Comparison of the Effects of Maternal Supportive Care and Acupressure on Labor Length and Cervical Dilatation

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Abstract: *Supportive care, and acupressure are measures used during labor process to achieve better outcome, and provide the mother with a sense of confidence and control. The aim of this study was to compare the effects of maternal supportive care and acupressure on labor length and cervical dilatation. A quasi-experimental design was adopted in the delivery wards in the Suez Canal University and General hospitals. The study comprised a purposive sample of 126 parturient women that divided equally into supportive care, acupressure, and control groups. The tools of data collection were; a structured interviewing questionnaire, partograph. The results of the present study showed that there was a significant reduction in the mean length of the 1st stage of labor in study groups compared to control group.There were a statistically significant differences among the supportive care, acupressure, and control groups in relation to the mean differences of progress of cervical dilatation at 2, 4, 6 hrs. (P<0.001). It can be concluded that supportive care and acupressure during labor reduce the length of labor and improve cervical dilatation. The study recommended that providing a support person with a mother during labor to improve the outcome, and training all the maternity staff on supportive care measures and acupressure.*
Key words: *Supportive care, Acupressure, Labor length, Cervical dilatation*

I. Introduction

Birth experience is the physiological, psychological, and emotional changes that take place during pregnancy which help to prepare the woman for labor and birth. Normal labor is the process whereby painful, regular uterine contraction with progressive cervical dilatation and effacement accompanied by decent of the presenting part leads to spontaneous expulsion of a single, mature (37-42) completed weeks of pregnancy, alive fetus, through the natural passages, presenting by vertex, within a reasonable time, without fetal or maternal complications *(Pillitteri, 2014)*.

Prolonged labor results in anxiety, fear, and fatigue that lead to decrease the mother's self-esteem and confidence. Also, it increases the probability of prenatal mortality, utilization of oxytocin, instrumental and cesarean delivery, neonatal birth injuries, asphyxia and neonatal death *(Akbarzadeh et al., 2016)*.

Shortening the duration of labor is an essential aspect of obstetric care and a highly desirable objective of intrapartum care for maternal, fetal, and the birth service providers. Slow progress of labor is a common clinical situation in obstetric practice, a longer duration of labor is associated with reduction the chance of spontaneous vaginal delivery and increasing the risk ofserious maternal or perinatal complications *(Makvandi et al., 2016)*.

The nurse can use measures to reduce the length of labor such as; acupressure which decreases the duration of labor also, applying supportive care measures which reduce the mean length of first and second stage of labor *(Akbarzadeh et al., 2016; Chaillet et al., 2014)*.

Acupressure is a technique which activates specific energy points on the body. It based on the concept that there are numerous channels of energy throughout the body called meridians. These meridians may become either blocked or over-stimulated. Maternity acupressure is used mainly to induce and ease the effects of labor by applying pressure on these energy channels, the blood flow is stimulated the baby to descend into the pelvis and get into the normal position for delivery, thus it stimulates the dilatation of the cervix, initiation of contractions, and reduction of labor pain *(Abd El Hamid et al., 2018)*.

Moreover, labor support is a term used by intra-partum nurses to describe the supportive care provided to women during labor, which may be emotional support alone, or conceptualized as having various categories such as emotional support, physical comfort, informational, and advocacy. Emotional support can include nursing presence, effective caring attitude, distraction and partner care. Physical support and comfort measures enhance labor progress and increase satisfaction with the birth experience *(Safarzadeh et al., 2012)*.

Non-pharmacologic measures which include labor support and acupressure are based on the gate control theory of pain. These measures are usually safe, inexpensive, and woman should be encouraged to practice them in childbirth classes prior to real birth for best results in improving labor outcome*(Westbrook &D' Arcy, 2012)*.

Nurses play a key role in educating women and their support persons acupressure and supportive care measures to make sure that couples understand them according to their benefits and risks. Couples need support for their choices so that, they can feel confident in the method chosen. The nurse supports and assists the woman as she uses non-pharmacologic interventions for achieving better labor outcome *(Pillitteri, 2010)*.

