The Impact of Slow-Stroke Back Message on Anxiety Level of Low Risk Parturient Mothers in the Fourth Stage of Labor

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Aim of the study: To assess the impact of slow-stroke back message on anxiety level of low risk parturient mothers in the fourth stage of labor. *Subjects and methods*: *Design*: quasi-experimental design. *Setting*: obstetric department at Al Galaa maternity hospital. *Sample*: 44 low risk parturient mothers per group (study and control) fulfilling the inclusion and exclusion criteria were included in the study. Tools used: socio-demographic questionnaire, State trait anxiety inventory questionnaire, slow stroke back message. *Results*: About half of the experimental and control groups women`s age was between 25-30 years of age. For the experimental group about 36.4 % of the mothers had a basic education, and 70 % were housewives. The results also revealed that there was decrease in the anxiety scores throughout the study time starting from immediately at the beginning of fourth stage of labor till discharge from hospital in the study group unlike the control group whose results revealed that most women remain in the same level of anxiety (mild to moderate) 52.3% and 59% immediately after labor and before discharge respectively. Conclusion and recommendation: The findings of our study showed that slow-stroke back massage in the first few hours after birth (6-12 hrs.) reduced the mother's anxiety level, so it is **recommended** to use massage in the early hours after labor to help the mother to reduce their anxiety.

Key words: slow stroke back massage – Post partum anxiety – State-trait anxiety inventory scale – Nursing implications

INTRODUCTION

Pregnancy and labour are pleasant physiological events. Fourth stage of labor begins after the birth of the placenta and membranes and ends with the initial physiologic adjustment and stabilization of the mother (1 to 4 hours), post partum period is a critical transitional time for woman and her newborn on physiologic and psychological levels. Many women experience maternal blues which are characterized by mild depression symptoms, anxiety, irritability mood swings and fatigue. [1]

Postpartum anxiety has been observed in 5-20% of women. Postpartum anxiety is less diagnosed and could occur either alone or is accompanied with depression symptoms [2]. Mood disorders are more likely to develop in the postpartum period, it can represent up to 50% of women during the first 2 weeks [3]

The prevalence of postpartum anxiety was reported to be 18% in Maryland in the U.S. [4] and 12.7% in South Australia [5], In Vancouver, Canada, 14.2% in the first week after delivery, 12.1% in the fourth week, and 9.2% in the eighth week [6] and in Tehran, Iran, 14.7% of mothers reported mild anxiety, 26% had medium-to-low anxiety, 23% had above average anxiety, 27.3% had relatively severe anxiety, and 12.7% had severe anxiety [7].

Anxiety affects the release of oxytocin (delay or even prevent) during the breast-feeding period and potentially interfere with the breast milk descent reflex [8].

Massage therapy is considered one of the most accepted alternative and complementary therapy that is used in nursing and midwifery field, easy to implement, safe, non-invasive and relatively cheap [9]

Therapeutic massage is an ideal way to deal with stress and health disorders naturally as it provides both physical and emotional wellness. The massage sessions can vary from single sessions to a regular massage for a short span, over a period of time [10]

The three main physical effects of therapeutic massage are release of muscle tension, increased blood circulation and initiation of relaxation response. Massage regulates the autonomic nervous system and therefore lowers the levels of cortisol, adrenaline, and noradrenalin, intermittent pressure applied during massage increases blood circulation and lymphatic drainage [11] exercise has been shown to be an effective and cost-efficient treatment alternative for a variety of anxiety disorders [12].

Massage influences central nervous system and releases B central analgesic substances such as endorphin and encephalin, which prevent P substance (neurotransmitter) release, reduce sympathetic system stimulations and increase parasympathetic system stimulations; as a result heartbeat and respiration rate diminishes. Massage can reduce levels of hydrocortisone, adrenaline and nor adrenaline. Moreover, regular stimulation and touching elevate blood circulation in lymphatic drainage which

causes a change in heartbeat and blood pressure [13], [14]. Relaxation in the postpartum period minimizes the activity of the sympathetic nervous system and can prevent postpartum depression, and it can also increase mother-infant attachment [15].

