



Efficacy of Oxytocin Massage on Involution of Uterus Among Postnatal Mothers

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ABSTRACT

After a lady has cautiously accommodated the physiologic adversities of pregnancy and three phases of work, the consideration of essentially everybody regularly goes to the baby. Absence of sufficient uterine withdrawals during the puerperium can repress the cycle of uterine involution leading to many complications. The study aim is to assess the efficacy of oxytocin massage on involution of the uterus in the experimental and control group among postnatal mothers. A quasi-experimental research design was conducted among 60 postnatal mothers who were selected by Convenience sampling technique. Semi-structured interview method was used to collect the demographical data and by measuring the length between the fundus of the uterus and Symphysis Pubis with a measuring tape. Oxytocin massage was given for 15 minutes from 1st- 5th postnatal day. Among 60 samples in the experimental group the level of involution among postnatal mothers in the experimental group, 6 had good involution, 14 had average involution and 10 had poor involution. In the present study, there was a statistically significant association in Postnatal vaginal bleeding and breastfeeding frequency which had shown statistically significant association with post-test level of involution of the uterus among postnatal mothers in the experimental group at $p < 0.05$ level and the other variables had not shown statistical significance. This reveals that oxytocin massage is highly significant in the experimental group because oxytocin hormone which is secreted by the neurons of the hypothalamus during massage stimulates the contraction of uterine smooth muscle by increasing the sodium permeability of uterine myofibrils.

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INTRODUCTION

After a woman has cautiously accommodated the physiologic adversities of pregnancy and three phases of work, the consideration of for all intents and purposes everybody (family, companions, and bystanders) regularly goes to the baby. The huge physical and passionate changes needed to come back from the status of a term pregnancy to the non-pregnant state are overlooked and frequently under assessed. Involution is the process whereby the genital organs revert approximately to the state as they were before pregnancy (Figueiredo *et al.*, 2018).

Promptly following delivery, the uterus turns out

to be firm and withdraws with substitute solidifying and relaxing. The uterus measures around $20 \times 12 \times 7.5 \text{ cm}^3$ (length, expansiveness and thickness) and weighs around 1,000 g. Toward the finish of about a month and a half, its estimation is practically like that of the non-pregnant state and weighs around 60 g. The placental site contracts quickly introducing a raised surface which measures about 7.5 cm and stays raised even at about a month and a half when it measures about 1.5 cm (Paliulyte *et al.*, 2017). The pace of involution of the uterus can be surveyed clinically by noticing the stature of the fundus of the uterus comparable to the symphysis pubis. Following conveyance, the fundus lies about 13.5 cm (5 1/2") over the symphysis pubis. During the initial 24 hours, the level stays consistent; a consistent diminishing in tallness by 1.25 cm (0.5") in 24 hours is watched, so that before second week's over the uterus turns into a pelvic organ (Hadianti and Sriwenda, 2019).

Involution starts by autolysis and phagocytosis. Autolysis, more commonly known as self-digestion, refers to the destruction of a cell through the action of its enzymes. During involution, the muscles undergo some amount of autolysis to reduce in size. Autolysis occurs in response to the withdrawal of placental hormones after the childbirth. Contraction of the interlacing myometrial muscle bundles constricts the intramyometrial vessels and impedes blood flow, which is the major mechanism preventing haemorrhage at the placental site. Myometrial retraction (brachystasis) is a unique characteristic of the uterine muscle that enables it to maintain its shortened length following successive contractions. In addition, large vessels at the placental site thrombosis, which is a secondary haemostatic mechanism for preventing, blood loss. The inadequate myometrial contraction will result in atony, which is the most common cause of early postpartum haemorrhage (Rajbhar and Tiwari, 2019).

Oxytocin is a hormone discharged by the neurons of the nerve centre and put away in the posterior pituitary in mammals. Hypothetically, oxytocin animates constriction of uterine smooth muscle by expanding the sodium porousness of uterine myofibrils. High oestrogen focuses bring down the limit for uterine reaction to oxytocin. Uterine reacts to oxytocin boost as the term of pregnancy increase. Oxytocin influences the subsidiary practices, for example, trust, compassion, social memory, and translation of outward appearances. Oxytocin gives an improved impact of empathy quality, for example, astuteness, quality, and goodness. The capacity of oxytocin is only inverse to the pressure hormone since oxytocin causes somebody to feel

without a care in the world. Oxytocin drives somebody to feel loose, keep away from pressure, have more open correspondence, feel associated, and dispose of disconnected emotions. Oxytocin can cause an individual to be in his/her best state of mind and build up a sentiment of adoring and being cherished. Additionally, oxytocin can actuate hostile to stress, for example, diminished circulatory strain and cortisol levels (Gita and Saeed, 2006).

