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Effect of oxytocin massage on uterine involution in vaginam post partum women in self practice of the salabiah midwife

Hafsah Us [1], Myrna Lestari AB [2], Elvieta [3], Mey Elisa Safitri[4]

[1,2,3]Midwifery Department, Ministry of Health Republic of Indonesia, Poltekkes Kemenkes, North Aceh, Indonesia

[4]Midwifery Department, Institut Kesehaan Helvetia Medan, Indonesia

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ABSTRACT

Introduction: Uterine involution is a process in which the uterus returns to its pre-pregnancy state weighing about 30 grams. Oxytocin massage is massage on the cervical spine along the cervical spine to the 5th to 6th ribs, for 2-3 minutes. Objective: The aim of the study was to analyze the effect of oxytocin massage on uterine involution in vaginal post partum mothers in the independent midwife practice of Salabiah, Banda Sakti district, Lhokseumawe city. Method: The research design used the Quasy Experimental method with the Non-equivalent Control Group Design approach, two groups (the treatment group and the control group). Total population of 12 post partum mothers. The sample technique used incidental sampling as many as 12 post partum mothers and a control group. Data were analyzed by Mann Whitney test. The Result: The results showed that before oxytocin massage in the treatment group and control group all uterine involutions were normal, after oxytocin massage in the treatment group most of the uterine involutions were normal, while in the control group most of the uterine involutions were abnormal. it was found that there was an effect of oxytocin massage on uterine involution with the results of the Mann Whitney test p = 0.002. Conclusion: The conclusion in this study is for health workers in the Researchers suggest that oxytocin massage can continue to be carried out in providing postnatal services to patients so that the quality of care for postpartum mothers can increase.

Corresponding Author:

Hafsah Us,
Midwifery Department,
Ministry of Health Republic of Indonesia,
Poltekkes Kemenkes, North Aceh, Indonesia
Email: hafsahusman30@gmail.com

INTRODUCTION

The postpartum period (puerperium) is the period that begins after the placenta comes out and ends when the uterine devices return to their original state (before pregnancy). The postpartum period lasts for approximately 6 weeks (Asih, 2018). After delivery, the condition of the mother's body will change anatomically, one of which is the return of the uterus to its original size. This

process is known as uterine involution. If there is a failure of uterine involution to return to a non-pregnant state, it will cause sub-involution (Umu Qonitun & Mariyatul Qiftiyah, 2021).

Oxytocin massage is massage on the cervical spine along the cervical spine (cervical vertebrae) to the 5th to 6th costae bones and will stimulate the work of the parasympathetic nerves to convey commands to the back of the brain (hypothalamus) in the posterior pituitary to secrete the hormone oxytocin so that it contracts (Hidayah & Anggraini, 2023). Uterus and injecting breast milk. The phenomenon found at the Adi Guna Surabaya Inpatient Main Clinic is sub-involution (Astutik, 2019). Based on the results of the initial data survey, 25% oxytocin massage prevented post-partum bleeding and accelerated the process of uterine involution (Nurainun & Susilowati, 2021). PMB Salabiah, Banda Sakti District, Lhokseumawe City, oxytocin massage was not done because it was too complicated, even though oxytocin massage can help mothers to accelerate uterine involution.

WHO says 500,000 women die every year from complications of pregnancy and childbirth, and most of the deaths occur during or immediately after childbirth. The most common causes of death are bleeding and infection after childbirth (Apreliasari & Risnawati, 2020). The highest maternal mortality rate (MMR) in East Java in 2019 was in Situ-bondo Regency, which was 198.00 per 100,000 live births, with 18 people. Meanwhile, the lowest MMR was in the city of Batu, which was 31.23 per 100,000 live births or as many as 1 person. The three highest causes of maternal death in 2019 are pre-eclampsia/eclampsia, which is 31.15% or as many as 162 people. and bleeding, namely 24.23%, other causes, namely 23.1% or 120 people. Meanwhile, the causes of infection increased from 2018, namely 6.73% or as many as 35 people.

Based on data from the Aceh Provincial Health Office, it is known that the maternal mortality rate (AKI) in 2017 was 143/100,000 live births (KH), in 2018 the MMR was 138/100,000 KH, and in 2019 the MMR was 172/100,000 KH, while in 2020 the MMR settled at 172/100,000 KH. This data has increased compared to the maternal mortality rate in 2011 of 116.01/100,000 KH (Hidayah & Anggraini, 2023). Postpartum period; a mother needs information and counseling regarding care for the baby, and symptoms of problems that may arise, including personal health, hygiene, and the healing period, as well as health services for suspicions and the appearance of signs of complications (Widiawati & Puji Utami, 2020).