Significance of the study

Prolonged labor is a common birth complication associated with increased maternal and fetal morbidity and mortality. It constitutes the major indication of instrumental deliveries and delivery by emergency caesarean section*(Hatfield & Kincheloe, 2018)*.

Egypt is a developing country with limited facilities and increasing growth of elective C.S according to maternal desire and without medical indication. Meanwhile, the use of pharmacological measures to improve labor outcome proved to have side effects on both mother and the fetus. Therefore, it is recommended to use effective and low-cost non-pharmacological method to improve labor progress *(Hodnett et al., 2013)*. Despite this evidences, huge paucity of data on the magnitude of this problem was present in Ismailia. Therefore, the study was conducted to compare between the effective uses of these methods to provide woman centered care during delivery.

Aim of the Study

This present study aimed to compare the effects of maternal supportive care and acupressure on labor length and cervical dilatation.

Research objectives:

1- Compare the effects of maternal supportive care versus acupressure (at BL32 acupoint) on labor length.
 2-Compare the effects of maternal supportive care versus acupressure (at BL32 acupoint) on cervical dilatation.

Research Hypotheses:

Parturient woman who will receive maternal supportive care or acupressure during their active phase of labor will exhibit shorter duration of labor and higher cervical dilatation than those who received routine intervention.

Subjects and Methods

Study Design

A quasi-experimental design was utilized in this study to compare between the effect of two intervention groups (supportive care, acupressure), and control group on labor length, and cervical dilatation.

Study Sample

 Purposive sampling technique was used in recruiting subjects in the three groups according to the inclusion and exclusion criteria. The investigator determined three days to collect data from intervention group from Suez Canal University Hospitals, and other three days to collect data from control group from the General Hospital.

Nulliparous women were selected based on inclusion criteria which were:age is ranged between 18 and 35 years; women who were free from medical, obstetric, and fetal complications, which would affect the labor progress;singleton and live fetus with vertex presentation; cervical dilatation from 3-4cm; gestational age between 37 and 42 weeks;the woman did not receive epidural analgesia. Exclusion criteriawere:woman who had induction of labor; those who had a cesarean delivery.

Sample Size

The sample size was calculated according to the following equation :

$$n = \frac{2(Z_{1-\alpha/2} + Z_{1-\beta})^2 SD^2}{d^2}$$

Considering, d=5, α=0.05, 1-β=0.90, SD=7 ,
n= 42 subjects per group.
the total number = 126 women *(Charan and Biswas, 2013)*.

Setting

Two settings were selected in this study; delivery wards at the Suez Canal UniversityHospital in which care provided forabout 1726 women annually for 40 Egyptian pounds.The General Hospital provided care for about 1516 women annually for 5 Egyptian pounds *(Statistical Department, 2017).*

Labor and delivery unit in Suez Canal University Hospitals consist of two parts for normal labor: one for the first stage of labor, which includes 3 beds, and the other part for delivery that includes 2 rooms for vaginal deliveries. In addition, 3 rooms; 2 for critical cases (one for pre-eclampsia and another for recovery after operation), and one for postpartum care. Care is provided by baccalaureate, diploma nurses, and nursing students.

Labor and delivery unit in the General Hospital consists of two parts: one for first stage of labor which includes 7 beds and the other part for delivery which includes 2 rooms for vaginal deliveries. Care is provided by diploma nurses and nursing students for laboring women.

Tools of Data Collection

Two tools were used achieve the study aims.

I- **Structured Interviewing questionnaire:**

Itwas developed by the investigator based on the review of relevant literature to collect data about the following:

Part 1: Socio-demographic data such as: age, occupation, educational level, social class.

Part 2: Obstetric history such as: number of pregnancies and abortion, gestational age.

II-Partogragh:

It is a chart on which the salient features of labor are entered in a visual graphic form to provide the opportunity for early identification of deviations from normal. The charts are usually designed to allow for recording at 15-miute intervals and include: fetal heart rate, maternal temperature, pulse and blood pressure, frequency and strength of contractions every 10 minutes, descent of the presenting part, cervical effacement and dilatation, color of amniotic fluid, degree of moulding, fluid balance, urine analysis, and drug administered.