The incitement of oxytocin is an essential intervention for baby blues women. In the act of baby blues care, such mediation has not gotten a norm of care as it is just given to the individuals who are out of luck. So far, the current mediation has been as a physically controlled oxytocin massage. An individual who is given a back rub builds oxytocin and decreases adrenocorticotropin. Oxytocin can be gotten by different ways either through oral, intranasal, intramuscular or by rub that invigorates the arrival of the hormone oxytocin. Another factor that influences the cycle of uterine involution other than oxytocin is lactation in which clairvoyant incitement is the reflex from the mother's eye to the cerebrum, bringing about oxytocin (Wakasa *et al.*, 2009).

Aini *et al.* (2017) showed effect of Combination of Oxytocin Massage and Hypno-breastfeeding on Uterine Involution and Prolactin Levels in Postpartum Mothers. The examination results show that there was a huge diminishing of uterine involution in the investigation gathering and control bunch after intercession with p-esteem 0.000 (<0.05), and it very well may be seen that the uterine involution in the test gathering (6.05) was quicker than uterine involution in the benchmark group (7.00) (Aini *et al.*, 2017).

The dominant part of the occurrence of maternal mortality is during puerperium period, which is generally brought about by dying. Draining that happens over 24 hours to about a month and a half after birth is because of the absence of satisfactory uterine withdrawals (55-75%). The consequences of examination in the United States found that 25,654 instances of seeping during the puerperium where 79% of the significant causes were uterine atony or absence of uterine constrictions. Absence of sufficient uterine withdrawals during the puerperium can restrain the cycle of uterine involution, causing uterine Subinvolution, which can prompt numerous difficulties (Shyla, 2012). This leads to an increasing alarm to enhance the involution of the uterus with oxytocin massage among postnatal mothers. The researcher has taken a step ahead to prove the efficacy of oxytocin massage on the involution of the uterus among postnatal mothers.

The purpose of the study is to assess the involution of the uterus in both experimental group and control group among postnatal mothers, to assess the efficacy of oxytocin massage on involution of the uterus in experimental and control group among postnatal mothers and to associate the Post-test level of involution of the uterus with the selected demographic variables among postnatal mothers in the experimental group.

MATERIALS AND METHODS

A quantitative approach with a quasi-experimental research design was used to conduct the study (Shyla, 2012). The study was conducted in Saveetha Medical College & Hospital, Chennai, which is a Multi-Specialty hospital. The data were collected using a convenience sampling technique with 60 mothers who met the inclusion criteria. The inclusion criteria for the sampling are mothers with gestational age between 37-42 weeks, all multiparous and primiparous mothers, mothers who had undergone normal and assisted vaginal delivery, mothers who are available at the time of data collection and willing to participate in the present study and mothers who can understand Tamil/ English. Mothers who had operative deliveries and all mothers with high risk factors like postpartum haemorrhage, shock, pre-eclampsia and eclampsia were excluded from the study. The data were collected after obtaining ethical clearance from the Institutional Ethical Committee of Saveetha Institute of Medical Science and Technology. The purpose of the study was explained to the samples and written informed consent was obtained from them. The demographic data were collected using a structured interview questionnaire, and the involution of the uterus was assessed by measuring the length between the fundus of the uterus and Symphysis Pubis after emptying the Bladder in centimetres with a measuring tape. Pre-test was performed after 24 hours postpartum period. The oxytocin massage was given for 15 minutes every morning and afternoon for 4 days. The oxytocin massage speeds up the work of the parasympathetic nerves to deliver the command to the brain to produce oxytocin. The steps of doing the oxytocin massage were: a) Removing the upper mother's clothes so that the breasts hanging off, mother leaning forward, folding her arms on the table in front of her or laying her head on her arm, b) Smearing both hands with baby oil, c) The Massage is started from the seventh cervical to the scapula by using 2 fist with the thumb pointing forward, d) Continue the massage along both sides of the spine (vertebra) starting from the seventh cervical to the

5-6th costae by small circular motion clockwise using both thumbs downwards and then upwards for 15 minutes. The post-test measurement was performed on the 5th day morning. The data were analyzed using descriptive and inferential statistics. The sample characteristics were described using frequency and percentage. Pearson's correlation coefficient was used to assess the efficacy of oxytocin massage on involution of the uterus in the experimental and control group among postnatal mothers. Chi-square was used to associate post-test level of involution of the uterus with the selected demographic variables.

