

Effectiveness of Semi Sitting Position during 2nd Stage of Labour on Maternal and Neonatal Outcomes among Primigravida

Santhi MD¹, Anuratha MD¹, Kokilavani²

Abstract

This post-test experimental study was conducted among 50 primigravida mothers - 25 each in experimental and control groups in a maternity centre of Coimbatore (TN) with a view to assess the effect of semi-sitting position during second stage of labour on maternal and neonatal outcomes. It was found that semi sitting position is beneficial in enhancing thrust and directing the uterine contraction force on fetus that lead to fewer late decelerations and increased APGAR score.

The labour and birth process is an exciting, painful and anxiety-provoking situation for a woman. In a relatively short period, particularly in second stage of labour they experience one of the most profound changes in their lives. Studies have shown that maternal position in the second stage of labour is also significant because descent of the foetal head and maternal bearing down efforts are enhanced when positioning in upright. Jong et al. concluded from his study that women who adopted the upright posture for delivery, experienced less pain, perineal trauma and fewer episiotomies than those who delivered in the supine position.

Maternal body positions have a significant influence on the course of labour, affecting maternal comfort and physiology. The ability to move and adopt positions during labour has been shown to help facilitate labour progress and decrease pain (Ragner et al, 2006; Declercq et al, 2006).

Women should be encouraged to take up whatever position they find most comfortable during labour. The benefits of upright posture include a shorter second stage of labour, a small reduction in assisted deliveries, and a decreased episiotomy rate but an increased risk of severe blood loss.

Research also indicates that an upright position does not appear to be associated with increased intervention or negative effects on the well-being of mothers and babies (Mayberry et al, 2003;

Gupta et al, 2006). Birth position is influenced by many factors and the research investigating women's perceptions of comfortable positioning, and the extent to which women are influenced in relation to birth position are important contributions to the knowledge on the topic.

Objectives

The study attempted :

- i) To determine the effectiveness of semi sitting position on maternal and neonatal outcomes during second stage of labour in experimental group, and
- ii) To compare the maternal and neonatal outcomes during second stage of labour among primigravida mothers between the experimental and control group.

Hypothesis

There is significant difference between the maternal and neonatal outcomes during 2nd stage of labour among primigravida mothers between the experimental and control group.

Theoretical framework

Theoretical framework selected for this study was based on General System theory by Bertalanffy (1968). In this theory, focus is on the discrete part and their inter relationship which make up and describe the whole. Input is assessment of Frequency and Severity of uterine contraction, duration of 2nd stage of Labour, Visual Analogue Scale for Pain Assessment, Child Birth Comfort Questionnaire, APGAR Score of Newborn and Semi Sit-

The authors are 1. Associate Professors PSG College of Nursing, Coimbatore (TN); 2. Principal, Adhiparasakthi College of Nursing, Melmaruvathur.

ting Position and its techniques. Throughput is application of semi sitting position for experimental group and routine (supine) position for control group mothers. The Output is post-assessment of experimental and control group mothers.

Review of literature

The semi-recumbent or supported sitting position, with the thighs abducted, was the posture most favourable and women experienced less discomfort and backache, less difficulty in bearing down, fewer abdominal births and less perineal or vaginal trauma and vulval edema. The only apparent disadvantage of upright position was an increased risk of blood loss. But it is not clear whether this risk extends to all upright positions. More women who gave birth in upright positions expressed a positive response about the position (Barbara & Soong, 2005).

In a study on effect of maternal position on reduction in labour pain intensity (Adachi et al, 2003) pain intensity was measured with Visual Analogue pain Scale on 39 primiparous and 19 multiparous women who alternatively assumed the sitting and supine position for 15 minutes during cervical dilatation of 6 cm to 8 cm. The study concluded that the sitting position is more effective to relieve lower back pain during cervical dilatation from 6 cm to 8 cm than the supine position.

In an experimental study was conducted in the labour ward of Andra Mahila Sabha, Chennai, among 60 primigravidae to find the effectiveness of semi-sitting position during the second stage of labour on maternal and neonatal outcomes among primigravidae, the maternal outcome was assessed in terms of frequency and duration of uterine contractions at 10 minutes interval for 30 minutes and duration of second and third stage of labour. APGAR score at 1 and 5 minutes was assessed to determine the neonatal outcome.

It was revealed that the subjects in the experimental group experienced good uterine contractions, shorter duration of second and third stage of labour, good APGAR score and less discomfort that the women in the control group (Kannaki et al, 2009).

Another study conducted in Sydney over 12 years (January 1996 to April 2008) to assess the relationship between maternal birth position and maternal and neonatal outcomes in a birth centre attended by low risk women having normal vaginal births showed that women giving birth in a semi-recumbent position had the highest incidence of

decreased perineal trauma, APGAR scores above 7 at five minutes (Hannah Dahlen, 2008).

Methodology

The study had true experimental – post-test only design with 50 primigravida mothers (25 each in experimental and control groups. Experimental Group were in semi sitting position (post-test) and Control Group in routine (supine) position (post-test). It was concluded in Seethalakshmi Maternity Centre, Coimbatore (TN). Primigravida mothers were admitted for delivery and purposive sampling technique was employed.

