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COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM) IN THE FIRST STAGE OF LABOR PAIN: A LITERATURE REVIEW

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ABSTRACT

Background: *Excessive pain in labor leads to the side effects on the maternal and neonatal health. Many strategies for labor pain management have been studied, including complementary therapies, yet the comparison of the effectiveness among them needs to be explored more. This study aims to analyze the effectiveness of complementary therapies to reduce pain in the first stage of labor.*

Methods: *This was a literature review using electronic databases from Google Scholar, PubMed, Science Direct, EBSCOhost and text books. The keywords of searching literature were 'complementary therapy', 'pain', and 'first stage labor'. All articles reviewed in this study were written in English and Indonesian language with the published year 2010 until 2018.*

Results: *In total, there were 44 out of 232 publications included in this study. Complementary therapies that can be used to reduce first-stage labor pain were aromatherapy, acupressure, and hypnotherapy. Using lavender aromatherapy, pressing the point of L14, SP6, BL32 as well as the use of hypnobirthing showed significant influence in reducing the pain at the first stage of labor among pregnant women.*

Conclusion: *Acupressure is more effective in reducing the pain at the first stage of labor than other alternative techniques. In order to effectively manage the pain at the first stage of labor, a combination of complementary therapies and pharmacological treatment is needed.*

Keywords: *complementary and alternatives medicine, first stage labor pain*

INTRODUCTION

Pain is a common problem in labor. Every mother experiences different pain (1). The intensity of labor pain in primiparas is often more severe than multiparous. Because multiparous causes thinning cervix simultaneously entailed by dilatation of cervix. Meanwhile, primiparous cervix thinning process precedes cervical dilatation. This process causes heavier intensity of contraction in primiparous than multiparous, especially in the first stage of labor. Influential factors to pain degree is a physiological factors: general condition, age, size of the fetus, parity, endorphin; and psychological factors such as fear, anxiety, self-control abilities Affect labor pain (2).

In the first stage of active phase, somatic pain occurs. It is fast, sharp and may be contained quickly, especially at the end of labor (3). Pain is more frequent, causing many mothers experiencing fatigue, anxiety and despair (4). At present days of developing countries, 20% to 50% of births in hospitals are Carried out through cesarean section because mothers prefer surgery since it is relatively painless (5).

Untreated pain during labor may lead to frustration and despair, so that some women think they are unable to do so (6). Furthermore, pain can cause stress to inadequate uterine contractions and lead to prolonged labor (7). Excessive release of hormones such as catecholamines and steroid causes smooth of muscle tension and constricting blood vessels (8). As result of decrease in uterine

contractions, decreased uteroplacental circulation, reduced blood flow and oxygen to uterus, as well as the onset of ischemia of the uterus making worsening pain impulses (9). Pain causes anxiety, uncooperative, fatigue and inertia of uterus as a result of increasing opening; intranasal increases risk of infection, bleeding; fetal distress increases morbidity and mortality for mothers and babies (10,11). Research in the United States shows 70% to 80% of giving birth women expect the process to be painless (5).

Various methods were given to mothers who delivering Reviews their babies and did not feel pain, even feeling comfortable (5). Health professionals needed to provide caring in reducing labor pain (12). This pain can be treated pharmacologically and non-pharmacologically. Pharmacological methods include analgesics, epidural injections, intrathecal Labor Analgesia (ILA), and Block Paracervical (13). Pharmacological method is more expensive, and give adverse effects to health of mother and baby. For example, the use of ILA can complicate health personnel in observing contraction of uterus especially when it occurs uterine rupture (2).

CAM is one of non-pharmacological therapies used as an adjunct to pharmacological therapy. CAM is cheaper, simple, effective, and having no adverse effects (14). Some of CAM for pain in labor are aromatherapy, acupressure, and hypnotherapy (13). The purpose of this article is to describe CAM for labor pain in the first stage.

METHODS

The reviewed articles were from Science Direct Including electronic databases, Pubmed, Google Scholar, and EBSCOhost. The key words are "complementary therapies" and "pain on the first stage of labor".

There are 232 publications are found from 2010 to 2018 discussing therapies for pain in the first stage of labor. As many as 79 Articles have been removed because there are duplications, only remaining 153 articles left. From 153 articles there are found 69 relevant articles. Then they were screened by using inclusive and exclusive criteria. A total of 25 articles excluded because they did not meet these criteria, so there were 44 articles that corresponded to this review. The inclusive criteria are written in English and Indonesian, scribe effect of aromatherapy, hypnotherapy or acupressure on first stage labor pain. The pain was measured by standard instruments such as Visual Analog Scale (VAS) or Numeric Score Scale (NRS). The exclusive criteria are the articles written in other languages, besides English and Indonesian.