Content validity

Tools were submitted to a panel of 5 experts; two experts in the field of Maternity, Obstetrics and Gynecology Nursing and three experts in the field of Obstetrics and Gynecology Medicine to test the content validity. Modifications werecarried out according to the panel judgment on clarity of sentences and appropriateness of content.

Ethical considerations

Oral approval was obtained from the nulliparous women. All of them were informed about the nature, process, and expected outcomes of the study. They were reassured that the study was safe, the information obtained was confidential and was used only for the purpose of the study and informed about their rights to withdraw at any time they wanted throughout the study.

Pilot study

Pilot study was carried out on 10 % of the sample (13 of nulliparous women) who were selected to assess the feasibility and clarity of the tools and determine the needed time to answer the questions. This sample was excluded from the study sample. The pilot study lasted for one month.

Procedures

Preparatory phase:

The investigator undertook a review of past and current available literature relevant to the study topics in order to acquire in-depth theoretical knowledge of the various aspects of the problem. This was done using textbooks, articles in scientific periodicals and magazines, and internet search. This helped in the selection of the pertinent and validated data collection tools.

In acupressure group: The investigator trained on how to apply acupressure on the (BL 32) acupoint under the supervision of physiotherapist at the Suez Canal University Hospitals in Ismailia and the document was obtained.

Permission: An official letter was issued from the Faculty of Nursing, Suez Canal University to the directors and heads of delivery wards of the Suez Canal University and the General Hospital in Ismailia city to obtain their permission to conduct the study.

After the preparatory phase had been finished, data was collected. Data collected through four phases: interviewing; assessment; implementation and evaluation phase.

1-Interviewing Phase: Nulliparous women who fulfilled the criteria for selection, and gave their verbal informed consent to participate were interviewed using the interview questionnaire. This was done individually and ensuring total privacy. The interview took from 5 to 10 minutes for each nulliparous women.

2-Assessment Phase: In this phase, immediately after admission to labor and delivery unit, the investigator together with the on- duty physician started regular assessment of the mothers in all groups and her fetus to obtain base line information about progress of labor and fetal condition and exclude any abnormal condition that deviate from normal pattern of labor and monitor progress of labor. They carried out general, local abdominal and pelvic examination. All nulliparous women in the three groups were examined. Examination included: general (vital signs, laboratory investigations), local abdominal (uterine contraction), fetal heart rate was assessed by C.T.G, and P.V examination (dilatation, effacement, descend, amniotic membrane status). All data were recorded in the partograph, labor progress was observed and recorded.

3-Implementation Phase: All women in the two study groups "supportive care group and acupressure group" received the theoretical and clinical training during their active stage of labor in the labor ward. Individual contact was essential to obtain the maximum benefit of the used method.

For the supportive care group: The investigator accompanied the mother from the beginning of her admission to the labor ward until the end of the second stage of labor and never left her alone. Supportive care activities were classified into: physical, emotional, informational support, and advocacy.

Physical support include:environmental control, changing woman position and encouraging ambulation during the first stage of labor, provide hygienic practice, bladder and bowel care, and hydration. **Informational Support include**: practicing the various type of breathing technique, encouraging spontaneous pushing, providing information about labor progress and procedures. **Emotional support include**: continuous presence, touching, reassurance, taking mother's hands, maintaining eye contact, creating a sense of trust and confidence, continuous talking, and reduction of fear during labor. **Advocacy include**: respect the mother, keep privacy, encouraging the woman or their partner to ask questions and verbalize their preferences, asking her about what they want, supporting her decision, Amplifying the mother's voice if she is being dismissed, or not heard.

For the acupressure group: it was comprised of 42 women upon whom acupressure was applied on the Ciliao point (BL32) by the investigator. Parturient woman was assisted by the investigator to assume comfort and proper position (sitting position) and the position of the investigator was behind the mother back to allow proper application of the procedure then the acupoint was determined.

