

Review Article,

Non-Pharmacological Pain Management on Patients of Maternal Childbirth 1 Stage Period: Literature Review

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Abstract

Pregnant women are usually worried about pain during childbirth. It is caused by the force of contractions in the uterus and the pressure that occurs. Pain will increase when the cervix is fully dilated due to fetal pressure on the pelvic structures followed by stretching and tearing of the birth canal. The fear of pain during childbirth is a reason for women to choose to give birth by caesarean section. Every woman has a different pain threshold.

Handling labor pain needs to be considered by health workers when helping deliveries. One of the interventions that can be done to reduce pain is pain management. Pain management is an action to reduce and relieve the pain that is felt. Pain management aims to help patients control pain so that the pain is lost or reduced. Pain management can be done with pharmacological and non-pharmacological techniques. Both of these techniques aim to reduce or eliminate labor pain by blocking the pain nerves.

Related to this problem, a literature review is needed to dig deeper into the information in scientific research journals, so that we can get an overview from various points of view of research, especially regarding the names of pain management performed on maternal patients. This type of research is a literature review with a rapid review technique from journals on the Cochrane library and pubmed data base.

Keywords: Maternal childbirth, labor pain, non-pharmacology, yoga, aromatherapy

Introduction:

Background

Childbirth is a process of expulsion of the fetus and placenta which is quite months and can live outside the womb, expulsion of the fetus and placenta spontaneously or with the help of medical personnel. Many mothers undergo the problems during labor as well as pain during delivery, so that in developed countries some mothers choose to give birth by Caesarean section rather than give birth normally. In Iran as much as 37.2% of mothers choose to give birth by Caesarean section because it reduces the pain and fear of labor pain. Maternity data centers for hospitals throughout Indonesia, it is known that 15% of mothers in Indonesia undergo the complications of childbirth and 21% stated that the births experienced were labor which was

painful because they felt pain, while 63% did not get information about the preparations that must be done to reduce pain in labor. In developed countries the use of Complementary and Alternative Medicine (CAM) is very popular. 30% and 50% of mothers use some CAM techniques to prevent or reduce pain during labor. 49% of women of childbearing age choose complementary therapy during pregnancy. In the United States as many as 9% of women use complementary therapy. Excessive pain can have an impact on the mother and the fetus, prevent post-partum bleeding, labor infections and prolonged labor, thereby increasing the genesis of fetal distress or the risk of fetal death, labor pain continues to increase pain during uterine contractions, stretching the pelvic muscles and stretching the basic tissues pelvis around the birth

canal. *Primigravida* mothers will feel very intense pain at the time of delivery.

Management of labor pain is the main thing that needs to be considered by health workers when providing delivery assistance. Nursing management of labor pain is the main goal of intrapartu care. Various methods of handling pain can be carried out in women who give birth, both pharmacological and non-pharmacological. Non pharmacological pain management is very effective in reducing pain during labor. From the background of the problem above, a literature review is needed to dig deeper into the information in scientific research journals in order to get an overview from various research perspectives on what pain management is performed by stage I labor patients. So based on the description above, the researcher is interested in conducting a literature review entitled “Non-pharmacological pain management on patients of maternal childbirth I stage period.

Searching strategy and study selection

Source of literature review study was conducted through several article such as the Cochrane library, pubmed and Clinical Key.

The following literature study was carried out by searching through the Cochrane Library and pubmed are as follows;

1. Looking for articles in the Cochrane Library using keywords: Mother * AND 1st stage labor pain OR Labor pain AND Complementary alternative therapies * OR Complementary Medicine OR non pharmacological AND Pain reduction.

2. Looking for articles in pubmed using keywords: Mother * AND 1st stage labor pain OR Labor pain AND Complementary alternative therapies * OR Complementary Medicine OR non pharmacological AND Pain reduction.
3. Looking for articles in Clinicalkey using the keywords Mother * AND 1st stage labor pain OR Labor pain AND Complementary alternative therapies * OR Complementary Medicine OR non pharmacological AND Pain reduction. A search in the Cochrane Library for 985 articles, Pubmed found 214 articles, 5 from 2016-2020.

