
ORIGINAL ARTICLE**A Study to Assess the Effect of Prenatal Perineal Massage on Gestational Age, Duration of 1st and 2nd Stage of Labour**

Ansa Sussan Biju¹, Jyoti A. Salunkhe^{1*}, Avinash H. Salunkhe¹, Satish V. Kakade², Lekshmi Nair¹,
R. P. Patange³

¹Krishna Institute of Nursing Sciences, ²Department of Preventive and Social Medicine, ³Department of Obstetrics and Gynecology, Krishna Institute of Medical Sciences and Krishna Hospital, Krishna Institute of Medical Sciences "Deemed to be University", Karad-415110 (Maharashtra) India

Abstract:

Background: Women who experience perineal trauma can subsequently be affected by conditions such as dyspareunia, urinary and anal incontinence, perineal pain, and delayed mother–neonate interaction **Aim and objectives:** This study aimed to assess the effects of prenatal perineal massage on gestational age duration of 1st and 2nd stage of labour. **Material and Methods:** A quantitative research approach and experimental research design was used for the present study. The study was conducted on 60 (experimental 30+ control 30 randomly assigned by lottery method) prenatal mothers without any complication attending antenatal outpatient department and deliver vaginally in labour ward of Krishna Hospital, Karad. The independent variable was prenatal perineal massage and dependent variables were labour outcome i.e. gestational age, duration of first stage and second stage of labour. The data was collected by the researcher after obtaining an informed consent from participants. **Results:** Maximum mothers (63.33%) and (53.33%) were <23 years of age respectively. As per education, majority of mothers 24 (80%) and (86.6%) were educated up to secondary level from both the groups respectively. From both the groups maximum mothers (90%) had normal vaginal delivery. The mean gestational age 38.4 ± 1.3 of mothers from control group was higher than the mean gestational age 37.8 ± 1.4 of mothers from experimental group. There was significant association found between mean duration of first stage and second stage of labour

from both the groups ($P < 0.05$). **Conclusion:** Prenatal perineal massage after 34 weeks of gestation is effective in reduction of duration of 1st and 2nd stage of labour.

Keywords: Prenatal Perineal Massage, Gestational age

Introduction:

Labour, also known as parturition or childbirth, is the process of delivering a baby and the placenta, membranes, and umbilical cord from the mother's womb to the outside world. All the procedures performed during the childbirth are having a cardiac role in the quality of life of the women [1]. However, by the efforts of many researchers many improvements have taken place in gynecology and obstetrics field that will make vaginal delivery safer and more effective and qualified, by avoiding the unnecessary and inappropriate interventions being practiced [2].

Now we are in a present scenario in which the episiotomy has become an intervention being used widespread that increases women's risks for being subjected to perineal trauma. Women who experience perineal trauma can be affected by several conditions such as dyspareunia, urinary and anal incontinence, perineal pain, swelling and delayed mother neonate interaction [3-5].

Perineal trauma can be caused by episiotomy [6-7] one of the most frequently used obstetric interventions [8-9].

One of the interventions made for the effective childbirth is antenatal perineal massage. As regards perineal massage, a method used to slowly relax the perineum muscle by massaging and helps increase the muscle flexibility and durability and thereby avoids the need to rip the muscle during childbirth, is strongly recommended for prenatal women because it improves the labour outcome and speeds up recovery after the delivery. All the measures used for gentle natural birthing have almost become extinct or are considered the portion of a high-class community in India. Such services which are age-old time tested ways of promoting safe happy natural births are offered in so called '**Birthing Boutiques**' in our country in metropolitan cities. It is our wish to make this available to every mother since she deserves a compassionate, scientific, quality and safe care to make her birth experience a remarkable and a memorable one.

World Health Organization and UNICEF estimates indicate that most of the total 529000 maternal deaths globally occur in just 13 countries associated with complication of normal childbirth such as episiotomy and perineal traumas [10]. There is a significant result is evidenced in previous studies about the perineal massage on labour outcome of a pregnant woman. It is becoming a very common thing that women suffering with perineal pain even one year after childbirth. Delayed healing of perineal trauma during childbirth affects the quality of life postpartum mothers to a great extent. Thus, 8 weeks after birth, 22% of new mothers reported continued perineal pain, and for some women, pain may persist for a

year or longer. The likelihood of perineal pain and sexual problems in the postpartum period is the least for women whose perineum remains intact [11]. Prenatal perineal massage really helps for this. So, this study was undertaken to assess to what extent prenatal perineal massage can control these problems and improve the labour outcome. Perineal massage can be a helping and supporting hands to mothers to keep their perineum intact after delivery and to avoid the complications of a greater degree perineal tear as the massage can improve the perineal muscles elasticity.