The postpartum period is an ideal time for nurses to promote the importance of physical fitness, help women to incorporate massage into their lifestyle [16]. Assessment skills by registered nurses add another dimension of knowledge and expertise to the practice of slow-stroke back massage [17]

SIGNIFICANCE OF STUDY

During the early postpartum period, mothers may complain from anxiety due to insomnia, pain, fatigue results from labor process, and breast-feeding initiation problems. No treatment is available for these problems in the early postpartum period. The researchers tried to search for simple, costless, and noninvasive intervention to reduce the anxiety level on the first postpartum hours till discharge from hospital.

Aim:
To assess the impact of slow-stroke back message on anxiety level of low risk parturient mothers in the fourth stage of labor.

Research hypotheses:
Using slow stroke back message will decrease anxiety level in the fourth stage of labor.

Methodology:
Design: quasi-experimental design
Setting: obstetric department at Al Galaa maternity hospital.
Sample type: A purposive sample of low risk primiparous women aged (18 – 35 years) with normal for age healthy baby, able to read and write, and started breastfeeding while in the hospital stay period. The exclusion criteria were a history of chronic medical or psychological illness, history of long period of infertility, use of analgesics or epidural anesthesia during labor, and the presence of any skin breakdown in an area of message.

Sample size:
A sample of 40 females per group is required to estimate average difference at anxiety score between the two arms = 6.5 scores, SD= 3 scores with estimated effect size for intervention = 0.71 at 95% confidence level and study power of 80%. Considering loss of follow up rate will be around 10%, the sample size will be increased to 44 per group using the following equation:
$n = (z_{1-\alpha 2} + z_{1-\beta}) \times (s_{1\,2}\,s_{2\,2}\,) d_2$

The interventions required for each group:

The control group asked to fill Spielberger's state anxiety inventory (STAI) Questionnaire two times first immediately after transfer to postpartum room, the second one before discharge from hospital.
Study group were asked to fill the Spielberger's state anxiety inventory (STAI) questionnaire for three times the first immediately after transfer to postpartum room, the second time after performing the message and the third time before discharging from hospital.

Tools used:
1. *socio-demographic questionnaire.* Included the mother's ages, infant gender and birth weight, economic and residence status, maternal education and occupation, number of pregnancies and abortions.
2. *State trait anxiety inventory questionnaire:* The questionnaire for State-Trait Anxiety of Spielberger which consisted of two parts included 20 questions in each part, which were scored based on a 4-point Likert scale as follows: never (one point), sometimes (two points), moderately (three points), and very much (four points) [18]. The researchers used the Arabic version. The total score was categorized as 20-31 for mild, 32-42 for moderate to low, 43-53 for moderate to high, 54-64 for relatively severe, 65-75 for severe, and more than 76 for extremely severe anxiety [16]. Reliability and validity of the state-trait anxiety inventory questionnaire were confirmed by Dennis CL et al, in 2013 [19].
3. *Slow stroke back message*. This massage is described as a slow rhythmic light touch with the hands performed through five steps. *The first step:* The mother was seated on the edge of the bed and the researcher grasped the top of the mother's shoulders with both hands and placed the thumbs of each hand just below the base of the skull, making tiny circular movements on the upper neck. *The second step*: the researcher placed the palm of one hand at the base of the skull and made a long and smooth stroke all the way down the patient's spine to her waist, The second hand followed the first at the base of the skull and stroked down the spine as the first hand returned to the base of the skull. *The third step*, the researcher placed her hands on either side of the mother's neck under the mother's ears and stroked down and over the mother's collarbones with her thumbs just over the shoulder blades and repeated the motion several times. *The forth step:*, she placed the thumb of each of her hands beside the spine, beginning with the shoulders, and moved the thumbs down the spine to the waist and repeated this movement several times. *The fifth step:* , she completed the procedure by placing her palms on each side of the mother's neck and making continuous, long, sweeping strokes down the neck, across each shoulder, and down the back near the spine and repeated the entire process several times [20] [21], [22].

