

Non-Pharmacological Strategies on Pain Relief During Labor

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Most women suffer from severe and intolerable pain of labor. Nowadays, the use of analgesics for pain relief in childbirth is rarely used due to maternal and neonatal complications and the non-drug and complementary medicine methods are increasing. This study aimed to investigate the non-drug methods of pain relief in physiological labor. In this descriptive study, 308 mothers randomly selected as candidates for natural vaginal delivery. For data collection, standard questionnaire of non-pharmacological methods of childbirth pain relief was used. Data were analyzed using the software SPSS18. According the collected data, the mean age of the 308 nurses in the study was 27.94 ± 3.21 and the average age of the 308 patients in the study was 26.80 ± 5.38 . 54.5% of the nurses in the first phase of childbirth used therapeutic massage and (54.4%) used aromatherapy of pain relief for 80 people (26%), and the method of breathing pattern was performed on 60 people (19.6). According to the above findings, using massage, aromatherapy and breathing pattern were cost-effective intervention strategies that can effectively be useful in reducing labor pain and creating a positive attitude to it.

Key word: Non-Pharmacological Methods, Labor, Pain Relief.

Childbirth is one of the largest event for the emotional life and a certain time for a pregnant woman¹. Pain is a subjective experience that the cultural and environmental, physiological and psychological factors affect it². Labor pain always makes worry the pregnant woman and sometimes it is the most important issue of concern for women and her family³. Pain relief is the first priority in satisfying human physiological needs⁴. In general, childbirth pain relief methods can be divided into three major groups including pharmaceutical and non-pharmaceutical, psychological and physiological approaches⁵. Non-pharmacological methods of pain relief have many advantages such as having no adverse effects on the mother and child, non-interference in the course of labor and even being pleasant for the mother and fetus.

These methods include muscle relaxation, breathing techniques, acupressure, hydrotherapy, music therapy, therapeutic touch and massage therapy⁶. A variety of supportive therapy has been proposed to reduce labor and numerous research studies have been conducted in this area. The results show that childbirth is facilitated in the women who more feel safe and their pain is properly controlled⁷. Pregnant women are concerned about the pain during childbirth and are considering how to deal with it. Fear of delivery pain is among the most important causes of refusing natural vaginal delivery. This issue in the process of childbirth and low awareness of the different ways to reduce labor, led to increase the rates of caesarean elections. Considering the reduction of labor and creating the perfect background for the use of pain relief methods in hospitals and maternities in our country will increase the tendency of mothers to natural vaginal delivery⁸.

Waters and colleagues performed a study

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with the title “the impact of ice massage in LI4 area for reducing labor which represented a significant reduction in delivery pain following ice massage⁹. Ice massage in the area of skin between the thumb and index fingers (Hoku Area) is an effective way to control pain during the first stage of labor⁹. In another study acupuncture at certain points relating to the transfer of labor including Hoku point (LI4) compared with the ineffective points resulted in the reduction of labor at 0.5 and 1 and 2 hours after the intervention and in addition, resulted to reducing the need to use other pharmaceutical pain relief such as epidural numb and pethidine injection and entonox gas¹⁰. Failed and others during their study showed that the mothers who received 20 minutes massage during labor, their pain and anxiety during childbirth was lowered¹¹. Using snow was utilized in the time of Hippocrates¹² and also local localized cry therapy for localized nerve block and painful stimuli has been suggested¹³. One of the CAM methods is using aromatherapy which is widely used in labor and upgrading delivery services¹⁴⁻¹⁵. Khamys et al in Ireland with the title “the effect of heat on uterine contractions during labor showed that heat has a significant increase on uterine activity without occurring any abnormal changes in the heart of the fetus. These researchers mentioned heat therapy as a new non-drug method to stimulate uterine contractions¹⁶. Geese Buhler in his study by comparison of childbirth in warm water and out of water, concluded that individuals in hot water less than the usual care group needed obstetric anesthesia and hot water in 69% of the cases reduced pain¹⁷. It is essential to make common and implement non-pharmacological approaches.

