



Original Research

Metacarpal Acupressure Reduced Pain in the First Stage of Labor

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Abstract

Pain during labor will cause psychological disorders for mothers, such as 87% of postpartum blues, 10% of depression and 3% of psychosis. Therefore, intervention to relieve pain level is necessary to prevent complications for mother and fetus during the process and after delivery. One of the simple methods to relieve the pain level of childbirth is metacarpal acupressure. The application of this method is usually only done by health workers, although a spouse or other family member can conduct it. This study aimed to describe the application of metacarpal acupressure by the husband to relieve pain level in first delivery women. The study used a descriptive-analytic design. The population was 40 husbands, who were waiting for their wives at the first stage of labor. The husbands have been trained about Acupressure methods. The sampling method used a consecutive sampling method. The results of the study revealed 75% of husbands did well for practicing acupressure methods, 60% of women claimed they got pain relief after given Acupressure by their husband. The recommendation of this study is the importance of a spouse's presence in first stage labor for reducing the pain of mothers in childbirth.

INTRODUCTION

Most deliveries (90%) is always accompanied by pain while in labor pain is a common thing to happen, the pain of labor is a physiological and psychological process.^{1,2} Reported from 2,700 women giving birth only 15% of births take place with mild pain, 35% with moderate pain, 30% with severe pain and 20% of deliveries with severe pain.^{3,4} Health statistics of Central Java obtained deliveries by skilled health personnel is not a maximum 82.75%, and in particular, the county Kendal obtained 64.71% figure means about 35% of deliveries are handled by other than medical personnel.⁵ Moreover, likely

deliveries take a patient's own home. Labor pain can stimulate the release of chemical mediators including prostaglandins, leukotrienes, thromboxane, histamine, bradykinin, substance, and serotonin, which will result in the secretion of stress hormones like catecholamine cause and steroids with consequent vasoconstriction of the blood vessels to weaken intestinal contractions.⁶ Excessive secretion of these hormones will cause uteroplacental interference circulation resulting in fetal hypoxia. From the research, pain in childbirth causes women to experience psychological disorders, 87% postpartum blues that occur from 2 weeks to 1 year

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postpartum, 10% and 3% depression with psychosis.⁷

Labor pain is not unbearable encourage maternal looking for some alternatives to treat pain, including use of pain medications such as analgesics and sedatives.⁴ While these drugs can give adverse side effects include fetal hypoxia, the risk of neonatal respiratory depression, decreased heart rate and increased maternal body temperature and may cause changes in the fetus.^{4,8} Therefore, interventions reduce labor pain is necessary to reduce complications in the mother and fetus during the process and after delivery. Many kinds of methods performed by health workers to reduce pain in childbirth. Non-pharmacologic intervention reduces pain, among others, hypnosis, acupressure, yoga, hydrotherapy, acupuncture, Acupressure breathing, and relaxation techniques.⁹ Acupressure metacarpal proven to reduce labor pain but not much done. This method is relatively easy to do by the health worker and his family, especially her husband to help her to reduce the level of labor pain. The importance of the role of the family, especially the husband in a decrease in the level of pain in labor should be recognized as an appropriate strategy because her husband and can act as a psychological support to the wife in labor, so as to reduce morbidity and maternal mortality rates are not directly impact on reducing vulnerability and addressing the impact of the disease. Therefore, the present study aims to describe how her husband practices after getting training methods of Metacarpal acupressure to reduce pain in first stage labor.¹⁰⁻¹²

Labor pain is a pain felt by the mother in labor. From the research, pain in childbirth causes women to experience psychological disorders, 87% of postpartum blues that occur from 2 weeks to 1 year postpartum, 10% and 3% depression with psychosis.³ Therefore, it is necessary to find a solution to the labor pain that is cheap and practically can be used by mothers to

reduce pain in first stage labor. The contribution from the research includes a) providing information about one of the alternatives to reduce labor pain in a nonpharmacologic. b) inform the husband's role in the practice of counter-pressure method to reduce pain levels in the mother during the birth process first stage c) Provide information support the importance of family, especially the husband (spouse) in nursing care in labor.⁴

The delivery process begins with uterine contractions that cause pain and discomfort in women who give birth.⁵ Physiological factors Pain: Paths pain starts from the nerve endings (receptors) on the site of tissue damage then formed trajectory spinal afferents to the spinal ganglion in the posterior spinal cord Radik, then delivered to the pathways/ tracts ascending to the pain center of the central nervous system. Psychological factors of pain: Past experiences, value systems associated with pain, family expectations, environment, emotions, culture. *Signal Reception and transmission of pain.* Excitatory nerve pain in the air-channeled myelin faster than non-painful stimuli to the nerve myelin. The nerve fibers are divided into several groups: 1) Air-myelin nerve fibers Receptors are mechanosensitive nerve conduction quickly, respond to mechanical stimuli, such as by the pressure and touch. 2) Air-myelin nerve fibers a mechanothermal nerve receptors that respond to the rapid conduction of mechanical stimuli, such as pressure, touch, and heat. 3) C nerve fibers are not air-poly-modal nociceptor myelin, nerve conduction is slow to respond to some stimulus.¹³

