

Effect of Acupressure on Duration of Labor and Intensity of Labor Pain

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ABSTRACT

Labor is a phenomenon that exists in many creatures and unlike other acute and chronic pain, the pain of labor does not correlate with any disease or pathology. The complications of pain are tension and anxiety, prolonged labor, abnormal fetal heart rate, increase the incidence of cesarean delivery and neonate's low Apgar score. Acupressure is a non-invasive method, which is used to augment labor, provide pain relief, and shorten delivery time. **Aim:** the aim of this literature reviews are evaluate the effectiveness of acupressure on labor pain's intensity and duration of labor. **Methods:** A comprehensive search of databases and Internet research engines holding information related to effect of acupressure on duration of labor and intensity of labor pain, Pub Med, Saudi digital library and Google scholar search engine from 2010 to 2016. **Results:** Eight articles were included in this review. **Conclusion:** The acupressure was more effective in initial phase of labor, the effect of the intervention were more visible immediately after the intervention. In addition, the acupressure helps in reducing the perception of pain during the first stage of labour without any side effect on the mother or the foetus.

KEYWORDS: Search terms entered into database were labor, acupressure, labor pain, non-pharmacological pain relieve

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Review of literature:

Labor is a phenomenon that exists in many creatures and unlike other acute and chronic pain, the pain of labor does not correlate with any disease or pathology. Labor pain has been reported as the severest pain in humans. The complications of pain are tension and anxiety, prolonged labor, and abnormal fetal heart rate, the incidence of cesarean delivery, neonate's low Apgar score. (2-3). One of the most pressing concerns and fears for pregnant women is the pain of labor, which leads to an increase in the number of cesarean sections (1,2,3). Pain during labor is a universal experience, although the intensity of the pain may vary. Although labor and childbirth are viewed as natural processes, both can produce significant pain and discomfort. The physical causes of pain during labor include cervical stretching, hypoxia of the uterine muscle due to a decrease in perfusion during contractions, pressure on the urethra, bladder, and rectum, and distention of the muscles of the pelvic floor. A woman's pain perception can be influenced by her previous experiences with pain, fatigue, pain anticipation, positive or negative support system, labor and birth environment, cultural expectations, and level of emotional stress and anxiety (3,4,5).

Acupressure is a non-invasive method which is used to augment labor, provide pain relief, and shorten delivery time (5). It increases the intensity of uterine contractions without affecting the duration and intervals of uterine contractions and, eventually, reduces the duration of delivery (6). Acupressure used on the BL60, BL67, GB21, LI4, SP9 and SP6 sites affects uterine contractions or duration of labor by stimulating the secretion of oxytocin from the hypophysis (7). According to the WHO the normal labor supposed to have certain criteria, it should be spontaneous onset, between the 37 and 42 week of pregnancy, spontaneous birth of the infant in the vertex presentation and the mother and the baby should be in good condition after birth (8)

In other side, many non-pharmacological methods applied to improve women's comfort and relief labor pain, such as water therapy, application of heat hot and cold, touch, breathing techniques, music and focusing and feedback relaxation and acupressure. Water therapy also called hydrotherapy; the pregnant woman can immerse herself in warm water, use the warm path, hot towels and use the warm shower (9,10). The warm water provides body

relaxation, promote comfort, and reduce anxiety, which decrease adrenaline production. Consequently stimulate uterine contractions by increasing oxytocin and relief labor pain by releasing endorphins^(11,12). The best time to use the hydrotherapy the active phase whether the membrane intact or rupture, the reason is to prevent the slowing of labor contraction⁽¹³⁾.

Breathing techniques also used in first stage of labor to promote abdominal muscles relaxation. The nurse can teach the pregnant woman how to breathe effectively. We can include the husband to support his wife. The deep breath enhance the oxygenation of the mother and the baby^(12,13). Besides the previous methods, Focusing and feedback relaxation technique reduce labor pain by making the woman focusing her attentions on objects make her comfortable or preferred objects, also she can imagine that she walks in garden⁽¹⁴⁾.