METHOD

This is a descriptive study and the subjects were the patients who referred to Maternity of Jiroft in 2015 and the previous outpatient and cesarean patients were removed from the study. The criteria to involve in the study were gestational age between 42 and 38 weeks, single pregnancy with a view of the head, Iranian citizenship, having a low-risk pregnancy, non-use of certain illegal drugs and non-consumption of alcohol and smoking during pregnancy, the normal situation of placenta and fetus, mothers willingness

to participate, and the exclusion criteria were lack of cooperation and mothers opting to intervene or withdraw from participation in the study, trauma during delivery, such as the use of birth tools like forceps or vacuum, extensive perinatal tear, abnormal bleeding, etc., any need to emergency interventions for maternal or fetal reasons such as bleeding from placental abruption, emergency cesarean for any reason during labor. Check list research tool was prepared according to the proposed manual of pain relief and scientific literature by researchers. The check list contains information about: checking the pain at different stages of childbirth and the use of pain relief methods according to protocol 2- data related to the patients (age, pregnancy count and 0000) and 3- information on nurses (age, education, work history and experience in the maternity sector). The data were analyzed after collecting using SPSS software and descriptive statistical methods.

RESULTS

Based on the collected data the average age of 308 nurses is 27.94±3.21 and the average age of 308 patients is 26.80±3.8

The number of pregnancies of women is 2.37±1.09 and the number of their prior childbirths is 1.34±1.09. The frequency and the frequency percent of the number of pregnancies and childbirths have been reported separated by the frequency in Table 1.

In the first phase of delivery, pain relief method of massage for 168 (54.4%) was performed and also at first stage of delivery, pain relief method of aromatherapy for 80 (26%), and the breathing patterns for 60 patients (19.6%) were performed. To compare mean demographic indices in the patients who had non-drug pain relief methods and the patients who these methods are not utilized for them, T test was independently used. Standard deviation average ± for some demographic variables along with -p for the related value is shown in Table 2.

According to the findings of Table 2, the average age of nurses, nurses' work experience, patient age, number of pregnancies and deliveries in the group that received massage in the first phase of delivery was different with those who did not receive massage ($p < 0.05$). In this study in order to

Table 1. Statistical summaries of demographic characteristics of case study nurses and patients

Variable		Frequency (percent)
Work history of nurses	1-5 years	191 (62%)
	5-10	116 (37.7%)
	More than 10 years	1 (0.3%)
Prior childbirth No.	1	79 (25.6%)
	2	91 (29.5%)
	3	93 (30.2%)
	4	35 (11.4%)
	5	9 (2.9%)
	6	1 (0.3%)
Pregnancy No.	0	80 (26%)
	1	97 (31.5%)
	2	87 (28.2%)
	3	34 (11%)
	4	9 (2.9%)
	5	1 (0.3%)
Prior childbirth method (Pre.parit)	Natural vaginal delivery	229 (74.4%)
	First delivery	79 (25.6%)

Table 2. Standard deviation average \pm for some demographic variables along with $-p$ for the related value

Demographic characteristics		Nurse age	Nurse work history	Patients age	Deliveries number	Pregnancies number	
Pain relief method							
	Massage	No	28.32 \pm 3.32	5.14 \pm 2.57	28.5 \pm 5.19	2.79 \pm 1.04	1.76 \pm 1.04
		Yes	27.5 \pm 3/01	4.53 \pm 2/40	24.76 \pm 4.89	1.87 \pm 0.92	0.84 \pm 0.92
	P-value	0.026	0.034	<0.001	<0.001	<0.001	
Breathing in the first phase of delivery		No	27.97 \pm 3.26	4.89 \pm 5.28	28.96 \pm 5/88	2.83 \pm 1.14	1.79 \pm 1.15
		Yes	27.93 \pm 3.18	4.85 \pm 2.46	25.27 \pm 4/41	2.05 \pm 0.93	1.03 \pm 0.92
		P-value	0.91	0.89	<0.001	<0.001	<0.001

investigate the relationship between two nominal variables of previous patient delivery with non-pharmacological methods of pain relief, Cramer’s correlation coefficient is used.

DISCUSSION

Labor is an acute pain that increases fast and is affected by physiological, physiological, social, cultural and environmental factors¹⁸.