Inclusion criteria

Primigravida mothers, mothers admitted for normal delivery and women without high risk pregnancy were included.

For data collection, assessment of frequency and duration of uterine contractions was made in women of 2nd stage of labour. Visual analogue scale was used for pain assessment while discomfort level was assessed by Modified Child Birth Comfort Questionnaire (Appendix). APGAR scores of newborn were recorded.

Data Collection Procedure

- ❑ Mothers were identified and selected from complete cervical dilatation (10 cm) after each vaginal examination.
- ❑ Semi sitting position was maintained by propped up the head end of labour table to 45° when the experimental group mothers begin to 2nd stage of labour and routine (supine) position was maintained for the control group mothers.
- ❑ Frequency, duration and severity of the each contraction were assessed for both experimental and control group mothers.
- ❑ Pain and discomfort were assessed by using Visual Analogue Pain Scale and Modified Child Birth Comfort Questionnaire.
- ❑ Duration of the 2nd stage was assessed immediately after delivery of the baby.
- ❑ APGAR score of the Newborn was assessed in 1 minute and 5 minutes after the delivery.

Split-half methods were used to find the reliability of the tool.

The plan for data analysis included Descriptive Statistics (Percentage, Mean and Standard Deviation), and Inferential Statistics (Independent 't' test).

Results

Mean of frequency and duration of uterine contractions in control group (M= 2.37 times, 57.24 seconds) was lower than the experimental group (M= 5.33, 78.12). There was a significant difference ('t' value = 6.9 & 7.8) at $p < 0.05$ levels, which can be attributed to the effect of semi sitting position (Fig 1, Fig 2).

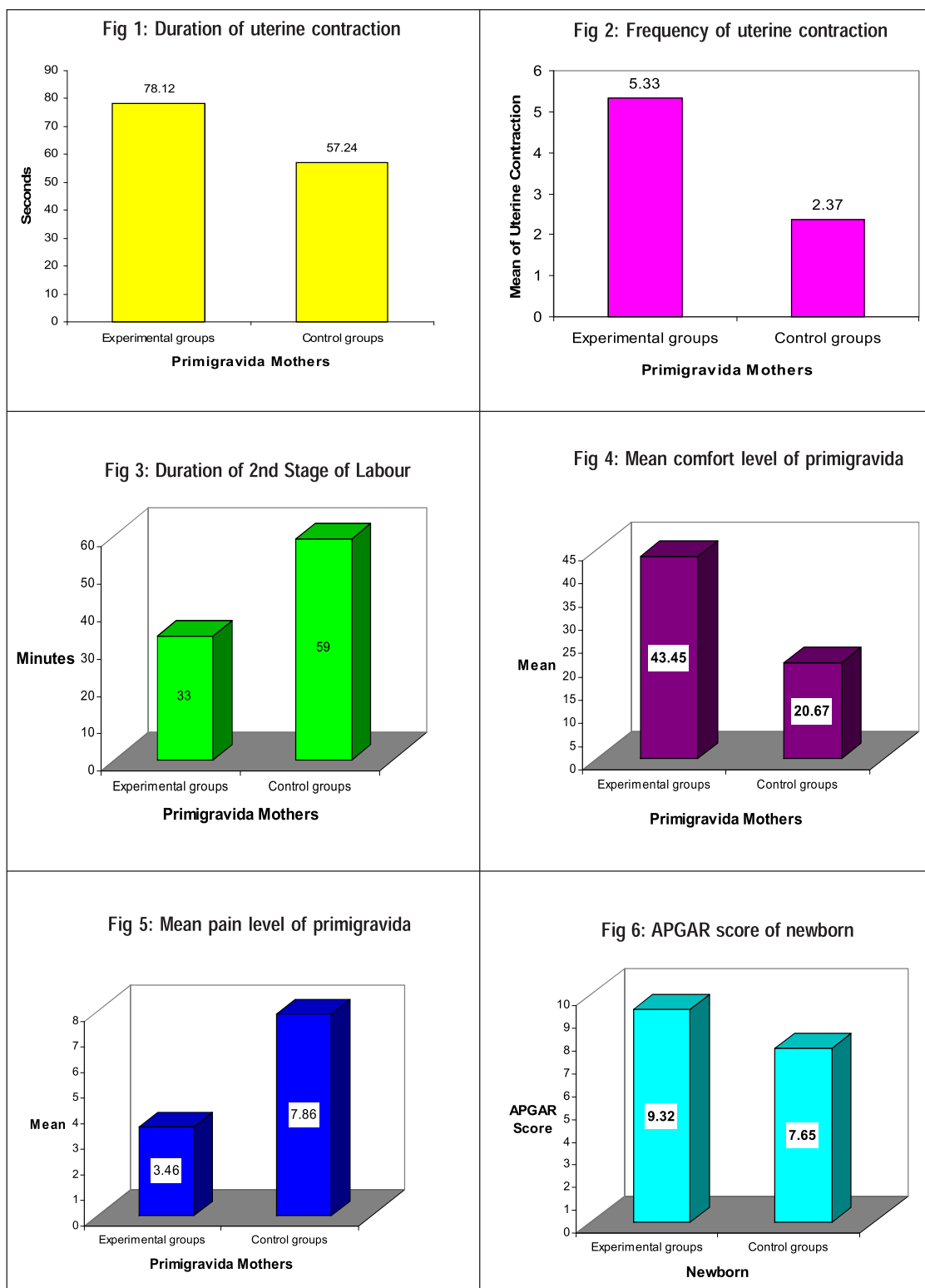
Duration of II stage of labour in control group was longer (M = 59 min) than the experimental group (M = 33 min) (Fig 3, Fig 4). The difference was found statistically significant ('t' value = 9.6) at $p < 0.05$ levels, it shows the effect of semi sitting position.