Acupuncture is an old Chinese medicine that has been used since 3000 year. Stimulating specific points in the body by using the needles. When we acupuncture that's points it can reduce the pain perception by releasing endorphin. Acupuncture need a specialist person not any health care provider can apply it^(14,15). Acupressure has been used in china for more than two millennia, but few past decades the western involve this kind of medicine. The acupressure in Japan originated in 1900s as Shiatsu, when we separate the word Shi mean finger and atsu mean pressure^(14,16). According to Yin and Yang theory about acupressure's application, the Yin refer to night, dark, cold and earth, the Yang refer to light, hot, active and toward the heaven⁽¹⁶⁾. There is other explanation of Yang and Yin, Yang is existing in the external body surface like the leg outside surface it's also exist in the hollow organ like the stomach. Yin exist in interior body area and exist in solid organ like the liver. The uterus consider solid and hollow at the same time^(16,17).

We have to maintain balance between the Yang and Yin to have a good health. The Qi is an energy found in anywhere in the universe particularly in the human body via the meridians. The meridians are the pathway that guides the flow of Qi in the body. There is around 14 meridians that branch in the body they are the Large Intestine: LI, Stomach: ST, Heart: HT, Bladder: BL, Pericardium: PC, Liver: LV, Governing vessel: GV, Lung: LU, Spleen: SP, Small intestine: SI, Kidney: KD, San Jiao: SJ, Gallbladder: GB and Conception vessel: CV. Each meridian have deferent role.⁽¹⁸⁾

According to Chinese theory about the Qi, every person in the world borne with a balance Qi and it's maintain balance by the nutrition, lifestyle and other influence but when the body can't maintain the balance the Qi disrupted and the illnesses can occur. The aim of applying the acupressure is to rebalance those points^(15,19). By apply pressure to acupoint on the body meridians to stimulating energy channels and to rebalancing the body energy and restore health^(14,19). Also, can be used to shorten the time to delivery and manage labor pain. A 2015 MEDLINE, CINAHL, AMED, Cochrane database review include seven trials on 748 women used different acupressure point. The result shows the length of labor reduce particularly in the first stage⁽⁸⁾. Pressure applied with the heel of the hand, fist or pads of the thumbs and fingers and best applied over the skin without using lubricants during contraction in early labor until transition phase⁽²⁰⁾.

Also apply to points are found along the neck, spine, shoulder, toes and soles of the feet. Usually determines the strength of pressure according to the needs of women^(20,21).

Many studies were concerned about alternative and complimentary therapies on dealing with labor pain particularly Acupressure technique. An Indian Randomized controlled trail done to evaluate the application of acupressure during the active phase on nulliparous women in reducing the labor pain. The study involve 212 pregnant women and the researcher divide them to three group, the acupressure, light touch and the third group who receive the standard care. The application of acupressure at sp6 point show significant different in reduction of pain at the active phase⁽²⁰⁾.

A systemic review discusses the effect of acupressure on onset and duration of labor. It's involve the a published randomized controlled trials and controlled trials that are taken from MEDLINE, CINAHL, AMED, Cochrane collaboration and science direct from 1990 to 2013. The study compare acupressure with placebo and no treatment and done on primigravida and multiparous. The study included seven trials using different acupressure point and technique, one study discuss the initiation of labor and six studies discuss duration and labor pain. Four result shore that acupressure can reduce the length of labor however further studies should be done to support the finding.^(20,21)

Another systemic review support to previous tow study that the application of acupressure can reduce the labor pain but also we need further study to be sureness. Meta-analysis study the effect of acupressure on duration of labor and mode of delivery conducted to summarize and assess evidence regarding the effects of acupressure on duration of labor and mode of delivery. Four major databases and Google Scholar. Thirteen studies were included in meta-analyses. the Selection criteria was Randomized controlled trials were included if they examined the effect of acupressure at any acupoint during childbirth on duration of labor and/or mode of delivery. This study aimed to evaluate the effect of acupressure on initiation of labor. The researcher applied the study on 150 normal pregnant women, he divide them to three group the acupressure, sham acupressure and the routine care. The result did not support the previous studies the acupressure was not effective in stimulating the labor.^(22,23,24) Nevertheless, we cannot say that the acupressure is not effective in reducing the pain and the duration of labor due to allot of reason, in this research the intervention hasn't apply at the active phase also the acupressure was done by the mother and her participant after training not by experienced person.