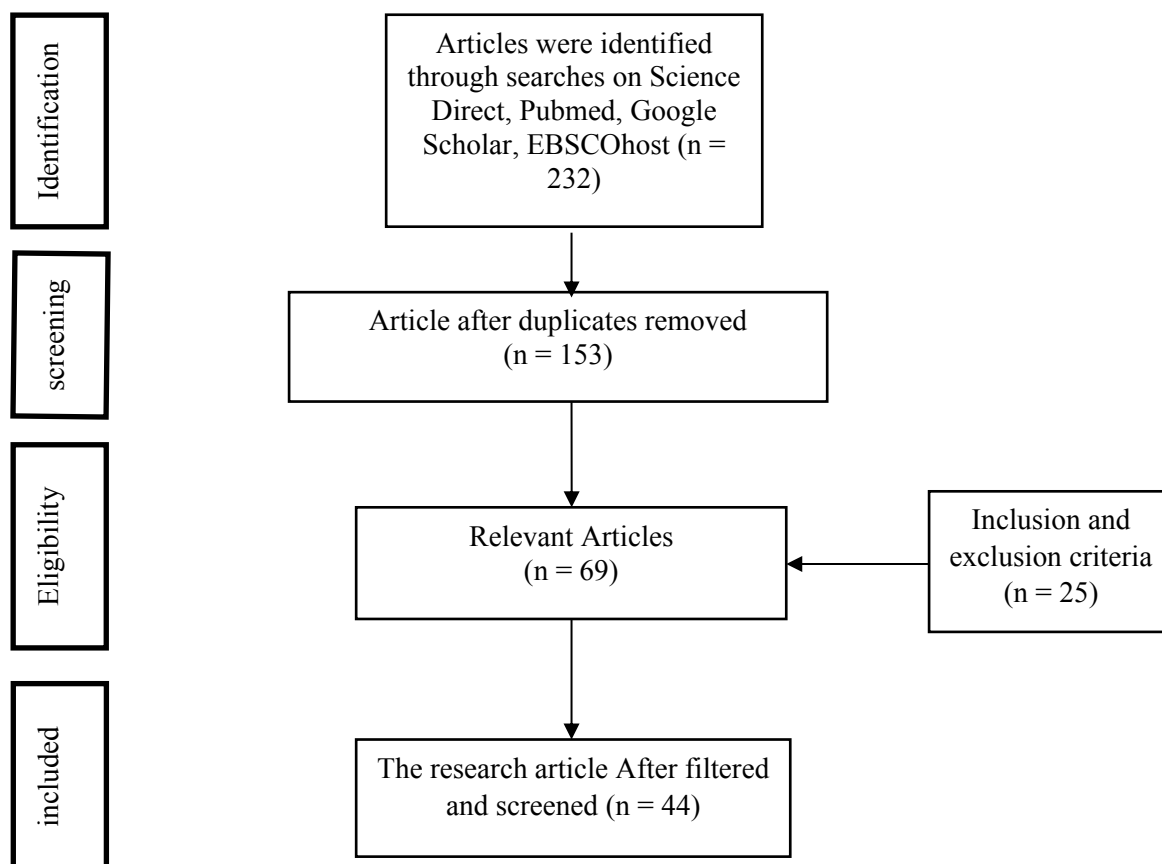


Figure 1. Flowchart of the exclusion process and final selection of Literature review

RESULTS

Complementary therapy is a non-pharmacological treatment aiming to improve public health included promotive, preventive, curative and rehabilitative obtained through a structured education with quality, safety, and high effectiveness based on Evidence-Based Medicine (EBM). Assessment of pain levels used VAS (visual analog scale) and NRS (Numeric Scale Score), and were carried out before and after the intervention.

Aromatherapy

Aromatherapy is a non-pharmacological method that uses essential oils to enhance physical and emotional health effects (14,15). Aromatherapy can reduce pain on latent phase (16). This is because aromatherapy scent affects sensing smell nerves, so it released neurotransmitters such as enkephalin, endorphin, and serotonin. Endorphins are compounds produced by analgesia body and act as an inhibitor of pain by blocking the transmission of impulses in the brain and spinal cord (17). The aroma of essential oils may calm and relieve labor pain (18). Several kinds of essential oils are safe to use for pregnancy and labor such as rose, jasmine, lemon, lavender, bitter orange and pine (19).

Based on the search that has been done, 6 of 10 journals proved that aromatherapy was effective in lowering labor pain. Lavender aromatherapy effective in reducing labor pain and had no adverse effects on infant Apgar scores. In addition, the lavender aromatherapy might relieve pain in post-injury Caesarian section (20). This is supported by other studies that said the lavender aromatherapy was antispasmodic as simple, inexpensive, non-invasive, and effective therapy in labor. (21).

Aromatherapy is very helpful in reducing pain on latent phase. Thus, it can be used as an additional method without side effects (22). Furthermore, bitter orange aromatherapy can also be used to reduce labor pain (23). In another study, extracts of jasmine aromatherapy proved to have significant results in reducing labor pain in active phase of first stage of laboring women (24).