Based on initial data collection at PMB Salabiah, Banda Sakti District, Lhokseumawe City, there were 243 post-partum mothers vaginally within 1 year to be exact in January-December 2021, while in January-July 2022 there were 125 post-partum mothers vaginally. The results of interviews from health workers, to 5 vaginal post partum mothers, 2 post partum mothers TFU palpable halfway between the central symphysis on day 7, 3 post partum mothers TFU palpable 2 fingers below center on day 7.

Uterine involution or shrinkage is a process in which the uterus returns to its pre-pregnancy state weighing about 30 grams (Sembiring, 2019). This process begins immediately after the placenta is born due to contractions of the smooth muscles of the uterus. Factors that affect the process of uterine involution are nutritional status, breastfeeding, early mobilization, postpartum exercise, complications of childbirth, parity, age. The problem with uterine involution is sub-involution (Khabibah & Mukhoirotin, 2019). Uterine sub-involution is the process of late uterine return caused by endometrial infection, retained placenta, blood clot, or uterine myoma. The impact if the sub-involution is not handled will cause continued bleeding or what is called post partum haemorrage until death (Wahyuni & Nurlatifah, 2017).

Efforts to prevent postpartum hemorrhage can be carried out since the 3rd and 4th stages of labor by administering oxytocin (Erwhani & Ariyanti, 2022). The hormone oxytocin plays an important role in the process of uterine involution. Uterine involution or uterine shrinkage is a process in which the uterus returns to its pre-pregnancy state weighing about 30 grams (Oktafirnanda et al., 2019). To control the occurrence of bleeding from the placenta by improving strong myometrial fiber contraction and retraction with oxy-tocin massage (Nurainun &

Susilowati, 2021). Therefore, maintaining uterine contractions through massage to stimulate the release of the hormone oxytocin is an important part of postpartum care (Yohmi, 2019). Oxytocin can be obtained in various ways either through oral, intra-nasal, intra-muscular, or by massage which stimulates the release of the hormone oxytocin (Widiawati & Puji Utami, 2020). As written that care with repeated massage can increase the production of the hormone oxytocin and accelerate uterine involution (Falikhah, 2018). Oxytocin massage is carried out for 2-3 minutes. Oxytocin massage is more effective when done twice a day, namely every morning and evening. The effect of the oxytocin massage itself can be seen after 6-12 hours of massage (Widiawati & Puji Utami, 2020).

The implications of the research for the field of science is This study explains that there are factors that affect the value of the effectiveness of oxytocin massage on milk expenditure, where the related factors are the internal components optimizing breastfeeding so that there are still many problems found in post partum mothers. In this study efforts to increase the value of the effectiveness of massage oxytocin in the expenditure of breast milk, namely by improving the factors factors that have been previously described so that it is hoped that it will improvements have been made or the problem has been resolved. Based on the description and explanation on the background mentioned above, the researcher is interested in conducting research on the Effect of Oxytocin Massage on Uterine Involution in Vaginal Postpartum Mothers in the Independent Practice of Sala-biah Midwives, Banda Sakti District, Lhokseumawe City.

RESEARCH METHOD

Research design

The research design used in this study was a quasi-experimental design with a Pretest-Posttest Design, where this design did not use a control group, then a pretest was carried out in both groups, followed by giving intervention to each group and in -End by doing a posttest in each group after giving the intervention

Research Location and Time

Research sites, this research was conducted at the Salabiyah Midwife Independent Practice, Banda Sakti District, Lhokseumawe City,b. Research time. This research was conducted on June 8-10 August 2022. Population, the population in this study were all vaginal post partum mothers at PMB Salabiyah, Banda Sakti District, Lhokseumawe City, totaling 12 people who met the researcher's criteria. Sample, the sample in this study were post partum mothers at PMB Salabiyah, Banda Sakti District, Lhokseumawe City who met the sample criteria in this study were 12 people. Data collection technique, research implementation procedures starting from the preparation stage and the implementation stage. The implementation phase consists of pre-test, intervention, and post-test. Data analysis techniques, this study used bivariate analysis because it was to determine the effect of oxytocin massage on uterine involution in post partum mothers. This study used statistical test analysis using the Mann Whitney test with the help of the SPSS computer program. It conducted a different test for 2 groups, namely the treatment group and the control group with a significance level (α.) = 0.05, which means that H1 is accepted if $p < 0.05$, it means that there is a difference in the results of post oxytocin massage in the treatment group and the control group, and H1 is rejected if $p > 0.05$ which means there is no difference in the results of post oxytocin massage in the treatment group and the control group.