In addition, another study planned as a randomized, controlled experimental study to examine the effectiveness of acupressure applied to Point LI4 on perceived labor pains. The sample size was 88 pregnant women (44 acupressure group, 44 control group), who complied with including criteria of the study. Acupressure applied to the study group when cervical dilatation reached 4 to 5 cm and again when cervical dilation was 7 to 8 cm. The visual analog scale made 6 times in different times the results show that applying acupressure to Point LI4 was effective in decreasing labor pains and shortening the labor. However, mothers reported that found it insufficient to control their pain^(22,23,24)

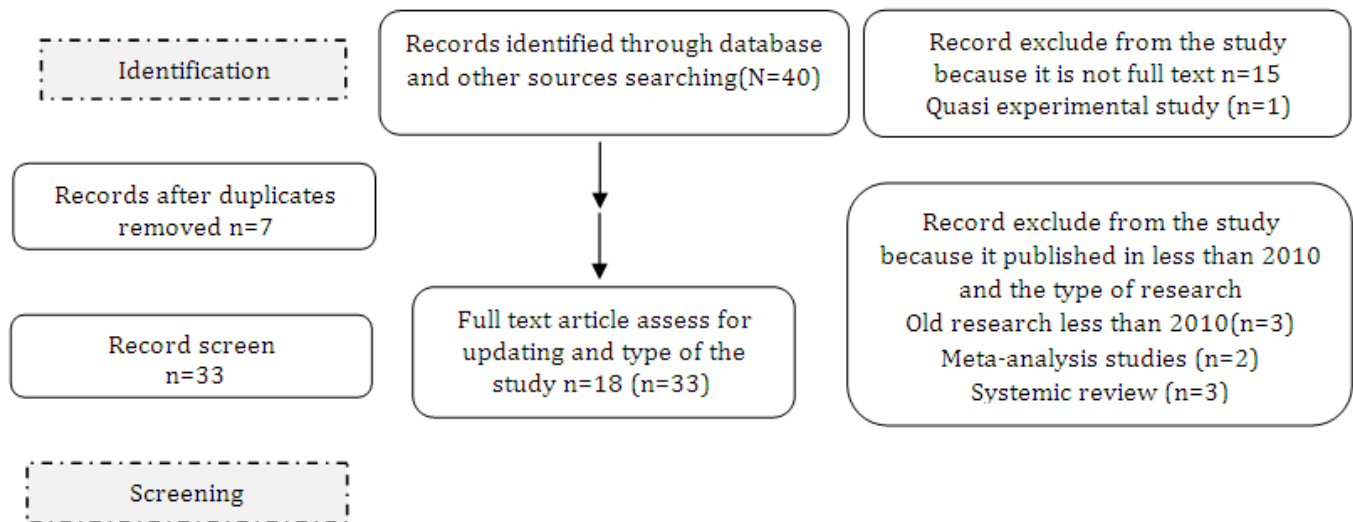
A single, blind, randomized clinical trial was performed with eligible women (N = 100). The including criteria was based on the participants were at the beginning of the active phase of labor (3-4 cm dilatation of cervix with regular uterine contractions). Women in the acupressure group received LI4 acupressure, and the women in the control group received a touch on this point without massage. The measurement of labor pain by using a structured questionnaire of a subjective labor pain scale (visual analogue scale).^{23,24}

Methodology:

A comprehensive search of databases and Internet research engines holding information related to effect of acupressure on duration of labor and intensity of labor pain, Pub Med, Saudi digital library and Google scholar search engine from 2010 to 2016. The key search terms entered into database were labor; acupressure; labor pain. Databases searched for relevant information contained within journals, books and abstracts. Literature searches limited by full text articles, year of publication from 2010 to 2017.