Distribution of pain signals from the spinal cord to the distributed network through Radik posterior spinal nerves stayed in the dorsal horn of the spinal cord and continues to form a complex connection. This is what often makes it difficult to determine which pain is felt, especially in visceral pain. Then the pain signal is delivered to the pain centers in the central nervous system via

pathways spinothalamic pathway before reaching the center of the pain is in the brain stem and then stayed the thalamus. After the thalamus and then the sensation of pain distributed to several somatosensory cortexes of the brain. When the pain signal reaches the brain, the signal does not stop proceeding in which multiple signals to the motor cortex and then down through the spinal cord to the motor nerves. This impulse causes muscle contractions experienced a painful stimulus.¹³

Descending inhibition of pain begins at the somatosensory cortex to the thalamus and hypothalamus channeled. Derived from the thalamus to the mesencephalon then form a synapse with ascending pain pathways in the medulla oblongata and medulla spinally, and inhibit nerve signals ascending. This led to the formation of the body's natural painkillers caused by stimulation neurotransmitter opioids (such as endorphins, dynorphin and enkephalin).^{6,13}

Pain signals can be attributed by the autonomic nervous system and the current through the medulla oblongata can cause increased heart rate, increased blood pressure, increased respiratory rate and sweat production. This reaction depends on the intensity of the pain and can lead to depression centers in the cortex.¹³

The transduction process produces a magnification of pain impulses and in-transmission by pain pathways to the spinal cord dorsal horn. In the cornu of the spinal cord impulse modulation of the pain experience, which can be enlarged or reduced. It assists modulation of nerve fibers running nociceptive impulses from the periphery toward the center, and finally accepted the brain as a sensation/perception of pain.^{6,13}

Ronald Melzack and Patrick Wall explain the mind and emotions can influence the perception of pain and through the mechanism of the Gate Control Cornus posterior spinal cord. Small nerve fibers and

large fibers in the cell synapsed projector (P) which is going through the spinothalamic tract leading to the pain centers of the brain, and also synapsed interneurons inhibitors.

These relationships determine when a painful stimulus is channeled to the brain by several mechanisms as follows. When there is no input of pain, the nerve fibers inhibitors prevent the projector from delivering signals to the brain (gate closes).^{6,13} 2) normal somatic sensation when there is stimulation of the larger fibers or just stimulation of large nerve fibers and nerve, the nerve inhibitors projector will be stimulated, but the neural inhibitor prevents nerve signals to the brain projector channel (gate closes). 3) Acceptance of nociceptive pain occurred when the smaller fibers stimulated. This causes the inactivation of the nerves and nerve inhibitors projectors to deliver pain signals to the brain (gate open).⁶

Most women will experience pain during labor. The pain of labor is individualized. Each individual will perceive pain differently to the same stimulus depending on its pain threshold. Pain in childbirth is fundamentally different from the pain experienced by individuals in general. The difference lies in: a) the labor pain is a physiological process, b) Women can know that he will experience pain during childbirth so it can be anticipated, c) adequate knowledge of the birth process will help women to cope with labor pain that is intermittent (periodically), d) the concentration of women in the baby to be born will make it more tolerant to the pain felt during labor.³

Factors that affect pain include age, gender, culture, understanding pain, concern, anxiety, fatigue, past experiences, coping patterns, family and social support. Acupressure is one of the techniques that can be used to reduce labor pain. Metacarpal acupressure consists of a fixed given a strong impetus to the point in the

metacarpal during contractions. Acupressure is given in the areas of pain or discomfort when the contractions started. Acupressure is usually performed at metacarpal. Gate Control Theory can give reasons why this action is successful. Gate control theory of Melzack and Wall, 1965 said the pain impulses could be regulated or even inhibited by the defense mechanism along with the central nervous system.¹⁰ Defense mechanisms can be found in the cells of the substantia nigra in the dorsal horn of the spinal cord, the thalamus, and the limbic system. This theory says the pain impulse is delivered when an impulse inhibited defense opened and closed when a defense. Efforts to close the defense is a basic pain relief therapy.¹⁴

Caplan in Friedman explains the family has some support functions namely; a). Informational support: The support is the provision of materials that can provide direct assistance such as the provision of money, the provision of goods, food, and services. This form can reduce stress because individuals can solve problems that relate directly to the material. b) Support the assessment. The form of this support involves the award of the information, suggestions or feedback on the individual circumstances. This type of information can help individuals to identify and solve problems easily. c) Support the instrumental. The support is a source of practical and concrete help, such as the health of people in terms of the need to overcome the pain, eating and drinking, resting, avoiding sufferers of fatigue. d) Emotional support. The form of this support has made people comfortable feeling, sure, cared for and loved by the family so that individuals can face problems with either. This support is very important in the face of a state that cannot be controlled.