The literature used in this study includes both journals and international ones the following criteria::

1. The inclusion criteria in this literature study are:
 - a. Written paper in English
 - b. Published in 2016 – 2020
 - c. The result of research
 - d. Related to non-pharmacological pain management in stage I labor mothers
 - e. Q1 and Q2 disreputable journal
2. The exclusion criteria in this literature study are:
 - a. Not full paper
 - b. Conference paper
 - c. Not the result of research
 - d. Journal of Acupuncture

Study Selection

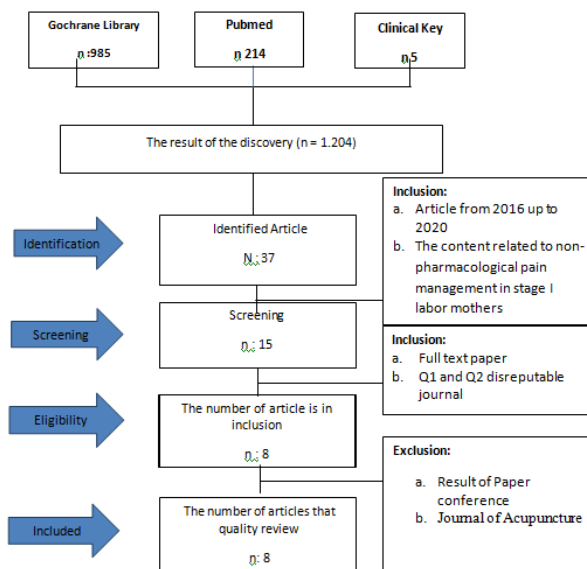


Table 1 The average of Pain Intensity on Maternal Childbirth

Reference	Sample	Study Type	Country	Intervention and Sample	Latent Phase3-4 cm		Active Phase	
					Intervention	Control	Intervention	Control
Bolanthakodi C	125	RCT	India	Yoga (n=75)	6.43	7.95	9.43	9.62
Giti O	105	RCT	Iran					
				L 14 (n=35)	4.49	7.09	6.14	9.53
				BL 32 (n=35)	3.97		5.74	
Tanvisuti R	104	RCT	Germany	Aromatherapy	1.88	2.60	5.45	5.62
Imunevver gonenc I	120	RCT	Turkey	Massage dan Acupressure	5.83	4.63	8.73	9.33
				Massage (n=30)	4.56		8.18	
				Acupressure (n=30)	5.43	6.16	9.10	9.93
				Massage + Acupressure (n=30)	4.63		8.73	
Taavoni Simin,	90	RCT	Iran	Birth Ball and Warm compress			7.54	9.29
Akkoz Cevik S	60	RCT	Turkey	Sacred Massage	3.57	4.67	8.83	9,7
Jahdi F	60	RCT	Iran	Yoga	2.63	3.55	3.9	8.4
Hamdamian S	110	RCT	Iran	Aromatherapy	3.25	6.36	6.69	9.78

Discussion:

Yoga techniques originate from India for their function to train the mind and body. It is becoming increasingly recognized as a health practice to reduce pain, improve psychological well-being (reduce the frequency of positive mood states and optimism) and physical fitness. This yoga therapy is carried out by a Yoga therapist. The Yoga group was divided into two, namely the intervention group and the control group. Initially, the sample of Primigravida mothers was 200 people. At the time the study was stopped, some had complications and some did not follow yoga, so the total sample was 150 people. The intervention group was 75 people and the comparison group was 75 people³. The intervention group did 30 minutes of yoga exercises at 30, 32, 36, 37, 38 and 39 weeks of gestation. Further exercises independently 3 times a week. The technique is in accordance with the principles that have been previously studied and given a booklet. Follow up by making phone calls and filling in a diary. Pain was measured twice at

the opening of the latent phase 3-4 cm and the active phase 8-10 cm. Cervical dilatation of 3-4 cm was obtained a mean value of 6.43 and p value = 0.0001 (p <0.05). There was a significant difference between the intervention group and the control group. And in 8-10 cm cervical dilatation, the p value = 0.089 was not significant, but the mean value of the intervention group was 9.43 lower than the control group³.

Yoga exercises are very effective in reducing labor pain and have no side effects, are easy to learn, give peace of mind and increase normal delivery and SC birth rates are less and yoga exercises also reduce the birth rate of low birth weight (LBW) ³.