This acupoint is located in the second hole of sacral bone, which lies approximately one index finger length above the top of the buttock crease and one thumb width either side of the spine. The pressure was continuously and gently applied by the right and the left thumbs from the beginning of uterine contraction to the end of it. The woman should take rest between contractions and then repeated pressure was done with each contraction through the 30 minutes. The pressure was applied for the first time when the cervix wa 3-4cm then repeated when the cervix was 7-8cm dilatation**.**

For the control group (n=42) was left to the routine care of the hospital which includematernal and fetal assessment, hydration, bladder care and reassurance. Maternal and neonatal condition was also noticed and recorded.

4-Evaluation Phase: The investigator will measure the length of active phase of the first stage of labor, and cervical dilatation through the partograph and the length of second stage of labor will be measured from the beginning of the stage to the end of it.

Statistical analysis: Collected data was arranged, and analyzed by using Statistical Package of Social Science (SPSS) program. Chi-square test ,one-way ANOVA and Post-hoc test were used to identify the groups with significant differences.

II. Results

The results of the present study are presented in the following sequence:

- Comparison between the Nulliparous Women in the Intervention and Control Groups regarding the Mean Duration of the 1st Stage of Labor.

-Comparison between the Nulliparous Women in the Intervention and Control Groups regarding the Mean Duration of the 2nd Stage of Labor.

- Comparison between the Nulliparous Women in the Intervention and Control Groups regarding the Mean Distribution of Cervical Dilatation at (2,4, 6) hrs.

- Comparison between the Nulliparous Women in the Intervention and Control Groups regarding the Mean Difference of Cervical Dilatation at (2,4, 6) hrs.

Table(1) shows that, the mean duration of the 1st stage of labor for the control group was high compared to acupressure and supportive care groups in which the mean duration were (387.07 ± 6.44, 306.4 ± 3.62, and 257.8 ± 3.24 minutes) respectively. The upper limit of the duration of the 1st stage of labor was (400.09) min for control group in which the lower limit was (251.31) min for the supportive care group. There were a statistical significant differences between the three groups regarding the mean duration of the 1st stage of labor.

As shown in table (2) shows that, there was a slight variation between the control, supportive care , and acupressure groups regarding the mean duration of the 2nd stage of labor. The upper limit of the duration of the 2nd stage of labor was (24.10) min for the control group inwhich the lower limit was (19.44) min for the supportive care group. There were no statistical significant differences between the three groups regarding the mean duration of the 2nd stage of labor.

In which table (3) shows that, the highest score of the mean distribution related to cervical dilatation at 2hrs was the supportive care group (6.79± .415), and the lowest score was the control group (5.66± .480). The mean distribution of cervical dilatation at 4hrs was high for the supportive care group (9.43± .668) compared to the acupressure, and control group. Moreover, the mean distribution of cervical dilatation at 6hrs in the supportive care , and acupressure groups was the same value (10.00± .000).

Table (4) reveals that, there were a statistically significant differences between the supportive care, acupressure, and control groups in relation with the mean differences of progress of cervical dilatation at 2 hrs.(.000*). At cervical dilatation 4 hrs. and 6 hrs., there were a statistically significant differences between the intervention and control groups regarding the mean differences of progress of cervical dilatation (.000*).

Table (1): Comparison between the Nulliparous Women in the Intervention and Control Groups regarding the Mean Duration of the 1st Stage of Labor.

Stage of labor	Parameters	Control (n=42)	Supportive care (n=42)	Acupressure (n=42)	F (anova)	P value
1st**Stage**	Duration (min) M±SD	387.07± 6.442	257.86±3.243	306.43±3.620	198.003	.000*
	Maximum	8hrs (480min)	5hrs (300 min)	6hrs (360 min)		
	First stage Minimum	5hrs (300min)	4hrs (240 min)	4.30hrs (270min)		
	Upper limit	400.09	264.41	313.74		
	Lower limit	374.05	251.31	299.12		

Table (2): Comparison between the Nulliparous Women in the Intervention and Control Groups regarding the Mean Duration of the 2nd Stage of Labor.

Table (3): Comparison between the Nulliparous Women in the Intervention and Control Groups regarding the Mean Distribution of Cervical Dilatation at (2,4, 6) hrs.