Material and Methods:

A quantitative research approach and experimental research design was used for the present study. The objective of the study was to assess the effect of prenatal perineal massage on gestational age, duration of 1st and 2nd stage of labour. The study was conducted in antenatal outpatient department and labour ward of Krishna Hospital, Karad.

The independent variable was prenatal perineal massage and dependent variables were labour outcome i.e. gestational age, duration of first stage, second stage of labour. Target population of this study was prenatal mothers without any complication going to deliver vaginally at Krishna Hospital, Karad. A sample of sixty prenatal mothers who attended antenatal clinic and admitted in labour ward were randomly assigned to experimental and control group using lottery method after obtaining an informed consent.

As per the study of Faten Ibrahim Elsebeiy [11], Mean \pm SD of variable duration of first stage in the study group was 21.1 ± 6.3 and in control group was 27.9 ± 6.7 . The minimum number of subjects (sample size) required to enroll in each of the group with 95% confidence level and 95% power

is 24. Considering 20% attrition rate minimum number is $24+5=29$. So, in this study, the sample size was 60. i.e. 30 mothers in experimental group and 30 mothers in control group.

The sample recruited for this study as per selection criteria i.e. women who ages from 18-35, women who have completed 34 weeks of gestation, only nulliparous and primiparous pregnant women with singleton fetus, women with no indications for cesarean section, only secondary and university educated women were included to ensure compliance were included in the present study. Women with high risk conditions like twin pregnancy, cardiac diseases, vascular problems and women those were suffering from vaginal herpes, thrush or any other vaginal infection, as massage could spread the infection and worsen the condition were not included in the study.

The tool was prepared on the basis of the objectives of the study. The tool was finalized after going through many literature reviews. Perineal massage training brochure was developed by the investigators. During ANC visit, the demonstration of perineal massage was shown to pregnant women on dummy model and re-demonstration was taken in the same session. Training brochure describing how to perform perineal massage was distributed to the pregnant women in experimental group. Prenatal perineal massage was started from 34th week of gestation, twice in a week, and each episode for 10-15 minutes and asked mother to do at home and feedback was taken through phone call.

Technique for Perineal Massage:

Gentle pressure downward towards the rectum and to the sides of the vagina to stretch the opening was applied until a very slight burning, stinging,

or tingling sensation was felt by the woman. The lubricant i.e. sunflower oil, was applied slowly and gently, maintaining the pressure and pulling the perineum forward a little and sweeping the index and middle finger from side to side of the vagina in a 'U' shaped motion from 3 O'clock to 9 O'clock for approximately 2 minutes. Relax and repeat once. Pressure was avoided at the tip of the vaginal opening. Gentle massage was performed as forceful massage could cause bruising or swelling. Massage was ceased with any pain or discomfort [13].

Formal permission was obtained from Ethics Committee of KIMSUDU. Information regarding study was given to participants and explained purpose of study. The informed consent was obtained from mothers. The data collection was started on 30th December 2019 to 30th February 2020. When mothers admitted at Krishna Hospital, Karad for delivery, the researcher was accompanied (attended) throughout labour and collected data. All calculations were carried out using SPSS V20.

Results:

From experimental and control group maximum mothers 63.33% and 53.33% were <23 years of age respectively. As per education, majority of mothers 24(80%) and (86.6%) were educated up to secondary level respectively. From both the groups (90%) mothers had normal vaginal delivery. There was no significant difference found between age, education and type of delivery from control and experimental groups ($p>0.05$) (Table 1). The mean gestational age 38.4 ± 1.3 of mothers from control group was similar to the mean gestational age 37.8 ± 1.4 of mothers from experimental group ($p>0.05$) (Table 2). Table 3

revealed that, from experimental group, majority of (93.3%) mothers had duration of 1st stage of labour <12 hours. The mean duration of 1st stage of labour was higher in mothers in control group 9.9 ± 2.6 than in the experimental group 8.6 ± 1.7 and this difference was statistically significant

($p=0.0255$). From experimental group, majority of (59.25%) mothers had duration of 2nd stage of labour <30 min. The mean duration of 2nd stage of labour was significantly higher in mothers from control group 30.6 ± 8.4 than in the experimental group 25.5 ± 5.4 ($p=0.0105$).

