with the help of another person, namely a companion during the postpartum period of the mother. The companion, in this case, is the family of the postpartum mother.

The closest family will provide a strong emotional relationship and can be an aspect of maintaining client privacy. In this study, there are several types of families involved in oxytocin

massage. The results showed that the majority of the postpartum mother's families played a role in oxytocin massage, namely husbands (91.3%). Husbands have a very important role in providing assistance and support to postpartum mothers, of course, in this case, providing oxytocin massage as part of the needs of postpartum mothers. This is in line with Doko's 2019 research that giving oxytocin massage by the husband affects increasing breast milk production(12). Research and community service by Prijatni 2016 in providing skills for husbands to be able to do oxytocin massage to facilitate breastfeeding production in mothers during breastfeeding, this activity shows that there is a commitment and breastfeeding care group which states that the success of exclusive breastfeeding is very dependent on the role of the father / husband(13).

Breast milk production in postpartum mothers is influenced by the hormonal function of lactation in the mother. One technique to stimulate the production of the hormones oxytocin and prolactin is through oxytocin massage. Through this massage, milk production can be abundant so that the baby's nutritional needs will be fulfilled. This is consistent with Hadianti's research in 2016 that post-SC mothers who were given oxytocin massage were 7 times more likely to excrete colostrum on the first postpartum day(14). The Sitohang study found that there was a significant difference in postpartum mothers who were given breast massage and oxytocin massage on breast milk production(15). Other factors affect the production of breast milk in postpartum mothers, according to Rayhana's 2017 study, maternal milk production is influenced by the food intake of the postpartum mother, peace of mind and mind of the mother, the frequency of pumping breast milk, the use of contraceptives during the postpartum period, and breast care(16). The factor of food intake in postpartum mothers has a large influence on the production of breast milk for postpartum mothers. Postpartum mothers require

five times more nutritional intake when compared to the period before breastfeeding. The smooth production of breast milk in the first week of the puerperium determines the fulfillment of the baby's milk intake.

The smooth production of breast milk in the first week of the puerperium determines the fulfillment of the baby's milk intake. Breast milk intake in the first week of the puerperium is one indicator of meeting the baby's nutritional needs. The most important baby's nutritional needs are exclusive breastfeeding. Through the fulfillment of these nutritional needs, the baby's body weight will increase, although at the beginning of birth the baby's weight will experience a temporary decrease. Baby weight is one of the most relevant and easy to observe indicators to determine the nutritional status and growth of the baby. Infant weight monitoring in this study was carried out until the baby was 2 months of age. The results showed that the majority of infants at the age of 2 months were in the age-appropriate weight category.

The oxytocin massage will increase milk production which is closely related to the baby's weight. The results of this study indicated that there was a significant relationship between the frequency of oxytocin massage by the postpartum mother's family on the weight of 2 months old babies ( $p = 0.000$ ). The results of a similar study by Doko 2019 showed that there was a significant difference in the mean weight of babies after being given treatment between the intervention group and the control group ( $p = 0.003$ ) (12). This research is also in line with Dewi 2018's research showing that there is an effect of oxytocin massage frequency in postpartum mothers on a significant increase in infant weight  $p = 0.00$  ( $p < 0.05$ ), where the largest increase in infant weight was found in the oxytocin massage group. 3x a day4 (17). Nugraheni's 2016 research showed the results of the SPEOS (Stimulating Massage Endorphin, Oxytocin and Suggestive) method,

which affected milk production and increased infant weight in postpartum mothers in Bengkulu City at BPM6. Based on the results of the study, oxytocin massage is one of the effective techniques for baby weight(18). Simbolon's research in 2019 showed a significant effect of oxytocin massage on infant weight gain. Fendristica in 2019 there were also significant results between giving oxytocin massage and increasing baby weight with an average baby weight of 484.4 grams(19)

Breastfeeding mothers who receive oxytocin massage will have higher levels of the hormone oxytocin. High levels of the hormone oxytocin affect fat metabolism in the mother's body, resulting in lipolysis. The presence of lipolysis will occur gluconeogenesis resulting in increased glucose levels in the blood and breast milk. The increase in glucose levels in breast milk is within normal limits along with the occurrence of gluconeogenesis, this will significantly affect the baby's weight gain (Gabay, 2002 in Ariani, 2017) (20)

An increase in infant weight is one way to determine the adequacy of nutritional intake in infants as an indicator for assessing infant growth and development. However, there are still other factors including basic causes (economic structure and political structure), indirect causes, namely family food security, parenting, utilization of health services and environmental sanitation, and direct causes, namely food intake (Soetjningsih, 2012) 21.

## CONCLUSION AND RECOMMENDATION

The results showed that oxytocin massage education had a significant effect on increasing the baby's weight. Oxytocin massage is very easy to do, has positive benefits for milk production, baby weight gain and relaxation for postpartum mothers. Health care facilities should consider oxytocin massage to be part of the regular procedure for postpartum care in the first 2 hours until the 3rd day of the puerperium.

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