Stage of labor	Parameters	Control (n=42)	Supportive care (n=42)	Acupressure (n=42)	F (anova)	P value
2nd**Stage**	Duration (min) M±SD	22.56±4.889	20.60±3.696	21.43 ± 4.025	2.258	.109
	Maximum	35min	30min	30min		
	2nd stage Minimum	15min	15min	15min		
	Upper limit	24.10	21.75	22.68		
	Lower limit	21.02	19.44	20.17		

Dependent Variable	Study groups	Mean ± SD
CD at 2 hrs	Control	5.66± .480
	Supportive care	6.79± .415
	Acupressure	6.14± .354
CD at 4 hrs	Control	7.56± .634
	Supportive care	9.43± .668
	Acupressure	8.40± .497
CD at 6 hrs	Control	9.54± .636
	Supportive care	10.00± .000
	Acupressure	10.00± .000

Table (4): Comparison between the Nulliparous Women in the Intervention and Control Groups regarding the Mean Difference of Cervical Dilatation at (2,4, 6) hrs.

Dependent Variable	Study groups	Post hoc (Tukey HSD)		**ANOVA** Between Groups (F)	Sig.
		Study groups	Mean Difference (I-J)		
CD at 2 hrs	Control group	Supportive	-1.127-*	75.607	.000*
		acupressure	-.484-*		
	Supportive care group	Control	1.127*		
		Acupressure	.643*		
	Acupressure group	Control	.484*		
		Supportive	-.643-*		
CD at 4 hrs	Control group	Supportive	-1.868-*	99.582	.000*
		Acupressure	-.844-*		
	Supportive care group	Control	1.868*		
		Acupressure	1.024*		
	Acupressure group	Control	.844*		
		Supportive	-1.024-*		
CD at 6 hrs	Control group	Supportive	-.463-*	22.286	.000*
		Acupressure	-.463-*		
	Supportive care group	Control	.463*		
		Acupressure	.000		
	Acupressure group	Control	.463*		
		Supportive	.000		

III. Discussion

The present study was conducted to compare the effects of maternal supportive care and acupressure on labor length and cervical dilatation.The hypothesis was "Parturient woman who will receive maternal supportive care or acupressure during their active phase of labor will exhibit shorter duration of labor and higher cervical dilatation than those who received routine intervention".

In the current study, the mean length of 1st stage of labor was 257.86 ± 3.24 minutes for supportive care group, 306.43 ± 3.62 minutes for acupressure group, and 387.07 ± 6.44 minutes for control group with statistically significant differences among three groups. These results agreed with a study conducted by *Akbarzadeh et al., (2016)* who "investigate the effects of maternal supportive care and acupressure (at BL32 acupoint) on labor length and infant's Apgar score". They found that, the mean length of the first stage of labor was 157.0 ± 29.5 minutes in the supportive care group, 161.7 ± 37.3 minutes in the acupressure group, and 281.0 ± 79.8 minutes in the control group. The difference between the length of labor stages was significant in the three study groups (P<0.001).

This is in line with research conducted by *Tigga & Thapa (2016)*, who examined "the effectiveness of acupressure on duration of the first stage of labor". Their results showed that, the length of labor in the treatment

group were less than the control group. Also, ***Shahshahan et al., (2014)*** who studied "the effect of the presence of a support person and routine intervention on women during childbirth". They concluded that, the presence of a support person during labour decrease length of labour and improves labour outcomes.

Another study conducted by ***Patty et al.,(2017)*** agreed with our results when they examined "the effect of acupressure on the duration of the first stage of labor in primigravida". Results showed that, the duration of the first stage of labor in the experiment group was 187 minutes and in the control group was 307 minutes. There was a statistically significant difference of the duration of the first stage of labor between both groups.

In addition, the study of ***Mafetoni & Shimo (2015)*** which carried out to "evaluate the effects of acupressure on progress of labor and caesarean section rate". The average labor duration was significantly different between the acupressure group [221.5 min] versus placebo [397.9 min] and versus control [381.9 min].

