

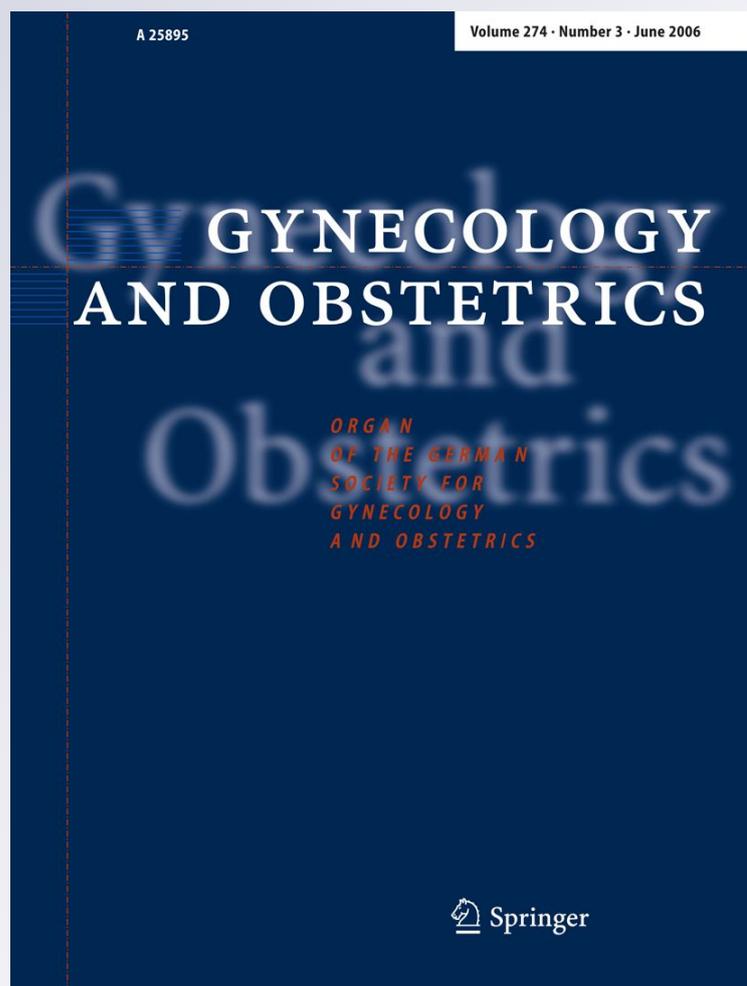
Effects of massage therapy and presence of attendant on pain, anxiety and satisfaction during labor

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Effects of massage therapy and presence of attendant on pain, anxiety and satisfaction during labor

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Abstract

Purpose To investigate the effects of massage and presenting an attendant on pain, anxiety and satisfaction during labor to clarify some aspects of using an alternative complementary strategy.

Methods 120 primiparous women with term pregnancy were divided into massage, attendant and control groups randomly. Massage group received firm and rhythmic massage during labor in three phases. After 30 min massage at each stage, pain, anxiety and satisfaction levels were evaluated. Self-reported present pain intensity scale was used to measure the labor pain. Anxiety and satisfaction were measured with the standard visual analog scale.

Results Massage group had lower pain state in second and third phases ($p < 0.05$) in comparison with attendant group but reversely, the level of anxiety was lower in attendant group in second and third phases ($p < 0.05$) and satisfaction was higher in massage group in all four phases ($p < 0.001$). The massage group had lower pain and anxiety state in three phases in comparison with control group ($p < 0.05$). Data analysis of satisfaction level showed higher values in four phases in massage group compared with control

($p < 0.001$) and comparison of attendant and control groups showed higher satisfaction in attendant group in phases 2, 3 and 4 as well ($p < 0.001$). Duration of active phase was lower in massage group ($p < 0.001$).

Conclusions Findings suggest that massage is an effective alternative intervention, decreasing pain and anxiety during labor and increasing the level of satisfaction. Also, the supportive role of presenting an attendant can positively influence the level of anxiety and satisfaction.

Keywords Anxiety · Attendant · Labor support · Massage therapy · Pain · Satisfaction

Introduction

Using the various alternative ways such as massage therapy in developed countries, it is no wonder that the percentage of cesarean section decreases. As the World Health Organization recommends that this rate should not be higher than 10–15%, as well as the rate of morbidity and mortality of infants after delivery [1]. Child birth is a painful and stressful event in a woman life which is accompanied with fatigue, fear and negative feelings and as labor proceeds, the state worsens [2, 3]. Whereas the labor pain is sharp and poses fast progression, several analgesics are being used. But none of them, alone, can manage the pain adequately due to the different proved side effects [4, 5]. Administering alternative methods can also lead to mothers' satisfaction. Mothers always seek a way to relieve the severe pain so in this case using appropriate touching methods seems to be useful and make them feel more relaxed [6, 7], therefore, beside the analgesic, labor pain can be controlled by alternative ways. Massage is one of these methods which can lead to relaxation, relieves muscle spasm and decreases