Acupressure

Acupressure is a healing technique by pressing, kneading, and massaging parts of the body to activate energy circulation (25). Acupressure points that can be used to reduce labor pain are LI4 and SP6. Point LI-4 is located at the back of the hand, between the first and second metacarpal bone, in the middle of the second metacarpal bone on the radial side. SP-6 point is four finger width above the medial malleolus at the posterior border of the tibia (26). Acupressure is done by pressing point LI-4 and SP-6, then rotated clockwise every 5 minutes. This manipulation can take place for 20 minutes (27).

Stimulate acupressure add fibers that enter the dorsal part of the spinal cord, causing segmental inhibition of pain stimulus to be delivered by C fibers and through connections in the midbrain (28,29). By pressing the point LI4 and SP6 then transmitted via large nerve fibers to reticularis formation, thalamus and limbic system to release endorphins in body (27).

Based on the search that has been done, 6 of 10 journals show acupressure is proved effective in lowering labor pain of active phase on first stage. In a study conducted by Ozgoli said pressure on the point LI4 and BL32 might reduce pain significantly than the control group (30). There is a significant effect on the reduction of labor pain in the group before and after giving acupressure therapy ($P: 0.000$) (31). There is effect of Lo4 (he kuk) and thai cong acupressure to the first stage of labor pain in maternal levels ($p\text{-value} = 0.000$) (32).

Hypnotherapy

Hypnotherapy is an integrated mind-body technique with therapeutic potential in a variety of healthcare applications, including labor and giving birth (33). Hypnotherapy is carried out during a state of hypnosis. Hypnotherapy is often used to modify behavior of subject, feelings, attitudes, as well as state of dysfunctional habits, anxiety, stress respect, pain management, and personal development (34).

Hypnosis in child-birthing called Hypnobirthing. Hypnobirthing is a relaxation method based on the belief that pregnant women can experience childbirth through instincts and suggest that delivery is scrumptious (35). Hypnobirthing work based on power of suggestion, using positive affirmations, suggestions and visualizations to calm body, guiding mind, as well as controlling breath of the client. The client may perform this process by themselves (Self Hypnosis) or by assistance of labor companion/midwife. It can be done with give verbal affirmations to help clients enter a quiet state of hypnosis (36).

Based on the search that has been carried out, 6 of 10 journals discussing hypnobirthing is proven effective in lowering pain on active phase of first stage of labor. There is significant difference to hypnotherapy group whose positive thoughts about pregnancy and childbirth so that pain will be easier to control (37). It also discloses that babies born by mothers who suffered from excessive anxiety and stress have higher risk of neurological development, immune system and emotional. Hypnobirthing can effectively reduce anxiety in pregnant women during childbirth (38).

It is shown that hypnotherapy can reduce labor pain as well as accelerating process of childbirth with $P: 0.000$ ($P < 0.05$) (39). In a similar study, hypnobirthing was helpful in relieving labor pain and increased comfortable feeling during labor, and had an added value for the mother to be confident, relax, to stay focus, and to have no fear (40). This is supported by other studies showing significant effect on pain intensity reduction and progress of labor (23).

DISCUSSION

Based on the results of the study found that aromatherapy, acupressure, and hypnotherapy are effective to reduce labor pain. Aromatherapy is more effective in reducing the pain than bitter orange and lavender (41). Giving aromatherapy through inhalation will stimulate olfactory nerves, and responded by the hypothalamus to stimulate the limbic system and anterior hypophysis in order to reduce secretion of adrenal gland hormone ACTH and cortisol hormone, sympathetic activity and release acetylcholine, and to increase parasympathetic system. The result will provide a relaxing effect. So it can reduce pain (42).

Acupressure effectively lowers labor pain without side effects and can be used in conjunction with other therapies. In the first stage of labor, acupressure can be used when contraction is painful. This pain blockage occurs when energy flows along specific meridians in the body. The blockage is released through acupressure technique by pressing point LI4 and SP6, harmony and functionality will be back to normal (25). Acupressure has an advantage compared to other techniques or methods. Acupressure is very practice because it does not require a lot of tools and just use the fingers, thumb, forefinger, and palm as well as inexpensive and safe (25).

Hypnotherapy effectively lowers labor pain. However, this therapy should be carried out by experts. Study conducted in Turkey, mothers who get hypnobirthing therapy could feel a sense of comfort and relaxation to help her labor (43). Relaxing the conditions at the time of hypnobirthing causes adrenal medulla secreted endorphins. Endorphins are neurotransmitters that suppress pain stimulus, so it reduces perception of pain and anxiety. Therefore, it builds a positive perception and confidence as well as decreasing fear, anxiety, tension, and panic (before, during and after childbirth). Thus, woman may give birth fearlessly. The muscles of her body, including the muscles of the uterus, will experience relaxation that makes birth process easier and stress-free (39).

CONCLUSIONS

It can be concluded that aromatherapy, acupressure, and hypnotherapy effectively reduce labor pain. The health worker is expected to implement the complementary therapy in providing care to mothers who experience pain. For authors, it is expected to review other methods of reducing labor pain and use more reference.

CONFLICT OF INTEREST

There is no conflict of interest

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