



*Int. J. New. Chem., Special 2022. (Winter)*

## International Journal of New Chemistry

Published online 2022 in <http://www.ijnc.ir/>  
Open Access



Print ISSN: 2645-7237

Online ISSN: 2383-188x

### Original Research Article

## The Effect of Maternal Position During the First Stage of Labor-on-Labor Pain Intensity During Cesarean Section

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*Received: 2022-03-01*

*Accepted: 2022-05-20*

*Published: 2022-05-20*

### ABSTRACT

**Introduction:** Due to the contradictory results of research on the effect of maternal posture on labor pain intensity, which was mentioned in a corner, the present study was conducted to evaluate the effect of maternal posture during labor-on-labor pain intensity. **Material and Methods:** A total of 56 women undergoing elective cesarean section were studied in this study; All women in the labor phase were placed in different positions for thirty minutes and their severity of rejection was assessed based on the type of position. **Results:** comparing the pain intensity in all sitting and lying positions of group B (starting with lying position) showed that the mean pain intensity in sitting position was  $11.43 \pm 4.04$  and in lying position was  $12.78 \pm 3.32$  which based on the results Wilcoxon test, the mean pain intensity in these two conditions was statistically significant ( $P=0.007$  and  $Z=-2.691$ ). The mean pain intensity in all sitting and lying positions was  $12.39 \pm 3.90$  and  $12.69 \pm 50$ , respectively, and the comparison of the two postures did not show a statistically significant difference ( $P=0.574$  and  $Z=-0.562$ ). **Conclusion:** In general, according to the results of this study, it can be said that the severity of pain in mothers is the same in both sitting and sleeping positions; Therefore, it is recommended that the determination of the mother's condition be left to the mother herself if there is no medical prohibition.

**Keywords:** Maternal Position, First Stage of Labor, Pain, Cesarean Section

## Introduction

Labor pain is one of the most severe pains reported in humans; It has been compared to the pain caused by amputation of fingers. These very severe pains cause adverse effects on the mother and fetus [1]; These include decreased uterine-placental blood flow, impaired fetal heart sound, bleeding, low Apgar score of the infant, delayed gastrointestinal emptying and increased risk of pulmonary aspiration in the mother, contraction of the pelvic floor muscles, and impaired labor progression; For this reason, the relief of labor pains has been one of the most important topics in midwifery science for a long time [2-4]. Methods of relieving labor pain can be divided into three main groups including pharmacological, psychological and physiological methods [5-7]. Maternal posture change during labor is one of the physiological methods to reduce labor pain. Some research has shown that upright postures are easier for mothers; In others, lying on their backs is more likely to be reported by mothers; According to some researchers, not only is uterine function better in women who are standing than in women who are asleep, but mothers also experience less pain in this condition [8-10]. It has also been reported that mothers in a sitting position have shorter delivery times and less pain than in a lying position [11-13]. The results of a study conducted in eleven hospitals in seven countries also showed that mothers who were in an upright position during labor were shorter in length and less in pain than others, but other researchers, in a study entitled "Moving the mother during childbirth" showed that if the mother walks, the benefits such as shortening the delivery time and reducing labor pains will be less. Pain relief methods and their effectiveness have always been controversial [14-16]. Due to the contradictory results of research on the effect of maternal posture on labor pain intensity, which was mentioned in a corner, the present study was conducted to evaluate the effect of maternal posture during labor-on-labor pain intensity.

## Material and Methods

In this quasi-experimental study, 56 pregnant women who were candidates for elective cesarean section referred to Al-Zahra Hospital (Tabriz University of Medical Sciences) were studied. The study units were first-time pregnant women aged 35-36 years who had full-term pregnancies, singletons and healthy fetal membranes. These women did not have a history of any medical, surgical, or psychological problems and did not have any particular problems during pregnancy.