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anxiety. It is thought that massage can work through two different pathways: by blocking the pain impulses by increasing the A-fibers transfer and also by stimulating the endorphins to be released locally [8]. It is a fact that as pressure fibers are longer and they have more protective myelin membrane, the pressure from massage overcomes the transmission of painful impulses to the brain. In previous studies, reduction in systolic pressure has been shown as one of the relieving effects of massage [9]. Massage as a very useful sensory stimuli is not only the most used method used, but also one of the most pleasant and accepted ways to reduce the pain in most of the diseases [10]. Aromatherapy and massage can considerably decrease the anxiety so that they can be considered as a supplementary care during labor [11, 12]. Previous studies report that mothers receiving massage during labor felt less anxiety and pain in their back and feet and have been more relaxed whereas after receiving massage, decrease in heart rate and the pattern of relaxation in EEG have been shown [13]. Massage is shown to have some remarkable effects on infants as well. Preterm neonates showed less distress patterns and term neonates demonstrated more increase in growth in their first month of age [14]. For decreasing anxiety during labor and also increasing satisfaction during and after labor, presenting an attendant, one who is accompanied with mother during the whole labor and provides the own support (doula), seems to be appropriate as a nonmedical approach. In this instance, shorter length of labor, decreasing cesarean section rate, lower needing for epidural anesthesia, greater cervical dilation, lower percentage of fetal distress and higher neonatal Apgar scores are reported by articles as the benefits of using a doula (a trained attendant) during labor [15, 16]. A few studies are undertaken to investigate the definite effects of massage and presenting an attendant on such parameters during labor. Also the effectiveness of massage is different in various nations due to the different sensitivity to pain and alternative ways. In this study, different effects between presence of attendant and massage therapy on pain, anxiety and satisfaction in primiparous pregnant are investigated.

Materials and methods

The current work was done in November 2009 till April 2010 at Baharlou university hospital in Tehran, Iran. The Institutional Review Board approval was granted by the Research Ethic Committee of Tehran University of Medical Sciences. A written informed consent form was prepared for each subject and the researchers introduced the general purposes of the procedure for each group.

120 primiparous women between 16 and 36 years and mean age of 23 with the following properties were selected:

experiencing a normal pregnancy without any complications, term pregnancy at the time of admission (gestational age between 37 and 42 weeks) and cervical dilatation of no more than 4 cm. Exclusion criteria were needing to cesarean section for any medical reason and also Oxytocin infusion to accelerate or augment labor progression. Women who met the criteria were entered the study until the whole number of samples were fulfilled. Then, the subjects were randomly divided into three equal groups: massage group, attendant group and control group (40 in each group). Samples of each group were entered the study on the separated intermittent days of the week. None of the groups was aware of the presence of the others groups. The subjects in control groups took the standard obstetrics care in each phase as well as the other groups.

Firm and rhythmic massage was given to the massage group for 30 min in three phases: latent phase (3–4 cm cervical dilation), active phase (5–7 cm cervical dilation), and deceleration phase (8–10 cm cervical dilation). For summarization, these phases were considered as first, second and third phases, respectively. Before massage started, mothers were encouraged to close their eyes and breathe deeply to concentrate on the massage. Massages included shoulder and back massage, abdominal effleurage and sacral pressure. The type of massage was selected based on mothers' preference. After 30-min massage at each phase, three parameters of pain, anxiety and satisfaction levels were evaluated. Furthermore, satisfaction was measured 30 min after delivery (considered as phase 4).

In the attendant group, the laboring woman's attendant accompanied her during the whole labor. Three parameters were assessed in attendant and control groups as well as massage group.

Self-reported present pain intensity (PPI) scale was used to measure the labor pain. PPI is a scale of 0–5: 0, no pain; 1, mild pain; 2, moderate pain; 3, distress; 4, severe pain; and 5, intolerable pain [17]. Anxiety was measured with the standard visual analog scale (VAS). This scale consists of a 10-cm horizontal line define no anxiety at the left and worst anxiety at the right. Subjects were asked about their level of anxiety during labor and the high scores showed the increase in the level of anxiety. Satisfaction was measured with the same scale, but in this case high values showed increase in the level of satisfaction [18]. The duration of active phase was calculated in hour in each group and compared between groups.

Results

Demographically subjects were the same and there were no significant differences in age, education and occupation (Table 1).