Tools for data collection :figure 1

1. Visual Analog Scale (VAS), Partograph. And Structural Interview Questionnaire for women.
- 2.



Result: Effect of acupressure on labor pain:

Among the eight articles that met the inclusion criteria, seven studies identified the effect of acupressure on reduction pain (see Table 1). Provides an overview of the year of publication, setting, population, and measures and results of each study.⁽²⁵⁾ Table (1) Studies addressing the effect of acupressure on intensity of labor pain

Author, year of publication	Sample	Setting	Study design	Effect of acupressure in labor pain)	Limitation
Kiyemet Yesilcicek Calik and Nuran Komurcu 2014	100 Prim-gravida women	Trabzon Maternity Hospital in Turkey	-Single blind	The SP6 acupressure was effective in decreasing pain	-gestational age of 37 to 41 weeks -cervical opening 2-cm fetus with a -weight of 2500
Giti Ozgoli, Sedigheh Sedigh Mobarakabadi 2016	105 women	Obstetric department of shahid akbarabadi hosbital	Randomized Controlled Trial	Pain reduction was significantly greater in LI4 and BL32 groups compared with control in all periods of study..	Difficulties to apply acupressure bilateral because of IV line
Reginaldo Roque Mafetoni and Antonieta Keiko Kakuda Shimo 2016	156 pregnant women	Public hospital on the outskirts of the state of Sao Paulo, Brazil.	Randomized clinical trial	The averages for the pain measured using the VAS were not different	Excluded of serious preeclampsia, placenta previa, immediate indication of cesarean..

According to the previous table, a reduction of labor pain found in the acupressure group and was most noticeable immediately after treatment (acupressure group vs. standard care group $p < 0.001$; acupressure group vs. touch group $p < 0.001$).^(23,24,25) The mean and standard deviation of

level of labor pain was higher after therapy ($M=8.95$, $SD=0.83$). When compared with labor pain before therapy ($M=7.4$, $SD=0.51$) in the control group, whereas the mean and standard deviation of the level of labor pain was lower after therapy ($M=5.63$, $SD=0.66$) when compared with labor

pain before therapy ($M=7.86$, $SD=0.34$) in the experimental group ($p < 0.001$ level of confidence) ⁽²⁶⁾ There was a significant decrease in mean intensity of pain after each intervention in the experimental group with different dilatations (4, 6, 8 cm). Moreover, the Student's independent t-test results indicated that the mean intensity of pain in the experimental group after the intervention in all four dilatations was significantly lower than the control group. Repeated measures ANOVA test indicated that in both experimental and control groups in four time periods, there was a statistically significant difference. ^(26,27)

The difference in the pain scores between the acupressure and control group was statistically significant ($p < 0.001$). There were significant differences between the groups in subjective labor pain scores (except VAS 4) ($P < 0.001$) ^(46,47) Significant difference in pain relief between LI4 point and control groups ($P = 0.001$, $P = 0.001$), B32 point and control groups ($P = 0.001$, $P = 0.001$), and LI4 and BL32 groups ($P = 0.01$, $P = 0.03$) in the first and second period of intervention, respectively. In the third period of intervention, the acupressure groups (LI4 and BL32) were not significantly different regarding pain relief ($P = 0.18$) but experienced a significantly greater pain relief than controls in the third period of intervention ($P = 0.001$). ^(27,28)

The averages for the pain measured using the VAS were not different for the three groups that were a part of the study ($p\text{-value}=0.0929$), however they were less in the acupressure groups immediately after receiving the treatment ($p\text{-value}<0.0001$). This was also the case where the treatment lasted for 1 hour ($p\text{-value}=0.0001$). This was the case in comparison with placebo and control groups ^(25,26,27,28). Different variables include in the study. Four research use SP6 point, three research use LI4, one study use BL32 and one research use scalp acupressure. However, although the differences in acupressure points, the acupressure was able to reduce the labor pain. Among the eight articles that met the inclusion criteria, three studies identified the effect of acupressure on duration of labor. That provides an overview of the year of publication, setting, population, and measures and results of each study.

Discussion:

The findings of the research investigated using eight original articles. These studies using quantitative and qualitative methodology have been demonstrated similar and different results from several countries. However, the researcher provides an analytical conclusion of the findings, links them with the current literature, builds their implications and address the limitations of the study. Recommendations presented as well. This literature review study carried out on the object of evaluating the effectiveness of acupressure on labor pain intensity and duration of labor.

A randomized controlled trial randomized controlled trial study aimed to evaluate the effect of acupressure on labor pain. The acupressure apply on SP6 point on both legs for 30 min. VAS don three time, before, after the intervention immediately and 30 to 120 min after the intervention the acupressure was more effective in initial phase of labor. The effect of the intervention were more visible immediately after the intervention ^(25,26). Another RCT study support the previous one titled Effectiveness of Scalp Acupressure upon Labor Pain and Coping among Prim parturient Women. The

acupressure apply for four min every one hour during the active and transitional phase of labor. The scalp acupressure help in reducing the perception of pain during the first stage of labor without any side effect on the mother ^(24,25,26).

