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Original Article

Effect of Massage Therapy on Severity of Pain and Outcome of Labor in Primipara

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Abstract

BACKGROUND: Labor pain is the most severe pain a woman experience in her life. The severity and duration of labor pain is more, in primiparous women and may lead to undesirable psychological effects, lowered self-confidence and anxiety. New supportive methods like massage therapy could change the labor into a pleasant and desirable experience. Regarding this, the current study was fulfilled to evaluate the effect of massage therapy on severity of labor pain.

METHODS: It is a clinical trial on sixty women undergoing delivery in selected hospitals of Tehran. Target population was all the women admitted in Mahdieh and Hedayat hospitals, Tehran, for delivery. The cases were primiparous women with single fetus in the age range of 20 to 34 with cervical dilatation of four centimeters and less and gestational age of 38 to 42 weeks. They were divided into massage therapy and control groups, randomly. Severity of pain was measured in visual analogue scale (VAS) and the questionnaires were filled at the cervical dilatation of 4, 8 and 10 centimeters. Massage therapy was done using effleurage method as a type of Swedish massage technique. The data was analyzed using descriptive (frequency distribution, mean and standard deviation) and analytical (independent t-test and chi square) statistical methods by SPSS software.

RESULTS: The results demonstrated that the mean of pain severity at the first stage of labor was significantly different between the experiment group and the control group, at the start of active phase (p= 0.009), end of transitional phase (p= 0.014) and end of the first stage (p=0.01). Also, the duration of the first stage of the labor was different in experiment and control group.

CONCLUSIONS: Massage therapy could be introduced as a new useful method during delivery; regarding its supportive role. It is supposed that the results of the study would introduce massage therapy as a non-pharmacological intervention during delivery to reduce the labor pain and causes a decrease in the number of cesarean sections, done to avoid the fear and anxiety, induced by normal vaginal deliveries in young mothers.

KEY WORDS: Massage therapy, labor pain relief, primipara

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Labor pain varies in severity and quality in different women, but it is one of the most severe pains a woman experience in her life. In primipara, it is more severe than other pains such as pain induced by arthritis, cancers or even labor pain in multiparous women [1]. All cultures, know labor as a painful process, but personal feeling toward it, reactive behaviors and cultural perception of the labor pain, is different in various cultures and societies [2]. Duration of labor pain and induced anxiety would affect the function of respiratory, circulation and endocrinology system, which would lead to an increase in number of dystocia. This would cause an increase in instrumental and manipulative delivery and even lower Apgar scores [3]. Harmful effects of severe labor pain on mother and fetus, especially in high risk pregnancies, makes labor pain relief, a must. Also, the duration of labor pain would affect the outcome of pregnancy and complications of the labor.

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Increased duration of delivery is accompanied by higher risk of infection, physical and mental harms and death for baby and higher probability of postpartum hemorrhage, infections, exhaustion, anxiety and psychosis [4]. Today, various pharmacological and non-pharmacological interventions are used to relief the labor pain. Most of the analgesics have side-effects for mother and baby [5].

Pharmacological pain relief methods include administration of narcotics, sedatives, inhaling analgesia, pudendal, paracervical and spinal blockage and epidural anesthesia [6]. Fetal respiratory depression is the side-effect of pethidine as a common labor pain relief; especially if it is used 2 to four hours prior to birth [7]. Epidural anesthesia could lead to sympathetic blockage and consequently, decreased maternal cardiac output, bladder distension, prolongation of second stage of the delivery and catheter displacement [8]. To relief labor pain, nitroxide, also could be administered. It would not cause second stage prolongation, but as all other anesthesia drugs, would pass the placenta and suppress fetal central nervous system [7].

An ideal labor pain relief method should meet the following criteria: having the least possible side-effects for mother and fetus, having permanent effect, could be administered easily, having appropriate sedative effect without intervening the uterine contractures [9]. Non-pharmacological pain relief approaches have different advantages such as lack of side-effect for mother and fetus and also being pleasant for both of them. Some of these approaches are muscle relaxation, respiratory techniques, hydrotherapy, music therapy, and massage therapy [2]. Some cultures have used massage therapy as a pain relief during labor, for hundreds of years [10]. Massage therapy is a scientific art that implement systematic hand techniques on soft tissue, muscles, tendons, ligaments, and fascia and uses hand, foot, knee and forearm in its techniques [11]. Massage would cause the endorphin release and reduce the ischemia by amplification of local blood supply. All of these would stimulate the sympathetic system and relax the skeletal muscles [2].

Chang and his colleagues in a study evaluated the effect of massage therapy on labor pain at delayed, active and transitional phases. He concluded that the massage therapy group, experienced lower level of pain at all phases [12]. Massage therapy during delivery would lead to relaxation and consequently, a rapid and easy delivery [13]. So, using new supportive pain relief methods such as massage therapy during delivery would change the delivery process into a desirable experience, by providing an effective emotional support. If this happens, labor induced pain and anxiety and therefore, tendency toward elective cesarean would be reduced. Today, the indication of many cesareans is not saving the life and health of mother and baby, but it is performed to avoid labor pain [14].