Table 1 Demographic data of the participants

Variable	Massage group	Attendant group	Control group	P Value
Age	23.12 (SD = 3.17)	22.45 (SD = 3.45)	23.50 (SD = 4.24)	0.431
Occupation				0.870
Housewife	39 (97.5%)	38 (95%)	37 (97.5%)	
Employee	1 (2.5%)	2 (5%)	3 (2.5%)	
Education				0.110
Illiterate	0 (0%)	1 (2.5%)	3 (7.5%)	
<High school	24 (60%)	27 (67.5%)	17 (42.5%)	
Diploma	16 (40%)	12 (30%)	19 (47.5%)	
College	0 (0%)	0 (0%)	1 (2.5%)	

In massage group, based on mother's preference, 91.7% ($n = 25$) received sacrum massage, 2.5% ($n = 3$) shoulder massage, 0.8% ($n = 1$) effleurage massage (a light stroking movement used in massage) and 5% ($n = 6$) the combination of massages. Mean active phase length was 2.6 h (SD = 0.95 h) in massage group, 5.7 h (SD = 1.89 h) in attendant group and 7.5 h (SD = 1.87 h) in control group. The duration of active phase was significantly lower in massage group ($p < 0.001$). The massage group had significantly lower pain state in the latent, active and deceleration phases generally ($p < 0.05$). The characteristics of pain state in phases 1, 2 and 3 in various groups, respectively, are shown in Figs. 1, 2, and 3. Pain was significantly lower in massage group, comparing with attendant in second and third phases ($p < 0.05$) but on the contrary, anxiety state was lower in attendant group in second and third phases ($p < 0.05$) and the first phase anxiety was significantly lower in massage group. Between massage and attendant groups, satisfaction had higher values in all four phases in massage group ($p < 0.001$). Between massage and control groups, the pain state was significantly lower and satisfaction level was significantly higher in the massage group in all phases ($p < 0.05$, $p < 0.001$, respectively) and also anxiety was significantly in lower state in phases 1, 2 and 3 in massage group ($p < 0.05$). Between attendant and control groups in phases 2, 3 and 4, satisfaction state was significantly higher in attendant group ($p = 0.000$) and the level of pain and anxiety showed significant decrease in second and third phases in attendant group ($p < 0.05$, $p = 0.000$, respectively).

Although the median of anxiety score in massage group was lower than control group, but from the first to the third phase, trend of anxiety in massage group was ascending ($p = 0.000$) But in attendant and control group, it was descending ($p = 0.000$, $p = 0.46$, respectively). The median of satisfaction score was higher in massage group as compared to attendant, but generally the trend of satisfaction in both groups was ascending ($p = 0.000$) and the median of satisfaction score was the lowest in control group, mean-

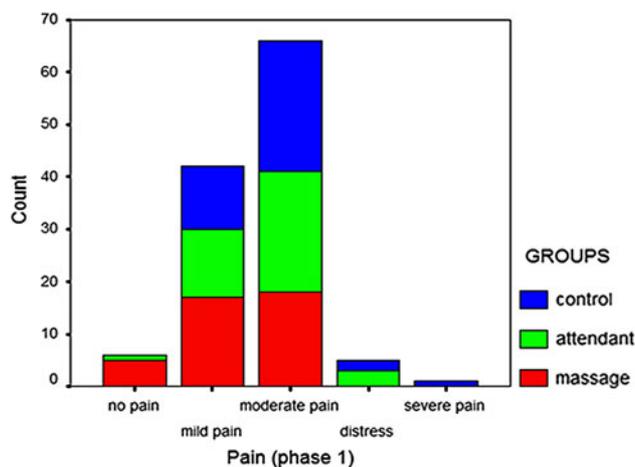


Fig. 1 Pain at phase 1 in three study groups

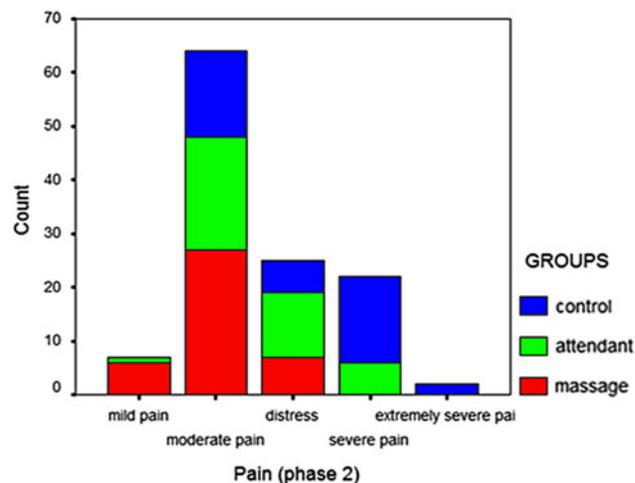


Fig. 2 Pain at phase 2 in three study groups

while the trend in control group was descending in first three phases with an ascending pattern in the fourth phase which was significant ($p = 0.000$).