The next journal is still about Yoga. Samples of primigravida mothers gestational age 26 weeks up to 37 weeks, yoga exercises are done 3 times a week for 60 minutes. Each patient is given a booklet and DVD⁷.

Pain was measured at the time of dilation of 3-4 cm, the average value was 2.63 and the value of p = 0.01 and 2 hours after the second examination was carried out the average value was 3.58 and

the value of $p = 0.000$ and 2 hours after the second examination was carried out on three obtained an average value of 3.9 and a p value of 0.000. The results indicate that there is a significant difference between the intervention group and the comparison group. Yoga gymnastics has decreased births by SC 13.3% and induction 29.3%⁷.

The effects of Sacred Massage and Acupressure on the touch method to relieve labor pain. Massage under a doctor's supervision for 30 minutes using effleurage (pat) and stroking. A sample of 60 pregnant women, 30 of whom were in the control group and 30 of those in the experimental group, gestational age 38 weeks - 42 weeks. Pain was measured 3 times in the latent phase 3-4 cm, the active phase 5-7 cm and the transition phase 8-10 cm. Mean latent phase opening (3-4 cm) VAS (3.57 ± 1.43) p value = 0.004 mean active phase opening (5-7 cm) VAS (7.03 ± 1.5) p value = 0.001 and Mean phase transition (8-10 cm) VAS (8.83 ± 1.78) p value = 0.01 of the intervention group trial was statistically significant with a value ($P < .05$)².

There was a significant difference between sacred massage and acupressure with the control group. Sacred massage is more effective than acupressure. Massage that is given in the sacral area has a positive effect in labor, during labor reduces labor pain and increases maternal satisfaction and this massage has no side effects².

The effects of Massage and acupressure in a sample of 120 maternal mothers were divided into three intervention groups (massage only, acupressure only, and massage + acupressure) and a control group, where patients did not receive massage or acupressure treatments. Acupressure is carried out for 30 minutes, at the Sanyinjiao point (SP6) using an Acupressure Tape. SP6 is located 3 kun (approximately 4 cm) on the ankle where the rubber band is attached with a small plastic button at the SP6 point. One acupressure band is used for each patient. Meanwhile, massage begins after the acupressure tape is attached massage done for 30 minutes the head, neck, back, arms, hands, feet, gestational age 38-42 weeks.

Pain was measured 3 times in the latent phase 3-4 cm, the active phase 5-7 cm and the transition phase 8-10 cm. In the latent phase of labor, the mean VAS values of the massage-only and massage + acupressure groups were lower (4.56 ± 1.36 and 4.63 ± 1.52 , respectively) compared to

the control group (6.16 ± 1.46 ; $p < .01$). In the active and transition phases, the mean VAS values of the massage only, acupressure only group, and the massage + acupressure group were significantly lower compared to the control group ($p < .01$ and $p < .001$, respectively). During the *puerperium*, the mean VAS values of the massage + acupressure group were lower (2.30 ± 0.70) than that of the control group (2.96 ± 0.72 ; $p = 0.003$). Cervical dilation completion time and Apgar score of 1-5 min were similar among all groups ($p > .05$). The three intervention groups returned with relatively more positive feelings than the control group, and all three interventions proved to be effective in satisfaction⁶.

The effectiveness of using a birth ball with warm compresses on the sacrum, 90 *primiparous* mothers were divided into 3 groups, 30 birthing ball groups, 30 warm compresses and 30 control. Intervention was given at 4 cm opening. In the ball group, mothers are encouraged to sit on the ball and shake their back for at least 30 minutes and place their arms at their sides then the respondent starts swinging his hips forwards and backwards or around in a circle. Whereas in the warm compress group, the water was boiled at a temperature of 45 ° C, then put the towel into the warm boiled water. Encourage Respondents to hold hot towels to avoid burning or inconvenience. The respondent lay down during the delivery process and the midwife gave warm compresses to the sacred area and perineum. The midwife recorded every 30 minutes until the opening was 8 cm. the respondent provided information to the midwife to change towels when the towels were cold. For the control group no intervention was given. The average pain in the warm compress group was 7.54 lower than the control group 9.29¹⁰.