Detailed assessments have confirmed this point that the use of non-pharmacological methods is a supporting, simple, effective, relaxing and safe method for women during childbirth. This study is based on the findings from the abdomen and back massage are used more than non-pharmacological

methods of pain relief; based on scientific resources available, the control gate pain can explain the effect of massage on delivery pain in this study. That is, massage activates large nerve fibers and shuts the gates of pain transmission. The other theory in this regard is that massage may cause secretion of endorphins and thus can reduce pain¹⁹.

Chung et al which also investigated the effect of acupressure in the 4LI area on labor pain and uterine contractions, founded that significant differences exists in the level of pain after invention between the acupressure group and the control group and touch group²⁰.

The use of touch therapy like abdomen massage, pressure on the sacral region, shoulder

and back massage helps women maintain their sense of body integrity and increases the ability to their compatibility with the delivery²¹. Massage during labor can provide emotional support for women.

The right and the right time touch helps women to have control over their bodies and maintain their sense of body integrity²². Pilehvarzadeh writes: based on subjective evaluation of women, massage eases pain and is mental supporter.

Massage affects women response to pain, and causes less anxiety and feeling more secure, comfortable feeling and having the satisfaction during delivery. Massage also makes communication between nurses and women during childbirth and serves as a psychological intervention during childbirth²³.

Given that the environment of our study was a learning environment with educated experts and midwives, they more used massage to reduce pain using their experience and knowledge.

The other non-pharmacological approach in this study to reduce pain after massage was aromatherapy. Essences stimulate the receptors that are located in the olfactory bulb and olfactory message is transmitted to the limbic system. Limbic system is the brain's emotional center which can respond to stress by secreting enkephalin, endorphin and serotonin and help create a sense of calm²⁴. In one study, nurses used aromatherapy during childbirth on 8058 mothers that showed using lavender reduces fear and anxiety in mothers and decreases the use of epidural anesthesia in this group²⁵. Relaxation techniques were used to reduce pain after two previous methods in this study. One of the most effective ways of coping with stress and pain of labor is non-pharmacological methods. Studies have shown that relaxation reduces the fear of childbirth, facilitates and accelerates delivery. Relaxation and imagination affect the autonomic nervous system and causes the relaxation. Regular relaxation exercises during pregnancy, increases the mother's level of success in relaxation during labor. Relaxation and visualization of delivery during pregnancy can make strong the mothers' emotions to the unborn child and help to maternal compliance. In addition, increased positive adjustment dramatically is associated with general

health of pregnant women and helps the emotional relationship between mother and fetus²⁶. After a review of 18 controlled study showed that relaxation and stress relieving methods affect various aspects of effective anxiety disorder²⁷.

In a study, the midwives have stated that due to the low number of staff, lack of a suitable location, less number of midwife for labor, culture and policies of the hospital, they rarely use non-pharmacological methods²⁸. Pilehvarzahdeh " writes: culture and attitude can affect the potential behavior^{29,30}.

Breathing patterns are among Lamaze methods that are used to get more control of labor. This training helps mothers to cope with labor pain. The main goal of these techniques is to divert mind from the pain, because focusing on one issue could block the transmission of pain messages from the site of pain. Slade results showed that these techniques were less effective than what is thought to be in reducing pain³¹. Using breathing techniques and massage are among effective pain control. They are non-invasive methods to improve relaxation and increase the relationship with mothers during labor and delivery³². In this study, experience and knowledge of this method has been effective in reducing labor pain; therefore it has been suggested that midwives and nurses with the use of non-pharmacological methods of reducing labor pain such as breathing techniques, relaxation and massage, help women during labor to change their attitude towards labor pain and delivery in addition to decreasing labor and make their attitude positive towards these issues. On the other hand, since the use of these techniques is more effective when the training is given to mothers during pregnancy, thereby it is recommended that classes for delivery be held during pregnancy period to have an active role of mothers in the process of labor and also a shortage of manpower doesn't prevent the use of this comprehensive method.

CONCLUSION

Based on the results of this study, the support of midwives during labor and delivery and the use of non-pharmacological methods of pain relief enable women to effectively adapt themselves with the pain of delivery process as well as getting

a positive attitude to delivery process.

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