METHODS

The method used is descriptive which gives an overview of the practice of husbands to reduce maternal pain in the first stage of

labor by using an Acupressure. The population in this study were all women giving birth by normal delivery at the first stage and as a whole, the maternal sample is the normal delivery at the first stage of which is in the Kendal Hospital, with a sample that meets the criteria watchman husband and wife, the first wife.

Consecutive sampling technique sampling.

Data collection was started by selecting respondents based on criteria, then trained Counter-pressure method. The instrument in this study is a set of tools in the form of instruments action steps that are used to guide him into doing Acupressure and set of tools for measuring instruments that have been validated, pain respondents. Applied research ethics approval or informed consent i.e., anonymity with no name, give the patient the freedom to provide flexibility patient rights.

RESULT AND DISCUSSION

Factors that affect reproductive health support to her husband, that knowledge about pregnancy and childbirth, experience, marital status, and socioeconomic status.⁵ From the research data obtained 35% of elementary school-educated husbands and 85% of workers are husband's job as a factory worker, shop workers, and other workers. This suggests that the husband's education level and family income is low relatively low.

As seen in Table 1, the husband's support is very important in the delivery process. Because at the time of delivery occurs physiologically severe pain interferes with the mother. From the results, the husband's behavior when trained counter-pressure is 77% of this kind of behavior shows their husband's attention when obtaining information relating to the wife in the delivery process is very large. The behavior of a good husband provides convenience in receiving information in the training of counter-pressure. This is consistent with

the findings that 80% of men can perform actions Acupressure 3 times correctly.

In general, from the results, the practice of the husband to perform acupressure is good (75%) it shows no concern in giving support to the wife in labor. In the face of labor required consultation and support from family, especially her husband. Age is one indicator that can reflect the maturity of someone in the act, including in decision-making. The average age of the husband is 32 years old; it shows the average husband belonged to a young adult. Young adults can show positive behavior in preparing for the future, including in preparing a generation descendant of the family, especially the reproductive, developmental tasks. Minimum age is 18 years old husband (7.5%) of this age is still part of adolescence to early adulthood is possible to still less mature in the decision included in the act of doing spousal support (included in the delivery process). From the research data obtained there is still 23% less good husband in training Acupressure and 25% less well in practice Acupressure. This is possible because the husband is still there under the age of 20 years.

Table 1.
Characteristic behavior while training on counter pressure on the respondent (husband) in Soewondo hospitals, Kendal, 2015

Spouse Behavior while training	Do		Not done	
	f	%	f	%
Husband listens to the goals Acupressure Method	26	60	14	40
Husband listens to the way action reduces labor pain with AcupressureSuami	36	90	4	10
Active husband asked as an explanation	20	50	20	50
The husband can take action to correct the Acupressure least 3 X while training	32	80	8	20
A husband willing to act Acupressure when the wife felt pain in the first stage of labor	40	100	0	0

Age also affects a person responds to pain. Judging from the average age of the respondent (wife) is 28 years showed a majority in the age group 20-30 years, in addition to the average of the respondents were in the productive age, as well as physiologically possible still withstand labor pain. However, in addition to individual pain response, pain is influenced by many things such as the environment, race, certain actions and also the pattern of one's coping in the face of pain.

Table 2.
Characteristics of pain to reduction measures by the respondent (spouse) to Acupressure practice in Soewondo hospitals Kendal, 2014

Acupressure action	Do		Not done	
	f	%	f	%
Husband tells wife Acupressure measures to reduce labor pain	38	95	2	5
Husband gives a wife a position as comfortable as possible on the felt labor pain	20	50	20	50
The husband gave t comfort position before the action of pressure	28	70	12	30
Fourth husband looking for the right spot to apply pressure with Acupressure to reduce the pain of his wife	32	80	8	20
Husband doing a strong push at the point in the metacarpal during contraction using the heel of the hand	36	90	4	10
Husband doing a strong push at the point in the metacarpal the contraction of the thumb	24	60	16	40
The husband asked his wife whether the pain is reduced when performed Acupressure	36	90	4	10
Husband always do acupressure when the wife felt pain during childbirth	28	70	12	30

The result showed that 22% of mothers who received Acupressure measures were primigravida and has had second thoughts, it means the mother has had previous experience of overcoming pain. The results of the study mothers pain after Counter-pressure is reduced pain by her husband as much as 60% of mothers and only a small proportion is 12.5% said the pain increased after the Acupressure by the husband, and 27.5% of mothers said there are no changes in their pain even after given counter-pressure by their husbands. Individual labor pain and many other factors are influential.¹¹

Table 3

Table frequency of pain after doing Acupressure by husband in Soewondo hospitals Kendal, 2014

Level of Pain	f	%
Reduced	24	60
Not reduced	11	27,5
Increased	5	12,5
Total	40	100

CONCLUSION

Metacarpal acupressure action performed by the spouses can reduce the pain of a mother in first stage childbirth. From these results, it is suggested that health workers involving husband's birth attendants in the delivery process especially in reducing labor pain.

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CONFLICTS OF INTEREST

Neither of the authors has any conflicts of interest that would bias the findings presented here.

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