On the contrary, the study of ***Khresheh, (2010)*** showed that, there were no statistically significant differences in duration of labour between women who had support during labour and those who received no help (control group). Furthermore, the study of ***Shields et al., (1999)*** showed that, labor duration in clients who were aware of obstetrical cares and knew midwives and had been cared by them showed no significant difference from the clinical outcomes of women who received routine .

In the current study, the mean length of 2nd stage of labor was 20.60 ± 3.70 minutes for supportive care group, 21.43 ± 4.025 minutes for acupressure group, and 22.56 ± 4.89 minutes for control group. There was no statistical significant difference between three groups. These results supported by the study of ***Safarzadeh et al., (2012)*** who conducted a study to investigate " Effect Of Doula Support On Labour Pain And Outcomes In Primiparous Women In Zahedan, Southeastern Iran". They revealed that, there was no significance difference between supportive care and control groups in the duration of the second stage of labour.

Moreover, the study of ***Heydari et al , (2008)*** in which the duration of the second stage was not significantly different in the two groups (P=0.521). Also, the results of the study supported by ***Rowley et al., (1995)*** who showed that the length of the second stage of labor in clients received continuous presence of companions showed no significant statistical difference with that of the clients received routine care.

On the contrary, the study of ***Sehhati, Najjarzadeh et al., (2011)*** who conducted a study to examine "the effect of continuous midwifery care on length of labor". Experimental group were provided support by one midwife since the beginning of active phase of labor (continuing care) whereas in the control group, cares were provided by several midwives and (without their continuous presence). In the experimental group, the lengths of the second stages was shorter (per minute) than those of control group .

Moreover, the study of ***Mehri et al., (2019)*** who conducted a study of "Effects of Acupressure on Labor Length and Outcome in Nulliparous Women: A Clinical Trial." They revealed that, there was no significant difference in the mean duration of the first and second stages of labor in the two groups (P<0.05).

Also the study of, ***Bruggemann & McGrath, (2008)*** revealed no significant difference between the intervention (presence of doula) and the control group regarding the mean length of labor. The difference between the results of these studies and the present one might be due to the factthat they were conducted on the individuals from high social levels and the study participants could take their family members to the delivery room either with or without the doula. Therefore, both groups were highly supported and the effect of presence of doula could not be truly investigated.

Moreover, the study of ***Ghonemy et al.,(2017)***who conducted a study to evaluate the effect of continuous supportprovided by nurses during labor on the duration of the active phaseof labor. The results of their study revealed that, the study group show rapid cervical dilatation progress than the control group. Significant differences was found in a cervical condition among both groups .

IV. Conclusion
Based on the results, the study concluded that:
Supportive care and acupressure are non-pharmacological methods which significantly reducing labor length, enhancing the cervical dilatation progress for the nulliparous women. In consideration that, the effect of supportive care measures were higher than acupressure.

In the light of the findings of the current study the researcher recommends:
1-Changing maternity hospitals policy to allow a supportive care person to accompany with the parturient woman (husband, friend, family member) from the beginning of labor to the end of it.
2- Providing a training program for health care practitioners (midwives; nursing staff.; and student nurses) to be able to apply supportive care measures and acupressure correctly.
3- Supportive care during labor, and acupressure should be added to undergraduate curriculum as an important new topics, further researches are recommended for evaluating other points of acupressure in achieving better labor outcome.

4- Preparation of pamphlets and booklets about supportive care measures for parturient women that contains figures and instructions, be attractive, and in a simple language that are easy to be understood in a labor ward.