RESULTS AND DISCUSSIONS

Research design

This study used a quasi-experimental method (Quasi Experiment) with the approach used in this study was a pretest and posttest without control group design, namely a research design using observation before the experiment and after the experiment.

Table 1. Characteristics of Respondents Based on Respondent's Age in PMB Salabiya Kec. Banda Sakti Lhokseumawe City in 2022

Characteristics	Control		Intervension	
Age	Frequency	Presentase	Frequency	Presentase
20-35 Years	4	66,6	4	66,6
36-45 Years	2	33,3	2	33,3
Employed	Frequency	Presentase	Frequency	Presentase
IRT	3	50	5	83,3
Self-employed	3	50	1	16,7
Parity	Frequency	Presentase	Frequency	Presentase
2	4	66,6	5	83,3
>2	2	33,3	1	16,7
Total	6	100	6	100

Based on the table above, Table 1. shows the age data of the control group of post partum mothers 20-35 years old as many as 4 people (66.7%), while the age of 36-45 years as many as 2 people (33.3%). In the treatment group, there were 4 postpartum mothers aged 20-35 years old (66.7%), while 2 people aged 36-45 years old (33.3%). obtained parity data of the control group of post partum mothers who had two children as many as 4 people (66.7%), while those who had three children as many as 2 people (33.3%). The intervention group itself obtained data on the parity of post partum mothers who had two children as many as 5 (83.3%), while those with three children had as many as 1 (16.7%).

Table 2. Uterine involution before oxytocin massage on post partum mothers PMB Salabiyah Kec. Banda Sakti Lhokseumawe City in 2022

Uterine involution	Control		Intervension	
	Frequency	Presentase	Frequency	Presentase
Normal	6	100	6	100
Not Normal	0	0	0	0
Total	6	100	6	100

Based on the table, Shows that uterine involution before oxytocin massage in the treatment group 6 people (100%) had normal uterine involution and none had abnormal uterine involution. While the control group obtained the same results, namely 6 people (100%) had normal uterine involution and none had abnormal uterine involution.

Table 3. Uterine involution after oxytocin massage on post partum mothers at PMB Salabiyah Kec. Banda Sakti Lhokseumawe City in 2022

Uterine involution	Control		Intervension	
	Frequency	Presentase	Frequency	Presentase
Normal	4	66,6	2	33,3
Not Normal	2	33,3	4	66,6
Total	6	100	6	100

Based on table 3. Shows that uterine involution after oxytocin massage in the treatment group that experienced normal uterine involution was 4 people (66.7%), while only 2 people who experienced abnormal uterine involution (33.3%). In the control group, 2 people (33.3%) did not have oxytocin massage and were only observed to get normal uterine involution values less than 2 people (33.3%), while those who experienced abnormal uterine involution were more, 4 people (66.7%).

Tabel 4. Effect of oxytocin massage on uterine involution in post partum mothers PMB Salabiyah Kec. Banda Sakti Lhokseumawe City in 2022

Uterine involution	Control		Intervension	
	Frequency	Presentase	Frequency	Presentase
Normal	2	33,3	4	66,6
Not Normal	4	66,6	2	33,3
Total	6	100	6	100

Based on Table, showed that there was an effect of oxytocin massage on the treatment group after oxytocin massage which experienced normal uterine involution of 4 people (66.7%). In the control group, 2 people (33.3%) had fewer normal values than oxytocin massage and were only observed to have normal values. Based on statistical tests with the Mann-Whitney test showing that $p = 0.002 \leq \alpha = 0.05$, the decision is H0 is rejected and H1 is accepted, which means there are differences in the treatment group and the control group in the effect of oxytocin massage on uterine involution in post partum mothers. This means that there is an effect of oxytocin massage on post partum mothers

Discussion

Uterine involution in post partum mothers before oxytocin massage in the treatment group and control group at PMB Salabiyah Kec. Banda Sakti Lhokseumawe City

Uterine involution data in table 4.4 shows that of the 6 respondents in the treatment group before the oxytocin massage was carried out, 6 people (100%) had normal uterine involution results, and none had abnormal uterine involution, while the control group pretest experienced normal involution. 6 respondents and none had abnormal uterine involution. All 12 respondents in the treatment group and control group experienced uterine involution in the normal category, because all respondents included the inclusion criteria, namely mothers who received oxytocin and methergine therapy. Oxytocin is a hormone that can increase the influx of calcium ions into the body because oxytocin can stimulate myometrial contractions (Wahyuni & Nurlatifah, 2017) and breastfeeding mothers because this action can affect the uterine involution process so that 6 respondents in the treatment group before the oxytocin massage were carried out were included in the normal category (BKKBN, BPS, Kementrian Kesehatan, 2018).