Table 1: Distribution of Participants according to Demographic Characteristics [N=30+30=60]

Demographic Characteristics	Experimental Group	Control Group	Chi-square Test	P
	F (%)	F (%)		
Age:				
≤23 years	19(63.33%)	16(53.33%)	0.6171	0.4321
>24 years	11(36.66%)	14(46.66%)		
Education:				
Secondary education	24(80%)	26(86.6%)	0.4800	0.4884
University education	6(20%)	4(13.3%)		
Type of delivery:				
Normal vaginal delivery	27(90%)	27(90%)	0.000	1.000
Caesarian Section (CS)	3(10%)	3(10%)		

Table 2: Effect of Perennial Massage on Gestational Age [N=30+30=60]

Groups	Gestational Age	F (%)	Mean ± SD	t	P
Control	≤37	7(23.3%)	38.4 ± 1.3	1.720	0.0907
	≥38	23(76.6%)			
Experimental	≤37	16(53.3%)	37.8 ± 1.4		
	≥38	21(46.6%)			

Table 3: Effect of Perennial Massage on Duration of 1st and 2nd Stage of Labour [N=30+30=60]

Groups	1 st stage in Hrs.	F (%)	Mean ± SD	t	P
Control	< 12 hrs.	18(60%)	9.9 ± 2.6	2.292	0.0255
	≥ 12 hrs.	12(40%)			
Experimental	< 12 hrs.	28(93.3%)	8.6 ± 1.7		
	≥ 12 hrs.	02(6.6%)			
Groups	2 nd stage in min.	F (%)			
Control	< 30 min.	5(18.51%)	30.6 ± 8.4	2.654	0.0105
	≥ 30 min.	22(81.48%)			
Experimental	< 30 min.	16(59.25%)	25.5 ± 5.4		
	≥ 30 min.	11(40.7%)			

**Note- Three mothers from each groups delivered with LSCS so 54 samples were analyzed.*

Discussion:

In the present study the mean gestational age 38.4 of mothers from control group was similar to the mean gestational age 37.8 of mothers from experimental group and there was no significant difference (p>0.05). The study conducted by Ali [10] noted that the mean gestational weeks of pregnant women in massage, exercise and control groups which were 38.16, 37.18 and 39.65 respectively. It is near similar to our study findings 38.4, 37.8 in control and experimental groups respectively. Another researcher found that there was no significant difference found between gestational age of mothers in massage and control groups [13]. The duration of active first stage (from 5 cm until full cervical dilatation) usually does not extend beyond 12 hours in first labours,

and usually does not extend beyond 10 hours in subsequent labours. WHO [12]. In the present study, majority of 93.3% mothers had duration of 1st stage of labour <12 hours in experimental group. The mean duration of 1st stage of labour was higher in mothers in control group 9.9 ± 2.6 than experimental group 8.6 ± 1.7. (p=0.0255). The stage I is the opening of 1-10 cm of the birth canal, which is divided into latent, active, and transitional phases [14]. Each phase has a different duration for the progress of labour [8]. Duration of the latent phase in nulliparous is 8.6 hours while multipara is 5.3 hours [8]. The duration of the active phase in nulliparous is 4.6 hours while multipara is 2.4 hours [8]. The duration of the transitional phase is during the opening of 8-10cm [14]. The study

conducted by Haryanti noted that perineal massage has an impact on the duration of the stage I of the delivery. The mean difference in the intervention and control groups was 147, meaning that perineal massage accelerates stage I by 147 minutes [15]. In the present study, majority of (59.25%) mothers had duration of 2nd stage of labour < 30 min. The mean duration of 2nd stage of labour was higher in mothers in control group 30.6 than in the experimental group 25.5. There was significant difference found between mean duration of second stage of labour from both the groups (p=0.0105). This was supported by a theory which stated that the duration of stage II in nulliparous is 1 hour and in multiparas is ¼ - ½ hours [14]. The stage II is called pelvic stage from the opening until the labour [14]. The duration of the stage II of labour – Cuningham *et al.* (2013) says the median of stage II is 50 minutes for nulliparous and 20 minutes for multiparous. Another researcher noted that perineal massage had an impact on the duration of the stage II of the delivery [15]. The mean of intervention group was 53.3 minutes and

the control group were 70.7 minutes. Average difference was -17 which meant perineal massage accelerated stage II by 17 minutes. Another research study done by Golbasi [13] noted that the mean duration of the second stage of labour was significantly shorter in the massage group than in the control group among the whole population (p<0.01), among primipara (p<0.01), and among multipara (p<0.01) [13]. Attarha *et al.* [16] observed that perineal massage with lavender essence at the second stage of labour increased blood flow, softened perineal tissues and made it more flexible in the involved group rather than the control group. In a study, Granmayh *et al.* [17] observed that perineum massage with Vaseline in the second stage of labour had more intact perineum.