Regarding this, the current study was fulfilled to evaluate the effect of massage therapy on severity of labor pain and outcome of the delivery in primipara. In the study, the outcome of the delivery was defined as the duration of first and second stage of delivery and also the type of delivery.

Methods

This is a clinical trial study of semi-experimental type which was carried out on 60 primiparous women admitted for delivery in Hedayat and Mahdiyeh hospitals, Tehran in 2004. Target population was all the women admitted at mentioned hospitals during the time, the study was carried out. Inclusion criteria were primiparous women at the age range of 20- 35, with single alive fetus and gestational age of 38 to 42 weeks. Cases were randomly allocated to one of the experiment and control groups. The control group received routine, standard care without any intervention; while the experiment group received massage therapy using effleurage technique during delivery. Effleurage technique is a kind of Swedish massage which was used by Professor Linda Kimber in England during delivery for the first time.

The massage is administered on sacrum, buttocks, shoulders, waist, foot and hand during different phases of labor. The severity of

pain was measured in both groups before any intervention at the cervical dilatation of 4 centimeters (the start of active phase) and also after applying massage therapy. Also, the severity of pain was assessed at 8 and 10 centimeters (start of transitional phase and after first stage of delivery) and compared with the control group. Severity of pain was assessed using visual analogue scale (VAS) which is a ten centimeter line. The right and left extremes of the line are noted as pain-free and the most severe pain, respectively. The participants were asked to score their pain by marking the line. A questionnaire containing 17 items was also used to gather the data. It contained items on demographic data and properties related to the process of delivery. Finally, the participants were asked to express their idea about the intervention and also if they are willing to use the massage therapy in next deliveries. The data was gathered from Azar to Bahman, 1382.

The validity and reliability of the questionnaire was approved by content validity and equivalence test, respectively. Finally, the data was analyzed using chi square, t-test and descriptive analysis methods, by SPSS software.

Results

Findings of the study indicate that there are no significant statistical differences in severity of pain before intervention between the groups. In contrast, the mean score of severity of the pain at cervical dilatations of 4, 8 and 10 centimeters was significantly different between the groups (P= 0.009, P=0.014 and P= 0.01, respectively) (Table 1).

Table 1. comparison of the mean of labor pain scores at the first stage of delivery after massage therapy

	Minimum	Maximum	Mean	SD	Independent T	Df	p
Experiment	3.5	9	7.22	0.83	2.978	58	0.004
Control	4	10	7.94	1.02			

In addition, the duration of first and second stages of the delivery was assessed and compared by chi square test. It was demonstrated that the duration of first stage of delivery was 264.16 and 362.5 minutes, in experiment and control group, which was significantly different. (p< 0.001) 6.6% and 33.3% of the massage therapy and control group, respectively, experienced first stage of the delivery more than 420 minutes.

Using independent t-test, it was shown that the duration of second stage of the delivery was not significantly different between the groups (p=0.157). Mean duration of the second stage was 37.16 and d30.50 minutes in experiment and control group, respectively. Using chi square test, no significant differences were noted regarding the type of delivery.

Discussion

Results of the study demonstrated that the mean score of severity of the labor pain in mentioned cervical dilatations were lower in experiment group. Chang and his colleagues demonstrated that the massage therapy group experienced less pain in delayed, active and transitional phases and 26 out of 30 participants noted that they found massage therapy useful, supportive and relaxing during delivery [12]. Linda Kimber, also, demonstrated that 87% of women received massage therapy during delivery had a good feeling about it; and as the massage as applied by their husbands, it had a supportive role in reducing the labor-induced pain and anxiety. These women recommended it to other women, and are willing to take it in their next pregnancies [15]. The outcome of delivery was defined as the duration of first and second stages of delivery and

also, the type of delivery. Our findings demonstrated a lower mean duration of the delivery in experiment group. Other studies indicated that massage therapy would lead to reduction of delivery duration [16].

The duration of second stage of the delivery was the same in the groups. Brenda demonstrated that the advantages of complementary therapies (such as massage therapy, music therapy, etc) are mainly targeted toward the latent phase of first stage of the delivery, and the efficacy of the therapies in second stage is controversial [17].

Findings demonstrated that most participants of both groups underwent normal vaginal delivery. Kallus and his colleagues noted that presence of a supportive person at the bedside, during delivery would reduce the need for instrumental delivery, caesarian section and other intervention such as oxytocin induction and even accelerates the delivery process [18]. It seems that at present study, the continuous presence of the researcher at the bedside played the role of a supporter and reduced the fear of women in both groups by emotional support. Other studies indicated that the presence of supportive person at bedside, without any pharmacological and non-pharmacological interventions would reduce the rate of instrumental deliveries and cesarean sections. Regarding the results of the study and similar studies in other countries, massage therapy could be introduced as a new effective method during delivery. Also, topics related to non-pharmacological, supportive therapies during delivery could be added to midwifery curriculum. It is recommended that classes on pregnancy and applying massage therapy techniques be delivered for pregnant women and their husbands. This would help thems to reduce the labor pain to a tolerable level.

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