Field work:
- The researchers took a condensed training in the faculty of physiotherapy at Misr University for science and technology for one month and were certified that they are capable to perform the message in the right way.
- After providing the necessary explanation of the study objective and taking oral consent from the mothers, the participants completed a socio-demographic questionnaire. Then the researchers transfer the mothers to a quit room (empty room) and then started completing Spielberger's state anxiety inventory (STAI) for the first time to both study and control groups. It takes about three months to fulfill the required number of mothers starting from August 2016 to October 2017.
- For the study group, the researchers started to perform slow-stroke back massage for 20 min, in a sitting

position. An odorless ointment was chosen for the massage to reduce odor stimulus for infants. And again after massage immediately and before discharge from hospital, the mothers completed the STAI.

- For control group, the researchers asked the mothers to complete the STAI after staying 20 minutes in the quite room and then completed another one before discharge from hospital.

Administrative design:

To carry out the study, the necessary approvals were obtained from the General Director of Al-Galaa Hospital of Obstetrics and Gynecology, after explaining the aim of the study in order to obtain permission and help.

Ethical consideration:

An official permission to conduct the research obtained from the Vice Dean of post graduate studies and research at faculty of applied medical sciences as well as an official permission from ethical committee to carry out the study. For each woman, confident and free choice to participate in the study was explained. Women were included in this study consented verbally and fill the knowledge pretest assessment questionnaire after brief explanation of the aim of the study.

Statistical analysis:

Data collected were analyzed by computer using the statistical package for social sciences (SPSS) software version 20. Number and percentages were used for data summarization. Chi square test was used for testing significant differences and relations between variables. Significant difference was considered if p≤ 0.05.

RESULTS

This study consisted of 88 primiparous women assigned randomly to a study group (n = 44) or a control group (n = 44). About half of the study and control groups women`s age was between 25-30 years of age. For the study group about 36.4 % of the mothers had a basic education, and 70 % were housewives. There were no missing values, as the number of items that the mothers had to complete was low. Generally there was no significance difference between study and control groups regarding Sociodemographic characteristics.

Table (2) showed that there was no significant difference related to anxiety levels for both study and control group immediately after transportation to the post partum room before starting the massage. As anxiety levels were mostly moderate to low (52.3%) and moderate to high (54.5%) in both in the study and control groups respectively.

Table (3): revealed that most women of control group remain in the same level of anxiety (mild to moderate) 52.3% and 59% immediately after labor and before discharge respectively.

The table (4): showed that there was noticeable decrease in the anxiety scores throughout the study time starting from immediately at the beginning of fourth stage of labor till discharge from hospital in the study group.

Fig.(1): showed number distribution of anxiety levels of study group as before starting massage 5 women only (11.3 %) experienced mild anxiety and the number increased up to 28 women (63.6 %) experienced mild anxiety before discharge. Also for relatively severe anxiety level the figure showed that this level started with very small number (3 women) before massage and ended with no women experienced this level of anxiety before discharge.

Fig.(2): showed that 3 women only experienced mild level of anxiety whereas the majority of the control group remain in the moderate to low immediately after labor and before discharge (23 & 26 respectively) and moderate to high levels after labor and before discharge (17 & 13 respectively)

Table (1): Socio-demographic characteristics of experimental and control groups

Variables	Study N = 44		Control N = 44		X^2	p value
	No	%	No	%		
Mother's age						
• 18 – >25	11	25	9	20.5	1.721	.787
• 25 - >30	24	54.5	25	56.8		
• 30 - 35	9	20.5	10	22.7		
Previous abortions						
• Yes	7	15.9	8	18.2	.085	.771
• No	37	84.1	35	81.8		
Mother's education						
• Read and write	14	31.8	13	29.5	10.612	.331
• Basic education	16	36.4	12	27.3		
• High education	14	31.8	19	43.2		
Mother's occupation						
• Working	13	29.5	10	22.7	.001	.971
• Housewife	31	70.5	34	77.3		
Post partum stay in hours						
6 – 8 hours	24	54.5	22	50	4.161	.385
8 – 12 hours	13	29.5	13	38.6		
12 – 24 hours	7	15.9	5	11.4		

Significant p≤ 0.05.