The contractions of the research units started spontaneously and at the time of admission, the contractions were repeated every 5-10 minutes and the dilation of the cervix was 2-5 cm. These people were randomly divided into two groups "A" and "B". During the research stages, cases such as the use of oxytocin, fetal distress and abnormal delivery were excluded from the study. The instruments used in this study included the interview form (including demographic information, pregnancy history, family status, pregnancy information, etc.), observation form (including pain intensity assessment information, uterine contractions, fetal heart rate and stage progress evaluation). First, delivery and infant characteristics), the Spielberger Manifest Anxiety Scale (consisting of 20 phrases and scores between 20-76, which are divided into six categories), and the Visual Pain Scale (10 cm vertical line, numbered from zero to 10). Zero meant "completely painless" and 10 meant "maximum pain intensity"). Content validity method was used to determine the validity of both interview and observation forms. The reliability of these forms was also confirmed using the correlation method between researchers with  $r = 97\%$ . Visual Pain Scale is also a standard and approved tool. Using this form in acute pain gives more accurate results than other pain measurement methods such as the McGill scale. In the data collection stage, first the Spielberger Anxiety Scale was completed for the research units and the pain intensity was measured based on the VAS scale; The research units were then monitored for two hours. During this period, mothers in group "A" in four 30-minute periods in sitting-lying-back-sitting-lying-back positions and mothers in group "B" in four 30-minute periods in lying-back positions, respectively. They were sitting - lying on their backs - sitting. At the end of every 30 minutes, the severity of labor pain in the research units was assessed based on VAS; During this period, uterine contractions, cervical dilation, and fetal head descent were monitored and recorded once before posture and then at the end of the first hour and the end of the second hour. After delivery, information about the characteristics of delivery and the baby according to the mother's file was recorded in the observation form. The collected data were analyzed using Chi-Square, Mann-Whitney, Wilcoxon and one-way analysis of variance at the significant level of  $P 0.05$ . This study was carried out with the approval of the ethics committee of Tabriz University of Medical Sciences and obtaining informed consent from all participants.

## Results

The results of the present study in the study of demographic characteristics of research units such as age, education, mother's occupation and spouse's education showed that the two groups did not have a statistically significant difference in terms of these variables. The mean age in the research units was  $27.39 \pm 11.08$  years and 47.5% of them had a diploma or higher and 59.3% of them were housewives. There was no statistically significant difference between the two groups in terms of maternal weight, maternal height, infant weight and neonatal Apgar score. The mean weight and height of mothers were  $69 \pm 9.8$  kg and  $153.87 \pm 11.42$  cm and the mean weight of newborns was  $3150 \pm 37.3$  g, respectively. There was no significant difference between the two groups in terms of other intervening factors such as history of painful menstruation, back pain during pregnancy, duration of walking during pregnancy, family stability status and religious beliefs. Examination of the level of overt anxiety of the research units at the time of admission showed that 67.3% of the subjects had moderate anxiety; Anxiety levels of 22.4% were mild and only 10.2% were very anxious; Based on test results. After controlling all the intervening factors, in the study of specific objectives, the results of Mann-Whitney test showed that the mean pain intensity before determining the condition in the two groups was not statistically significant ( $Z = -22.21$ ,  $U = 391.50$ ,  $825 / p=0.09$ ). Other results of Mann-Whitney test in the mean pain intensity at the end of the first hour showed that the two groups did not have a statistically significant difference ( $Z = -1.178$ ,  $U = 355.00$ ,  $P = 0.239$ ). Also, according to the results of Mann-Whitney test, the difference between the mean pain intensity based on VAS at the end of the second hour was not significant between the two groups ( $Z = -1.273$  and  $U = 355.50$ ,  $P = 0.203$ ). Comparison of pain intensity in all sitting and lying positions in group A (starting with sitting position) showed that the mean pain intensity in sitting position was  $13.57 \pm 3.54$  and in supine position was  $12.59 \pm 77$  which based on the results Wilcoxon test, the mean pain intensity in these two conditions, showed a statistically significant difference ( $P = 0.038$ ,  $Z = -2.071$ ). Also, comparing the pain intensity in all sitting and lying positions of group B (starting with lying position) showed that the mean pain intensity in sitting position was  $11.43 \pm 4.04$  and in lying position was  $12.78 \pm 3.32$  which based on the results Wilcoxon test, the mean pain intensity in these two conditions was statistically significant ( $P = 0.007$  and  $Z = -2.691$ ). The mean pain intensity in all

sitting and lying positions was  $12.39 \pm 3.90$  and  $12.69 \pm 50$ , respectively, and the comparison of the two postures did not show a statistically significant difference ( $P = 0.574$  and  $Z = -0.562$ )