Uterine involution is a process in which the uterus returns to its pre-pregnancy state. This process begins immediately after the placenta is born due to contractions of the smooth muscles of the uterus (Ministry of Health RI, 2015). Contractions in the uterus are caused by the meeting between actin and myosin, the meeting between actin and myosin is influenced by the presence of myocin light chine kinase (MLCK) and ATP-dependent myosin, this process can accelerate the entry of calcium ions into the intra-cell, so that it can strengthen contractions 56 uterus (Muslimah et al., 2020).

The breasts that have been prepared during pregnancy are filled with the result that the glands are filled with milk, the baby sucks, and milk is released (World Health Organization (WHO), 2019). The process is that when the baby sucks the smooth muscles in the nipples are stimulated, stimulation by the nerves is passed on to the brain. Then the brain orders the pituitary gland at the back to release the hormone oxytocin which is carried to the smooth muscles in the breasts so that the smooth muscles in the breasts contract by contracting these muscles, which can cause contractions in the uterus (Handayani & Rustiana, 2020).

According to the assumptions of the pre-test uterine involution researchers in the control group and the treatment group are included in the normal uterine involution category, because respondents are included in the inclusion criteria category, namely receiving oxytocin and methergine therapy and breastfeeding mothers, according to the theory above giving oxytocin and breastfeeding mothers can speed up the process uterine involution, as evidenced by the results of

the study, there were post partum mothers in the control group who experienced normal uterine involution of 6 people (100%) and the treatment group experienced normal uterine involution of 6 people (100%) with uterine involution of 2-3 fingers below the center.

Uterine involution in post partum mothers after oxytocin massage in the treatment group and the control group at pmb salabiyah kec. Banda sakti lhokseumawe city in 2022.

Uterine involution data in table 4.5 shows that out of 6 respondents. Uterine involution data in table 4.5 shows that of the 6 respondents in the treatment group after oxytocin massage, 4 people (66.7%) had normal involution results, 2 people (33.3%) experienced abnormal uterine involution, while the post control group obtained results 2 people (33.3%) had normal involution, 4 people (66.7%) had abnormal uterine involution. The number of parieties affects uterine involution, which has 3 children 100% had abnormal uterine involution. Table 5.3 shows the parity data for the control group of post partum mothers who have two children (66.7%), while there are 2 children (33.3%) who have three children. The intervention group itself obtained parity data from post partum mother patients who had two children as many as 5 people (83.3%), while those who had three children were 1 person (16.7%).

Uterine involution is a process in which the uterus returns to its pre-pregnancy state, weighing about 30 grams. This process begins immediately after the placenta is born due to contractions of the smooth muscles of the uterus (Ministry of Health of the Republic of Indonesia, 2015). Failure of uterine involution to return to a non-pregnant state will cause sub-involution (Nurlina et al., 2021).

The most common cause of uterine sub-involution is retained placental fragments which will cause infection and late postpartum haemorrhage. Efforts to treat postpartum hemorrhage are by administering oxytocin which has an important role in stimulating uterine smooth muscle contractions so that bleeding can be resolved (Saputri et al., 2019). The hormone oxytocin can be produced through stimulation of oxytocin massage which will speed up the work of the parasympathetic nerves to convey orders to the hypothalamus to produce oxytocin (Bukhari et al., 2021). This study is in accordance with (Nugraeny et al., 2022) which shows the results of the study that the decrease in the height of the uterine fundus in the massaged group was 61.6% normal and 38.4% of the decrease in the height of the uterine fundus was not normal with p = 0.004, which means that there is an effect of massage oxytocin on uterine involution.

According to the researchers' assumptions, after oxytocin massage was performed in the treatment group that experienced abnormal uterine involution 2 people (33.3%), because of the 2 respondents 1 respondent was 37 years old and 1 respondent was 32 years old, the two respondents 1 respondent had 2 children and 1 respondent has 3 children so the uterine involution process is slow due to having given birth more than 2 times, it can also be due to the old age of the mother which can reduce the elasticity of the uterine muscles to contract, according to theory (Endang & Siwi, 2017) which says mothers who are older much influenced by the aging process will occur changes in metabolism, namely an increase in the amount of fat, decreased muscle elasticity.