RESULTS

Section A: Sample characteristics

Among 60 samples, 30 belong to the experimental group, majority 16 (53.4%) belong to the age group of 20-25 years, 10 (33.3%) are graduates, 20 (66.7%) are housewives, 6 (20%) with the income between Rs.15001-20000, 16 (53.3%) belong to Hindu religion, 14 (46.6%) reside in a rural area, 26 (86.6%) consume a non-vegetarian diet, 16 (53.3%) do sedentary work, 18 (60%) are multiparas, 26 (86.7%) with a gestation week between 37-38, 28 (93.3%) with normal vaginal delivery, 14 (46.6%) with duration labour between 6-10 hours, 22 (73.3%) Used 1 ampoule oxytocin during 3rd stage of labour, 18 (60%) had Moderate vaginal bleeding (5 pads) during the postnatal period, 22 (73.3%) breastfed 11-15 times per day.

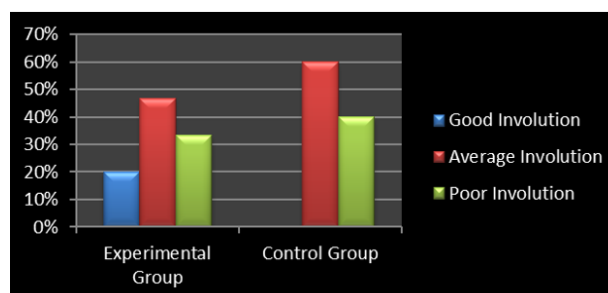


Figure 1: Percentage distribution of level of involution of the uterus among postnatal mothers in both the experimental group and control group

Section B: Level of involution among postnatal mothers

The Level of involution among postnatal mothers in experimental group 6 postnatal mothers had good involution, 14 had average involution and 10 had poor involution whereas in the control group 18 postnatal mothers had average involution and 12 postnatal mothers had poor involution (Table 1 & Figure 1).

Table 1: Frequency and percentage of the level of involution of the uterus among postnatal mothers in both the experimental group and control group (N=60(30+30))

Level of Involution	Experimental group Post-Test		Control group Post-Test	
	F	%	F	%
Good	6	20	0	0
Average	14	46.7	18	60%
Poor	10	33.3	12	40%

Table 2: Effectiveness of oxytocin massage on level of involution of the uterus among postnatal mothers between the experimental and control group (N=60(30+30))

Level of Involution	Mean	S.D	Unpaired 't' Value
Experimental Group	11.83	3.51	t = 2.1182
Control Group	14	1.85	p = 0.0432 S*

* p<0.05, S-Significant

Table 3: Association of post test level of involution of the uterus among postnatal mothers with selected demographic variables in the experimental group (N=30)

S. No.	Demographical Variables	Experimental Group		Control group		Chi-Square Value
		Frequency	Percentage	Frequency	Percentage	
1.	Postnatal Vaginal bleeding (per day)					
	a) Heavy (more than 5 pads)	4	13.3%	10	33.4%	X ² =11.276 d.f=2 p = 0.003 S*
	b) Moderate (5 pads)	18	60%	16	53.3%	
	c) Mild (less than 5 pads)	8	26.7%	4	13.3%	
2.	Number of breastfeeding per day					
	a) 7-10 times	14	46.7%	24	80%	X ² =4.8 d.f=1 p = 0.0284 S*
	b) 11-15 times	16	53.3%	6	20%	

* p<0.05, S-Significant

Section C: Effectiveness of oxytocin massage on involution of the uterus among postnatal mothers in the experimental and control group.

Oxytocin massage which is administered to the postnatal mothers in the experimental group had a significant reduction in the level of involution of the uterus than the postnatal mothers in the control group at the level of p<0.05 level (Table 2).

Section D: Association of post test level of involution of the uterus among postnatal mothers with selected demographic variables in the experimental group.