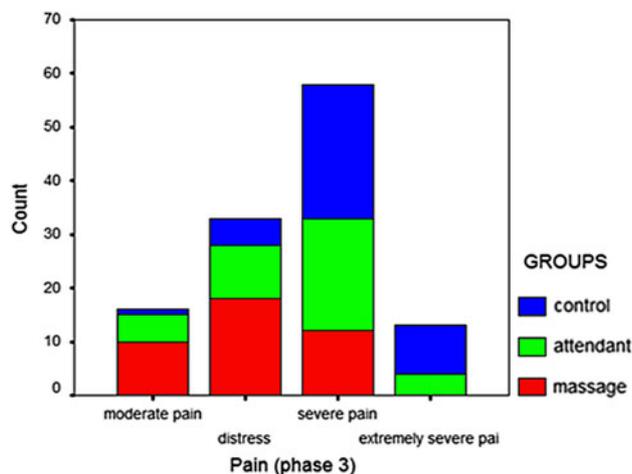


Fig. 3 Pain at phase 3 in three study groups

Discussion

The findings of this work revealed that massage, as a safe relieving method, can adequately effect on some inseparable properties of labor such as pain and decline them appropriately. In this case, Khodakarami et al. [19] showed that the mean pain intensity, which was assessed by VAS, was significantly lower in women receiving massage during labor compared with control group. Also they commented that massage therapy can reduce the medical intervention and analgesic usage during labor and significantly lower the duration of the first stage of delivery [19]. Another study by Kimber et al. [20] claims that massage therapy accompanying relaxation technique from late pregnancy to the birth is a supportive procedure which should be involved with large trials to assess the differences in self-reported pain, measured by VAS.

Another massage intervention by Chang et al. [21] clarified that administrating massage in the intervention group cannot change the characteristics of pain during labor but it can positively influence on pain intensity and reduce this aspect at latent and active phase of cervical dilation.

Another study in 2006 showed that a regular massage of more than 14 days increases the threshold of the pain by interaction between oxytocin and opioid nerves [22].

In our study the attendant group had statistically lower level of anxiety among all. In this instance, Latifes et al. [23] stated that massage is more effective than doing nothing during labor to decrease the level of anxiety and also Field et al. [13] showed that mothers receiving massage during labor experience lower level of anxiety Chang et al. [24], demonstrated that using massage therapy during a normal labor performed by the mother's partner, is an effective intervention to decrease the values of pain and anxiety. A study in 2005 stated that massaging and relaxing by

partners are effective ways to reduce anxiety. The partners in that study were taught to massage their spouses two times a week for 20 min. Ultimately, the result showed a significant decrease in the level of anxiety [23].

Our research showed that presenting an attendant who provides the emotional supports during the whole labor would be effective in lowering pain and anxiety, meanwhile altering the experience of giving birth to a more pleasant one. In case of presenting an attendant, Campbell et al. [15] indicated that the additional support by a female from the family or friend can significantly shorten the length of labor in the intervention group (accompanying with an attendant), greater cervical dilation at the time of epidural anesthesia, and leads to higher neonatal Apgar scores at both 1 and 5 min another randomized controlled trial suggested that the presence of a doula (trained labor attendant) can significantly decrease the rate of cesarean section and the need for epidural analgesia for both procedures with different proved side effects in mothers and the infants. Thus, the mother and her male partner's perspective about the presence of the doula during the whole labor were both positive [25]. In this research, the active phase length was dependently lowered by massage therapy and attendant presence. Other studies also have reported that presenting doula and using massage as an intervention lower the length of labor [16].

Obviously, massage and attendant could influence on the level of satisfaction significantly meanwhile impressing the anxiety and satisfaction trend in a positive manner. Chang et al. [21] also noted that massage by the mother's partner during the labor improves the mother's and surprisingly her male partner's satisfaction from the labor process. Improved sense of satisfaction with child birth following massage as a pain relief in labor process was commented in other studies too [20].

As preliminary results, the data revealed significant decreasing effects of massage therapy on pain and anxiety of primiparous women during labor which can be considered as a beneficial nonmedical approach in obstetrics practice. Besides, by a supportive presence of an attendant, pain and anxiety will subside noticeably. Thus, the presence of a member of family serves encouragement, security and psychological assurance for the laboring mother. Through these strategies, women will feel safe and experience delivery as a non-stressful physiological event and their level of satisfaction will improve. Considering the low power of the groups due to small sample size in this study, more studies need to be done in larger groups and various nations to substantiate these findings more exclusively and achieve a unanimous agreement.

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Conflict of interest None.

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