The effect of oxytocin massage on uterine involution in vaginal postpartum mothers at pmb salabiyah kec. Banda sakti lhokseumawe city in 2022

Uterine involution data in table 4.6 Based on the results of research with a total of 12 respondents. 6 treatment groups and 6 control groups. Treatment group before the oxytocin massage was performed, the results obtained were normal uterine involution values for 6 people (100%) and none had abnormal uterine involution, after the oxytocin massage, 4 people (66.7%) experienced normal uterine involution, while those who experienced uterine involution did not normal as many as 2 people (33.3%). In the control group, it was found that during the pre-test there were 6 women (100%) who had normal uterine involution and none had abnormal uterine involution. On the last day the post-test was carried out in the control group, the results of normal

uterine involution were 2 59 people (33.3%), while those who experienced abnormal uterine involution were 4 people (66.7%). There were differences in the effect of oxytocin massage on the treatment group and the control group, with the treatment group having more normal involution results of 4 people (66.7%), while the control group had fewer 2 people (33.3%). The statistical tests used in both the treatment group and the control group were analyzed using the Mann - Whitney statistical test to obtain p = 0.002 where the p value <0.05 means that there is a difference in the treatment group and the control group of oxytocin massage on uterine involution in the Salabiyah Midwife Independent Practice Banda Sakti District, Lhokseumawe City In this study, researchers used the theory of human caring, according to Jean Watson in understanding the well-known nursing concept with the theory of human knowledge and caring for humans (Yanti et al., 2018). Caring is a transactional relationship between care providers (nurses) and care recipients (clients), which aims to improve and protect patients, and support their recovery (Nurlina et al., 2021).

According to researchers, giving oxytocin massage can affect the uterine involution process and can prevent bleeding. Oxytocin massage can stimulate the work of the parasympathetic nerves to convey commands to the back of the brain (hypothalamus) in the posterior pituitary to release the hormone oxytocin so that it contracts the uterus and injects milk (Handayani & Rustiana, 2020). So that this research can affect the release of the hormone oxytocin and help involution of the mother's uterus. Oxytocin massage is done 2-3 minutes. Oxytocin massage is more effective when done twice a day, namely every morning and evening (Elsera et al., 2021).

The results of this study are in line with research (Sofia, 2017) that there is an effect of oxytocin massage on uterine involution in post partum mothers, where all respondents were given oxytocin massage treatment, namely 6 respondents (50%) post partum mothers 0-7 days the uterine involution process was running optimally while the control respondents were 5 respondents (41.6%) post partum mothers 0-7 days the involution process was not normal and 1 respondent (8.3%) had normal involution. Based on the theory and research above, according to researchers, uterine involution that occurs in post partum mothers who are given oxytocin massage, 2 people experience uterine involution still, in general, uterine involution for day 3 is >3 fingers below the center, but there are 2 respondents who have uterine involution still due to the many factors of age and parity that can also affect the process of uterine involution, age and parity factors also affect the process of decreasing the height of the uterine fundus so that the age of 37 years and has 3 children the process of stretching the muscles and the level of elasticity is reduced according to which says that the more the number of children, the less the process of stretching the muscles and the level of elasticity (Muslimah et al., 2020). The decrease in the height of the uterine fundus determines the condition and health of the post partum mother. In line with the theory (Lowdermilk et al., 2013) which says. Within 12 hours, the fundus will rise to the level of the umbilicus, or will fall below the umbilicus (Septiana et al., 2022). Then the fundus will descend about 1 cm each day. Based on the analysis of the effect of oxytocin massage on uterine involution, it is known that out of 6 respondents in the control group after oxytocin massage, there were 2 people with uterine involution 3 fingers below the center, while in the control group there were 4 people with uterine involution 3 fingers below the center. Based on statistical tests using the Mann-Whitney test, it shows that $p=0.002 \leq \alpha = 0.05$, so the decision is H0 is rejected and H1 is accepted, which means that there is an effect of oxytocin massage on uterine involution in postpartum mothers. This means that there is an effect of oxytocin massage on post partum mothers.

CONCLUSION

Based on the results of the research and discussion of the effect of oxytocin massage on uterine involution in post partum mothers at the, it can be concluded as follows: Uterine involution in the treatment group and control group before oxytocin massage was all normal. Uterine involution after oxytocin massage in the treatment group was mostly normal, uterine involution in the control group was mostly abnormal. Oxytocin massage has an effect on uterine involution in vaginal post

partum mothers. researchers have limited research that only wanted to know the effect of oxytocin massage on uterine involution. Therefore it is necessary to develop research on the effect of massage oxytocin on the impact of long-term postpartum blues such as postpartum depression, other follow-up studies are also such factors effect of oxytocin massage such as massage pressure, mother's weight.

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