In a randomized clinical trial study that aimed to examines and compares the effect of LI4 and BL32 acupressure with each other and control group on labor pain. The results indicated that the significant decrease in pain after each period of intervention in acupressure groups and significant differences between acupressure and control groups in pain relief supports the effectiveness of applying pressure to LI4 and BL32 points in reducing labor pain. Thus, the authors of the current study agreed with the result of the study. Furthermore, the difference in pain relief between LI4 and BL32 groups in the first and second period of intervention showed that acupressure on BL32 points is slightly more effective than on LI4 point in relieving labor pain ^(27,28,29)

Conclusion:

Finally, as mentioned in several published paper before, the majority of researchers said that, acupressure is a useful way to alleviate pain and it can be apply easily be put into practice in medical institutions with a view to improving the quality of care given to pregnant women in labor who would like a natural birth. However, the effect of the treatment in the reduction of pain is small, which suggests that acupressure may be more effective where there are cervical dilations up to 8 cm and there is cephalic presentation. Acupressure is considered as an alternative for women that prefer to use methods that do not involve drugs and side effects which is often the case for medical practitioners in obstetrics.

References:

- [1] Shoorab NJ, Zagami SE, Mirzakhani K, Mazlom SR. 2013. The effect of intravenous fentanyl on pain and duration of the active phase of first stage labor. *Oman Med J*. Sep;28(5):306-310.
- [2] Yesilcicek CK, Komurcu N. 2013, Acupressure . 2nd ed, Istanbul, MA: Nobel Medical Publishing;.
- [3] Penny Simkin, Ruth Ancheta. 2017. The labor progresses handbook. Canada : John Wiley and sons,
- [4] CIA. 2017, MIDDLE EAST :: SAUDI ARABIA. [Online] 9, <https://www.cia.gov/library/publications/resources/the-world-factbook/geos/sa.html>.
- [5] Traci C, Johanson, 2017, normal labor and delivery process online 18(11), <https://www.webmd.com/baby/guide/normal-labor-and-delivery-process>.
- [6] Robert M Ehsanipoor , 2017, Andrew J Satin , FACOG. Normal and abnormal labor progression online 15(11), <https://www.uptodate.com/contents/normal-and-abnormal-labor-progression>
- [7] American Pregnancy Association. [Online] 11 (10), 2015, <http://americanpregnancy.org/labor-and-birth/third-stage/>
- [8] Mathibe-Neke J. M. 1 *, Lebeko F. L. 2 and Motupa B. 3, 2013, The partograph: A labour management tool or a midwifery record, *International Journal of Nursing and Midwifery*, 5(8), 145-153