Table (2): Comparison between Spielberger's state anxiety inventory (STAI) levels for study and control groups after labor before starting the massage for the study group

Level	Study		Control	
	N	%	N	%
Mild	5	11.4	0	0
Moderate to low	12	27.3	23	52.3
Moderate to high	24	54.5	17	38.6
Relatively severe	3	6.8	4	9.1
severe	0	0	0	0
extremely severe	0	0	0	0
X^2	5.298			
P	0.506			

Significant $p \leq 0.05$.

Table (3): Comparison between Spielberger's state anxiety inventory (STAI) levels for control group at the beginning of the study and before discharge from hospital (n=44)

Anxiety Level	At the beginning of the study		Before discharge from hospital	
	N	%	N	%
Mild	0	0	3	6.8
Moderate to low	23	52.3	26	59.1
Moderate to high	17	38.6	13	29.5
Relatively severe	4	9.1	2	4.2
severe	0	0	0	0
extremely severe	0	0	0	0
X^2	7.835			
P	0.250			

Significant $p \leq 0.05$.

Table (4): Comparison between Spielberger's state anxiety inventory (STAI) levels throughout study group (n=44)

	Before massage	First time after massage	Before discharge
	Mean Rank	Mean Rank	Mean Rank
	2.39	2.23	1.39
X^2	33.373		
p value	0.000*		

Significant $p \leq 0.05$.
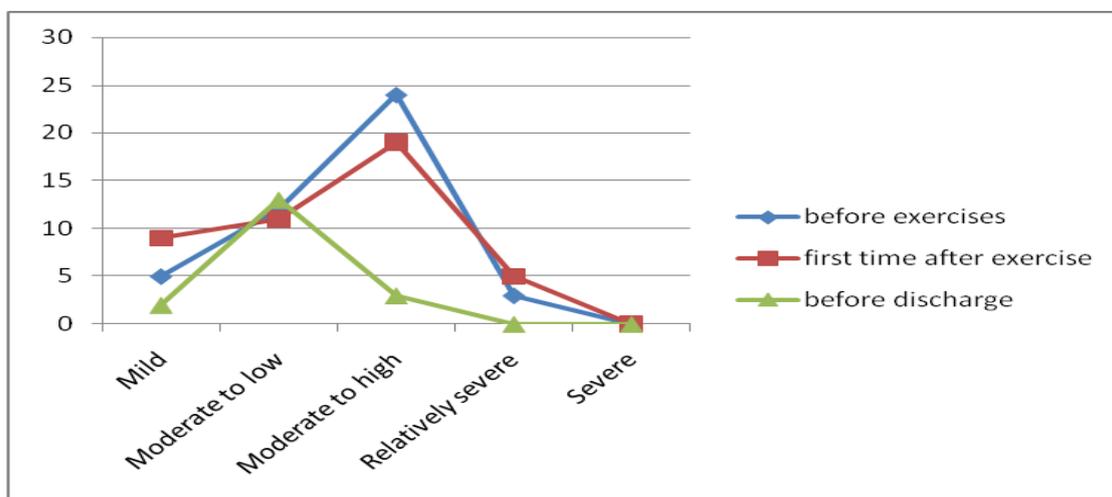
Figure (1): Frequencies of Spiel Berger's state anxiety inventory (STAI) levels among study group throughout the study
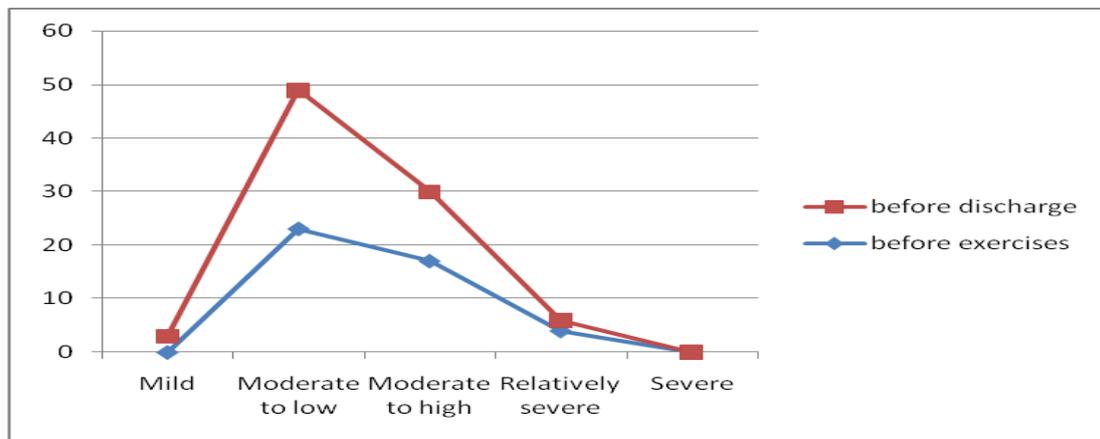
Figure (2): Frequencies of Spielberger's state anxiety inventory (STAI) levels among control group throughout the study