## Discussion

The main finding of the present study was that the mean severity of labor pain in all sitting positions and total sleeping positions in all research units was not statistically significant [17]. This finding means that according to this, the position of the mother during labor does not affect the severity of labor pain [18-20]. Regarding the effect of maternal status during labor-on-labor pain, some researchers have reached similar conclusions; Among them, McManus and Calder reported that there was no statistically significant relationship between upright postures in the mother and the use of analgesics [21-23]. Williams also did not report a significant relationship between analgesic use and maternal status during labor [24]. Calvert et al. Reported that the pain intensity was more severe in the group of women who walked during childbirth than in the sleeping group, and the highest level of pain was associated with primiparous women in the mobile group; It is also reported that only 41% of people chose the upright position during childbirth and among primiparous women, only one third of the people tended to walk. Goharnejad also reported in a similar study that the mother's condition has no effect on the severity of labor pain and the pain intensity of the first stage of labor is the same in both upright and supine positions [25-27]. In this study, in both groups, the mean pain intensity in upright and supine positions was statistically significant; The mean pain intensity was higher in the supine position in the supine position and in the supine position in the supine position [28-30]. Due to the fact that with the progress of labor, the severity of pain also increases, due to the intermittent shifting of postures, this significant difference can be considered as a result of the progression of labor and not a change in postures [31-33]. In this regard, it has been reported that the progress of labor is significantly associated with increasing pain intensity, Goharnejad achieved similar results in his research [34-36].

## Conclusion

In general, according to the results of this study, it can be said that the severity of pain in mothers is the same in both sitting and sleeping positions; Therefore, it is recommended that the

determination of the mother's condition be left to the mother herself if there is no medical prohibition; Because in each person, depending on his particular position, being in an upright or lying position can be the most comfortable position and the mother should not be forced to walk or lie in bed against her will; Rather, mothers can achieve a comfortable state in which they feel more comfortable by changing their position early or late in the first stage of labor. In this regard, it has been said that the role of the midwife in helping the mother to adopt a proper posture during labor is very decisive and the midwife's advice in this regard is very important; Therefore, midwives should help the mother to choose a suitable and comfortable position according to the mother's wishes.

## References

1. K. Solo, S. Lavi, C. Kabali, G. N. Levine, A. Kulik, A. A. John-Baptiste, S. E. Femes, J. Martin, J. W. Eikelboom, M. Ruel, *bmj.*, 367 (2019)
2. K. Hashemzadeh, M. Dehdilani, M. K. Gol, *Int J Womens Health Reprod Sci.*, 9:69 (2021)
3. K. Solo, S. Lavi, C. Kabali, G. N. Levine, A. Kulik, A. A. John-Baptiste, S. E. Femes, J. Martin, J. W. Eikelboom, M. Ruel, *bmj.*, 367 (2019)
4. K. Hashemzadeh, M. Dehdilani, M. K. Gol, *Int J Womens Health Reprod Sci.*, 9:69 (2021)
5. W.-Q. Ma, Y. Wang, X.-J. Sun, X.-Q. Han, Y. Zhu, R. Yang, N.-F. Liu, *Coronary artery disease.*, 30:367 (2019)
6. M. Dehdilani, M. K. Gol, K. Hashemzadeh, *Crescent Journal of Medical and Biological Sciences.*, 6:350 (2019)
7. M. Jannati, M. R. Navaei, L. G. Ronizi, *Journal of Family Medicine and Primary Care.*, 8:2768 (2019)
8. J. A. Mawhinney, C. A. Mounsey, D. P. Taggart, *European Journal of Cardio-Thoracic Surgery.*, 53:1127 (2018)
9. K. Hashemzadeh, M. Dehdilani, M. K. Gol, *International Journal of Women's Health and Reproduction Sciences.*, 8:406 (2020)