The effect of LI4 and BL32 acupressure on primiparous women, the number of respondents was 105, the L14 group was 35 respondents, the BL32 group was 35 respondents and the control group was 35 respondents. The intervention at point L 14 is the main point of the large intestine meridian which is located on the back of the hand and BL 32 is the main point of the meridian which is located in the foramen of the second sacrum. Intervention begins with a cervical opening of 4-5 cm, 6-7 cm and 8-10 cm. Respondents in group L14 sat in a position as comfortable as the respondent. Researchers put pressure on the L14

point and pressed deeply and fluctuated around L14 until the color of the researchers' nail bed changed. The pressure is stopped at the end of the contraction and starts again at the beginning of the contraction. This was repeated for six contractions and after the sixth acupressure, the respondent was asked to determine the level of pain. The intervention was repeated at 6-7 cm and 8-10 cm cervical opening.

The intervention group BL 32 respondents sat in a chair; the researcher put pressure on the sacrum until the color of the nail bed researchers changed. The pressure was stopped at the end of the contraction and started at the beginning of the contraction. The average pain in the L 14 group was 6.14 and the BL32 group was 5.74 while the average pain in the control group was 9.538.

The effects of aromatherapy with Rosa Damask. Ros is produced from flower petals which is a herbal medicine for its relaxation, antioxidant, antibacterial and anti-diabetic properties. Rosa Damask aromatherapy intervention with cotton 10 cm-10 cm placed on the neck given a dose of 2 drops, measured for 10 minutes. There are no side effects of these flowers. The sample of Nulipara mothers were 110 people divided into two groups, the intervention group was 55 people and the control group was 55 people. Pain was measured 3 times, at the 4-5 cm dilation stage the mean value was (3.25 ± 1.02) $p = 0.00$, the active phase was 6-7 cm the mean value (5.11 ± 0.71) $p = 0.00$ and the active phase continued 8-10 cm (6.69 ± 0.47) $p = 0.00$. So there is a significant difference between the aromatherapy Rosa Damask and the comparison group. Aromatherapy is very helpful in relieving pain in the latent and early active phases, and may be used as an additional method of reducing pain during labor⁵.

The effect of aromatherapy, the researcher offered respondents to choose the aromatherapy to be used, there were 4 choices (lavender, rose geranium, orange and jasmine), for aromatherapy they were given 4 drops of aromatherapy in 300 diffused water. Diffused administration starts from labor to delivery. Respondents of primigravida mothers gestational age 37-41 weeks, the total sample is 104 divided into two. The intervention group consisted of 52 people and the control group consisted of 52 people. Pain was measured 3 times in latent phase 3-4 cm mean value (1.88 ± 2.24) $p < 0.001$, active phase 5-7 cm mean value (3.82 ± 2.45) $p < 0.001$ and continued

active phase 8-10 cm mean value (5.45 ± 2.28) $p < 0.001$ There was a significant difference between the intervention group and the control group. So Aromatherapy is very helpful in reducing pain in the latent phase and the active phase. Aromatherapy may be used as an additional method to reduce pain during labor and has no serious side effects⁹.

Conclusion:

Based on the results of the Literature Review, after the researchers collected the results of scientific decisions regarding the effects and benefits, it can be concluded that non-pharmacological therapies that can be used in maternal patients to reduce pain during cervical dilatation in the latent, active and transitional phases are Yoga Gymnastics, Sacred Massage, Acupressure, Aromatherapy, Massage, Birth Ball, Aromatherapy compresses with Rosa Damask.

It is known that 8 journals analyzed showed the results that Yoga was most effective in reducing labor pain in the first stage with an average value in the latent phase of 2.63, the active phase 3.9. Researchers also found that the provision of non-pharmacological therapy can be given to all normal delivery mothers, both the latent and the active phases. In addition to reducing labor pain, non-pharmacological therapies also provide positive effects that are beneficial to provide peace of mind and mind, increase normal delivery and reduce delivery by SC, and reduce the birth rate of LBW and there are no side effects of non-pharmacological therapies. It is suggested that in combination health services, non-pharmacological therapy can be considered as an independent intervention in dealing with pain in laboring mothers.

Suggestion:

a. For Medical Personnel

It is suggested that in combination health services non-pharmacological therapy can be considered as an independent intervention in dealing with labor pain in laboring mothers.

b. For mothers who are about to give birth

It is recommended to be able to apply simple non-pharmacological therapy that can be done independently at home and practice yoga exercises in dealing with labor pain.

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