DISCUSSION

Childbirth is a significant life transition event, especially for primiparous women in the first few days after birth. The mothers are faced multiple biological, psychological, and social changes in the postpartum period [23]. Some mothers are very stressed and anxious and experience difficulties adapting to their new lives and responsibilities [24]. Regular physical activity is fundamental for well-being with protective benefits across the field of women's health. Preconception, pregnancy and the early postpartum period represent opportune windows to engage women in regular physical activity to optimize health and prevent weight gain with further potential to reflect behavior change on children and families. The current study aimed at studying the effect of using slow-stroke back message on decreasing anxiety level of low risk parturient mothers in the fourth stage of labor.

The results of the current study revealed that parturient women experience anxiety immediately after labor in both groups and about eighty percent of them aged from 18 to less than 30 years old. These results were contradicted with Rajendra Kumar Giri, etal, who found that Mothers aged 20–29 years were less likely to report depressive symptoms in early post partum period [25].

Average anxiety levels before starting the massage considered relatively elevated in both groups, more than half of the study sample are experienced moderate to low and moderate to high for both control and experiment group respectively. These results are supported by. Bazrafshan MR, Ghorbani, [26], who reported that average anxiety level before the massage was high. Also these results are supported by Fereshteh Jahdi etal [8] who reported that the average anxiety score in the two groups before exorcise was moderate. Unlike these results, Barthel D et al, in his study about ante- and postpartum generalized anxiety symptoms and associated factors, revealed that 11.4% had elevated anxiety scores before and around childbirth that decreased gradually without any intervention [27], [28].

The results of the present study revealed that, the anxiety level of the study group after receiving the massage was significantly reduced immediately after the massage and before discharge (p value=.000*) compared to control group there was no significance in the anxiety levels immediately after labour and before discharge (P= 0.250) . These results were matched with Fereshteh Jahdi etal, who reported that using the slow stroke back message in the first 24 hours after labour decrease anxiety levels. [8]

CONCLUSION &RECOMMENDATION:

The findings of our study showed that slow-stroke back massage in the first few hours after birth (6-12 hrs.) reduced the mother's anxiety level, so it is **recommended** to use massage in the early hours after labor to help the mother to reduce their anxiety as using such massage represents simple and safe method and also it is considered a suitable action to reduce anxiety after labor and early post partum. Slow stroke back massage can provide a useful, without side effects and costless way to decrease anxiety level. Massage is easy, low-cost, and non-invasive and also it is available at home and can be easily taught and leads to a level of empowerment inpatients.

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