10. M. Correa-Rodríguez, M. Abu Ejheisheh, N. Suleiman-Martos, M. J. Membrive-Jiménez, A. Velando-Soriano, J. Schmidt-RioValle, J. L. Gómez-Urquiza, *Journal of clinical medicine.*, 9: 909 (2020)
11. N. A. Smart, G. Dieberg, N. King, *Journal of the American College of Cardiology.*, 71: 983 (2018)
12. C. Spadaccio, U. Benedetto, *Annals of cardiothoracic surgery.*, 7:506 (2018)
13. T. M. Kieser, D. P. Taggart, *Journal of Cardiac Surgery.*, 33: 219 (2018)
14. K. Hashemzadeh, M. Dehdilani, M. K. Gol, *Crescent Journal of Medical and Biological Sciences.*, 5: 517 (2019)
15. K. Mirzaei, A. Fathi, SM. Asadinejad, NCZ. Moghadam, *Academic Journal of Health Sciences: Medicina balear.*, 37(3):58 (2022)
16. M. Abolhasani, E. Ghasemi, AH. Fathi, MJ. Hayatizadeh, *Journal of Iranian Dental Association.*, 33(3):51 (2021)
17. M. Momeni-Moghaddam, C. Hashemi, A. Fathi, F. Khamesipour, Beni-Suef University *Journal of Basic and Applied Sciences.*, 11(1):1 (2022)
18. M. Abolhasani, P. Givchian, A. Fathi, S. Goudarzi, *Journal of Iranian Dental Association.*, 33(1):17 (2021)
19. A. Fathi, B. Ebadian, SN. Dezaki, N. Mardasi, R. Mosharraf, et al., *International Journal of Dentistry.*, 1:1 (2022)
20. R. Mosharraf, A. Fathi, SS. Botshekan, *International Journal of Dentistry.*, 2:1 (2022)
21. R. Mosharraf, P. Molaei, A. Fathi, S. Isler, *International Journal of Dentistry.*, 12:5977994 (2021)
22. R. Monirifard, M. Abolhasani, B. Tahani, A. Fathi, A. Choobdaran, *Journal of Iranian Dental Association.*, 31:182 (2019)
23. M. Maalekipour, M. Safari, M. Barekatin, A. Fathi, *International Journal of Dentistry.*, 5:1 (2021)
24. E. Ghasemi, AH. Fathi, S. Parvizini, *Journal of Iranian Dental Association.*, 31(3):169 (2019)
25. A. Fathi, A. Salehi, *Academic Journal of Health Sciences: Medicina balear.*, 37(1):29 (2022)

26. N. Khamisi, A. Fathi, A. Yari, Academic Journal of Health Sciences: Medicina balear., 37: 136 (2022)
27. W.-Q. Ma, Y. Wang, X.-J. Sun, X.-Q. Han, Y. Zhu, R. Yang, N.-F. Liu, Coronary artery disease., 30:367(2019)
28. M. Dehdilani, M. K. Gol, K. Hashemzadeh, Crescent Journal of Medical and Biological Sciences., 6:350(2019)
29. M. Jannati, M. R. Navaei, L. G. Ronizi, Journal of Family Medicine and Primary Care., 8:2768(2019)
30. J. A. Mawhinney, C. A. Mounsey, D. P. Taggart, European Journal of Cardio-Thoracic Surgery., 53:1127(2018)
31. K. Hashemzadeh, M. Dehdilani, M. K. Gol, International Journal of Women's Health and Reproduction Sciences., 8:406(2020)
32. M. Correa-Rodríguez, M. Abu Ejheisheh, N. Suleiman-Martos, M. J. Membrive-Jiménez, A. Velando-Soriano, J. Schmidt-RioValle, J. L. Gómez-Urquiza, Journal of clinical medicine., 9: 909(2020)
33. N. A. Smart, G. Dieberg, N. King, Journal of the American College of Cardiology., 71: 983(2018)
34. C. Spadaccio, U. Benedetto, Annals of cardiothoracic surgery ., 7:506(2018)
35. T. M. Kieser, D. P. Taggart, Journal of Cardiac Surgery., 33: 219-(2018)
36. K. Hashemzadeh, M. Dehdilani, M. K. Gol, Crescent Journal of Medical and Biological Sciences., 5: 517(2019)

#### How to Cite This Article

Reyhaneh Abri, Mansour Rezaei, **“The effect of maternal position during the first stage of labor-on-labor pain intensity during cesarean section”** International Journal of New Chemistry., 2022; DOI: 10.22034/ijnc.2022.5.14.