- [9] Nagwa Abd El Fadeel Abd El Hamid¹, Hany Ezzat Obaya², Hassan Mostafa Gaafar, 2013, Effect of Acupressure on Labor Pain and Duration of Delivery among Laboring Women Attending Cairo University Hospital. ³.Indian Journal of Physiotherapy & Occupational Therapy, p. 7.
- [10] Elana Pearl Ben-Joseph, 2014, MD. Dealing With Pain During Childbirth. Kidshealth.. Online10 (11) http://m.kidshealth.org/en/parents/childbirth-pain.html?WT.ac=#kha_11.
- [11] Penny simkin, janet whalley, ann keppler, april bolding, 2017. Pregnancy, childbirth and newborn. America : meadowbrook press.
- [12] Jones, othman M, 2012, Pain management for women in labour: an overview of systematic reviews. NCBI. <https://www.ncbi.nlm.nih.gov/pubmed/22419342>
- [13] Leifer, Gloria. 2014, Maternity Nursing An Introductory Text. canada: loren wilson.
- [14] Marilyn J. By Shannon E. Perry, 2014, Maternal Child Nursing Care, 11 edition, elsevier, p. 1600.
- [15] Judith M. Schlaeger, Elizabeth M. Gabzdyl , Jeanie L. Bussell , 2016, Acupuncture and Acupressure in Labor. onlinelibrary.wiley, <http://onlinelibrary.wiley.com/doi/10.1111/jmwh.12545/abstract>
- [16] Reginaldo Roque Mafetoni, Antonieta Keiko Kakuda Shimo. 2016, The effects of acupressure on labor pains during child birth: randomized clinical trial, ncbi <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4990037/>
- [17] Mollart LJ, Adam J, Foureur M. 2015, Impact of acupressure on onset of labour and labour duration: A systematic review, ncbi <https://www.ncbi.nlm.nih.gov/pubmed/25911499>
- [18] Deitra Leonard Lowdermilk, Shannon E. Perry, Mary Catherine Cashion, Kathryn Rhodes Alden. 2014, Maternity and Women's Health Care - E-Book, 10th edition, Elsevier Health Sciences, p. 388. <https://www.elsevier.com/books/maternity-and-womens-health-care/lowdermilk/978-0-323-07429-2>
- [19] Hamlacı Y1, Yazici S. 2017, The Effect of Acupressure Applied to Point LI4 on Perceived Labor Pains, ncbi <https://www.ncbi.nlm.nih.gov/pubmed/28406870>.
- [20] Wilde, Anna. 2017 four magic point for childbirth. Thebirthwhisperer, Online11 (10), <http://www.thebirthwhisperer.com/wp-content/uploads/2015/07/4-magic-points-for-less-pain-and-easier-labour.pdf>.
- [21] Mollart, L., Adam, J. and Foureur, M. (2015). Impact of acupressure on onset of labour and labour duration: A systematic review. *Women and Birth*, [online] 28(3), pp.199-206. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/25911499>
- [22] Mafetoni, R. and Shimo, A. (2016). The effects of acupressure on labor pains during child birth: randomized clinical trial. *SciELO*, 24(1), 30 http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692016000100367
- [23] Makvandi, S., Mirzaiinajmabadi, K., Sadeghi, R., Mahdavian, M. and Karimi, L. (2016). Meta-analysis of the effect of acupressure on duration of labor and mode of delivery. *International Journal of Gynecology & Obstetrics*, [online] 135(1), pp.5-10. Available at: <http://onlinelibrary.wiley.com/doi/10.1016/j.ijgo.2016.04.017/abstract> [Accessed 2 Dec. 2017].
- [24] Torkzahrani, S., Mahmoudikohani, F., Saatchi, K., Sefidkar, R. and Banaei, M. (2017). *The effect of acupressure on the initiation of labor: A randomized controlled trial*. *Women and birth*, 30(1), 46-50 [http://www.womenandbirth.org/article/S1871-5192\(16\)30071-3/abstract](http://www.womenandbirth.org/article/S1871-5192(16)30071-3/abstract)
- [25] Mafetoni, R. and Shimo, A. (2015). Effects of acupressure on progress of labor and cesarean section rate: randomized clinical trial. *Revista de Saúde Pública*, [online] 49(0). Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4386552/> [Accessed 2 Dec. 2017].
- [26] Caroline A Smith, Carmel T Collins , Caroline A Crowther, Kate M Levett. Acupuncture or acupressure for pain management in labour. *pdq-evidence*. [Online] 2011. <https://www.pdq-evidence.org/documents/0a72a92edc64be30f348ea0c58a336d180803b/>.
- [27] Ms. M. Kanaga Durga 1 Dr. Latha Venkatesan, 2 Mrs. Lizy Sonia A.3, 2012, Effectiveness of Scalp Acupressure upon Labour Pain and Coping among Prim parturient Women, *Asian J. Nursing Edu. and Research*, 30(1), 42 <http://www.anvpublication.org/ajner.htm>
- [28] fahimeh sehhatie, rafat kazemaddeh, 2013, The Effect of Acupressure on Sanyinjiao and Hugo Points on Labor Pain in Nulliparous Women: A Randomized Clinical Trial, ncbi, 2(2), 123-129 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4161094/>
- [29] Yesilcicek Calik, K., & Komurcu, N. (2014). Effects of SP6 Acupuncture Point Stimulation on Labor Pain and Duration of Labor. *Iranian Red Crescent Medical Journal*, 16(10). <http://dx.doi.org/10.5812/ircmj.16461>