References

[1].   Abd El Hamid, N. A., Obaya, H. E., Gaafar, H.M. (2012). IOSR Journal of Nursing and Health Science. Volume 1, Issue 1 PP 08-14. www.iosrjournals.org.
[2].   *Akbarzadeh, M., Masoudi, Z., Zare, N., & Kasraeian, M. (2016)*. Comparison of   the Effects of Maternal Supportive Care and Acupressure (at BL32 Acupoint) on Labor Length and Infant's Apgar Score. Global journal of health science, 8(3), 236.
[3].   *Chaillet, N., Belaid, L., Crochetiere, C., Roy, L., Gagne, G.P.,& Moutquin, J.M, et al.(2014).* Nonpharmacologic approaches for pain management during labor compared with usual care: a meta-analysis. 41(2): 122-37.
[4].   *Hatfield, N. T., Kincheloe, C. A. (2018)*. Introductory Maternity & Pediatric Nursing. 4th(ed.). Wolters Kluwer.
[5].   *Heydari, P. Mozhdeh, F. Masloum, S. R., Tanbakouei, K.&, Joudaki, K.(2008).* Effect of SP6 acupressure on length of labor. Iranian Journal of Obstetrics and Gynecology. 2008;11(2):15-22.
[6].   *Hodnett, E. D., Gates, S., Hofmeyr, G., & Sakala, C. (2013).* Continuous support for women during childbirth. The Cochrane database of systematic Reviews, 2013, 7, CD003766.
[7].   *Ghonemy, G. E., Abd El Moneim, E. F., &Abdelsalam, Z. A.(2017).*Effect of Hospital-Based Providers Continuous Support onProgress of Active Phase of Labor. SOJ Nursing Health Care 3(1):1-6.

[8].   *Mafetoni, R. R., Shimo, A. K. (2016).* The effects of acupressure on labor pains during child birth: randomized clinical trial 1, Rev Lat Am Enfermagem. 24: e2738.
[9].   *Makvandi, S., Mirzaiinajmabadi, K.H, 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 and Obstetrics.http://dx.doi.org/10.1016/j.iijgo.2016.04.017.
[10].   *McGrath, S. K., Kennell, J. H. (2008)*. A randomized controlled trial of continuous labor support for middle-class couples: effect on cesarean delivery rates;35(2):92-7.
[11].   *Mehri, Z. Moafi, F. Mafi, M. Habibi, M. & Ranjkesh, F. (2019)*. Effects of Acupressure on Labor Length and Outcome in Nulliparous Women: A Clinical Trial. The Journal of Qazvin University of Medical Sciences. 2019; 23(2):116-127. https://doi.org/10.32598/JQUMS.23.2.116
[12].   *Patty, F. I. T., Suhartono, Ngadiyono,& Mardiyono. (2017).* Effect of acupressure therapy point LI 4, SP 6, and BL 60 on duration of the first stage of labor in primigravida and newborn's Apgar score. Belitung Nursing Journal ;3(6):697-701.
[13].   *Pillitteri, A. (2010)*. Maternal & child health nursing: Care of the childbearing& childrearing family. 6th ed. Wolters Kluwer/ Lippincott Williams& Wilkins.
[14].   *Pillitteri, A. (2014).* Maternal & child health nursing: Care of the childbearing& childbearing family. 7th (ed.). Wolters Kluwer Health/ Lippincott Williams & Wilkins.
[15].   *Rowley, M. J., Hensley, M. J., Brinsmead, M. W., & Wlodarczyk, J. H. (1995).* Continuity of care by a midwife team versus routine care during pregnancy and birth: a randomised trial;163(6):289–93.
[16].   *Safarzadeh, A. Beigi, M. Salehian, T. Khojasteh, F.& Burayri, T.T. (2012)*. Effect of Doula Support on Labour Pain and Outcomes in Primiparous Women in Zahedan, Southeastern Iran: A Randomized Controlled Trial. J Pain Relief 1:112 doi: 10.4172/2167-0846.1000112.
[17].   *Sehhati, F. Najjarzadeh, M. Seyyedrasouli, A. & Zamanzadeh, V. (2012).* Effect of Continuous Midwifery Care on Length of Labor. doi: 10.5681/jcs.2012.007.
[18].   *Shahshahan, Z. Mehrabian, F. Mashoori , S.(2014).* Effect of the presence of support person and routine intervention for women during childbirth in Isfahan, Iran: A randomized controlled trial 155- p.
[19].   *Tigga, R., & Thapa, R. (2016).* Effectiveness of acupressure on level of pain and duration of labor among primigravida mothers during first stage of labor. Indian Journal of Applied Research, 6(6), 131-133.
[20].   **Westbrook, G. T., & D' Arcy, y. (2012).**Pain management basics. Nursing spectrum. Retrieved fromhttp://ce.nurse.com/ce648/pain-management.