Postnatal vaginal bleeding and breastfeeding frequency had shown statistically significant associa-

tion with post test level of involution of the uterus among postnatal mothers in the experimental group at p<0.05 level and the other variables had not shown statistical significance (Table 3).

DISCUSSION

The present study findings depict that in the experimental group the level of involution among postnatal mothers in experimental group 6 postnatal mothers had good involution, 14 had average involution and 10 had poor involution whereas in the control group 18 postnatal mothers had average involution and 12 postnatal mothers had poor involution. The present study finding is supported by Shyla

(2012) led an investigation on the adequacy of fundal massage on uterine involution among postnatal moms conceded in postnatal ward in Bensam Hospital at Kanyakumari District. The investigation results show the degree of uterine involution in test gathering, out of 30 postnatal moms, 14 (46.6%) of the moms had normal and 16(53.33%) of the moms had helpless involution. With respect to the degree of uterine involution in control gathering, out of 30 postnatal moms, 9 (30%) of the moms had normal and 21(70%) of the moms had helpless involution. From both the gathering none of them had great uterine involution. Hence it was concluded from the above studies that all mothers had poor involution. There are many alternative and complimentary methods among that oxytocin massage has a supreme effect on which can be encouraged and practiced to increase the rate of involution and thereby the mothers can prevent complications and get discharged from the hospital as early as possible.

In the present study, oxytocin massage, which is administered to the postnatal mother's women in the experimental group had a significant reduction in the level of involution of the uterus than the women in the control group. The level of involution of the uterus shows reduction than the control group at the level of $p < 0.05$ level. This reveals that oxytocin massage was highly significant in the experimental group because Oxytocin hormone which is secreted by the neurons of the hypothalamus during massage stimulates the contraction of uterine smooth muscle by increasing the sodium permeability of uterine myofibrils (Shyla, 2012).

This finding was also supported by Wahyuni *et al.* (2019) led an examination with Combination of oxytocin massage and dried dates on the measure of baby blues discharge and involution uterine in typical baby blues. The investigation results show that the measure of baby blues discharge at 2 hours baby blues $p > 0.05$. While 6 hours and 12 hours baby blues $p < 0.05$. The blend bunch indicated the most minimal normal of 23 ml. While involution of the uterus at 6 hours baby blues $p > 0.05$ while on day 3 and day 6 baby blues $p < 0.05$. The combination group showed the lowest average of 3.94 cm. The combination of oxytocin massage and dried date fruit is more effective against postpartum haemorrhage and involution uterine (Wahyuni *et al.*, 2019). Thus, they concluded that the oxytocin massage enhances the rate of involution of the uterus, thereby postnatal complications like Subinvolution are prevented and as well it increases the breastfeeding secretion. Hence the research hypothesis was accepted.

In the present study, there was a statistically significant association in Postnatal vaginal bleeding and breastfeeding frequency had shown statistically significant association with post-test level of involution of the uterus among postnatal mothers in the experimental group at $p < 0.05$ level and the other variables had not shown statistical significance. Oxytocin is a hormone that follows up on organs in the body (counting the bosom and uterus) and as a synthetic courier in the cerebrum, controlling key parts of the regenerative framework, including labor and lactation, and parts of human behaviour. Thus the present study was an attempt to address important issues related to involution of the uterus among postnatal mother's women. Hence it is evident that oxytocin massage increases the rate of involution of the uterus among postnatal mothers. More extensive studies are required to be encouraged to be done in this aspect.

The present study was also supported by Sari *et al.* (2017) conducted an interventional study to assess the Adequacy of Combination of Oxytocin and Endorphin Massage on Uterine Involution in Primiparous Mothers. The investigation results show that there were noteworthy mean contrasts of fundal tallness among the four gatherings with p -value < 0.05 . Notwithstanding, there was no contrast between control gathering and endorphin bunch with p -esteem 0.328 (< 0.05) (Sari *et al.*, 2017).

CONCLUSION

The present study results suggest that oxytocin massage had a significant effect on the process of uterine involution. It is suggested all the midwives practice this oxytocin massage in quickening the cycle of uterine involution. Preparing for wellbeing staff's will be an extra for a powerful mediation. Further exploration is required with greater example size, and controlling the factors of ahead of schedule and mental factors, and surveying the involution of the uterus in a more extended time.

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Conflict of Interest

The authors declare that there is no conflict of interest for this study.

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