Conclusion:

Based on the results revealed by the present study, it can be concluded that prenatal perineal massage has a beneficial effect in reducing duration of both, first and second stage of labour.

References

1. Abou Zahr C. Global burden of maternal death and disability. *Br Med Bull* 2003; 67:1-11.
2. L.L Albers, Borders N. Minimizing genital tract trauma and related pain following spontaneous vaginal birth. *J Midwifery Women's Health* 2007; 52 (2): 246-253.
3. Dahlen HG, Homer CSE, Cooke M, Upton AM, Nunn RA, Brodrick BS. Soothing the ring of Fire: Australian women's and midwives' experiences of using perineal warm packs in the second stage of labor. *Midwifery* 2009; 25(2):39-48.
4. Althundag K, Kizilirmak A, Kartal Baser M. The effect of perineal massage in preventing perineal trauma during vaginal delivery. *Anatolia Nurse Health Sci* 2010; 13(3):62-65.
5. Karacam Z, Ekmen H, Calisir H. The use of perineal massage in the second stage of labor and follow up of postpartum perineal outcomes. *Health Care Women Int* 2012; 33(8):697- 718.
6. Davidson K, Jacoby S, Brown SM. Prenatal perineal massage: preventing lacerations during delivery. *J Obstet Gynecol Neonat Nurse* 2000;29(5):474-479.
7. Johanson R. Perineal massage for prevention of perineal trauma in childbirth. *Lancet* 2000;355(9200): 250-251.
8. Cunningham FG, Leveno KJ, Bloom SL, Hauth CJ, Rouse JD, Sponge YC. In: Ceylan Y, Yildirim G, Gedikbasi A *et al*, editors. Williams Obstetric. Edn 23. Istanbul: Nobel Medical Publishing;2010: 500-510 Trans.

-
9. Raisanen S, Vehvilainen-Julkunen K, Heinonen S. Need for and consequences of episiotomy in vaginal birth: a critical approach. *Midwifery* 2010; 26(3):348-356.
 10. HalaAbd El ftah Ali. Effects of Prenatal Perineal Massage and Kegel Exercise on the Episiotomy Rate. *IOSR J Nurs Health Sc* 2015; 4(VII): 61-70
 11. Faten Ibrahim Elsebeiy. Comparison of the effects of prenatal peineal massage versus kegel exercises on labor outcome. *IOSR J Nurs Health Sc* 2018; 7 (3): 43-53.
 12. WHO Reproductive Health Library. WHO recommendation on duration of the first stage of labour (February 2018). The WHO Reproductive Health Library; Geneva: World Health Organization.
 13. Demirel G, Golbasi Z. Effect of perineal massage on the rate of episiotomy and perineal tearing. *Int J Gynecol Obst* 2015; 131:183-186.
 14. Reeder M, Koniak G. Keperawatan Maternitas: Kesehatan Wanita, Bayi, Dan Keluarga Vol.1 18thed. Jakarta: EGC 2012.
 15. Haryanti P. The effect of perineal massage on perineal status and duration of labor. *JKS* 2019; 14(2): 145-155.
 16. Attarha M, Vakillian K, Rozbahany N, Bekhradi, R. Effect of perineal massage with lavender essence on episiotomy and laceration. *J Babol Univ Med Sci* 2009; 11:25-30.
 17. Geranmayeh M, Rezaei HZ, Fallahkish B, Farahani MA, Khakbazan Z, Mehran A. Reducing perineal trauma through perineal massage with vaseline in second stage of labor. *Arch Gynecol Obstet* 2012; 285: 77-81.
-

***Author for Correspondence:**

Dr. Jyoti A. Salunkhe, Krishna Institute of Nursing Sciences, Krishna Institute of Medical Sciences and Krishna Hospital, Krishna Institute of Medical Sciences "Deemed to be University", Karad-415110 (Maharashtra) India Email:jasalunkhe.salunkhe9@gmail.com Cell:9763148165

How to cite this article:

Biju AS, Salunkhe JA, Salunkhe AH, Kakade SV, Nair L, Patange RP. A Study to Assess the Effect of Prenatal Perineal Massage on Gestational Age, Duration of 1st and 2nd Stage of Labour. *J Krishna Inst Med Sci Univ* 2020; 9(2): 81-87.

■ Submitted: 15-Feb-2020 Accepted: 07-Mar-2020 Published: 01-Apr-2020 ■