Mean value of comfort level (assessed by modified child birth comfort questionnaire) in control group (M=20.67, SD + 6.57) was lower than in the experimental group (M = 43.45, SD + 3.13). The difference was found statistically significant ('t' value = 6.3) at $p < 0.05$ levels, it depicts that the effect of semi sitting position.

Mean value of pain level in (assessed by visual analogue scale) control group (M=7.86, SD + 1.48) was higher than the experimental group (M=3.4, SD + 0.48) (Fig. 5). The difference was

found statistically significant ('t' value = 5.9) at $p < 0.05$ level, can be attributed to the effect of semi sitting position.

Mean value of APGAR score of newborn in control group was lower (M=7.65) than the experimental group (M=9.32) (Fig 6). The difference was found statistically significant ('t' value = 6.7 & 5.4) at $p < 0.05$ level, can be attributed to



the effect of semi sitting position.

Discussion

Comparison of experimental and control group was done through independent 't' test. It was found that there was a significant difference between experimental and comparison group. The significant difference was shown in frequency of uterine contraction ($t' = 6.9$), duration of uterine contraction ($t' = 7.8$), duration of second stage of labour ($t' = 9.6$), comfort level ($t' = 6.3$), level of pain ($t' = 5.9$), APGAR score at 1 minute ($t' = 6.7$) and APGAR Score at 5 minutes ($t' = 5.4$) at 0.05 level. It was evident that semi-sitting position can help the primi mothers for the better labour outcome. It is also supported by many research studies (Hannah Dahlen, 2008; Kannaki et al, 2009; Iqbal & Sumaira, 2009).

Implications

The study implies that since mothers are not having adequate practice on semi sitting position during second stage of labour. The nurse educator should educate the peripheral level health-workers and also labour mothers to improve their knowledge and motivate their practice of semi sitting position during second stage of labour as recommended.

Recommendations

Similar study can be undertaken with a large sample and longer duration to generalise the findings. A comparative study can be conducted for mothers in hospital settings and maternity centres.

Conclusion

It is concluded that placing woman in semi sitting position during second stage of labour is a simple, easy to implement. The labour duration is shorter and it is more comfortable to tackle pain among parturient mothers.

Semi-sitting position gives advantage of maximising thrust and direction of uterine contraction force on foetus so as to enhance passage through the pelvic canal resulting in fewer late decelerations and increased APGAR score.

References

1. Barbara Margaret, Barnes Soong. A Systematic review of randomized controlled trials of maternal position during second stage of labour. *Birth* 2008; 32(3): 164-69
2. Bloom et al. Positions in the Second stage of labour for women. *Birth* 2006; 12(3): 79-85.
3. De Jong A, Lagru Janssen. Supine position compared to other

APPENDIX

Childbirth Comfort Questionnaire

I am going to ask you to rate how you feel about 15 statements. Please rate each statement from 1 to 5 with "1" meaning you 'strongly disagree' and "5" meaning you 'strongly agree' at this moment.

- | | |
|---|---------------------------|
| 1. I have enough privacy | 1 ... 2 ... 3 ... 4 ... 5 |
| 2. My pain is difficult to endure | 1 ... 2 ... 3 ... 4 ... 5 |
| 3. I feel empowered by those around me | 1 ... 2 ... 3 ... 4 ... 5 |
| 4. I don't think I can do this without the help of others | 1 ... 2 ... 3 ... 4 ... 5 |
| 5. I am working well with my body | 1 ... 2 ... 3 ... 4 ... 5 |
| 6. This bed makes me hurt | 1 ... 2 ... 3 ... 4 ... 5 |
| 7. I can rise above my pain because it helps me birth my baby | 1 ... 2 ... 3 ... 4 ... 5 |
| 8. I feel confident I can birth my baby | 1 ... 2 ... 3 ... 4 ... 5 |
| 9. This room makes me feel weak and helpless | 1 ... 2 ... 3 ... 4 ... 5 |
| 10. The pain of the contractions motivates me to be strong | 1 ... 2 ... 3 ... 4 ... 5 |
| 11. This is a safe place to be | 1 ... 2 ... 3 ... 4 ... 5 |
| 12. I feel like giving up | 1 ... 2 ... 3 ... 4 ... 5 |
| 13. This position is more comfort to me to bear down | 1 ... 2 ... 3 ... 4 ... 5 |
| 14. I worry I will lose control | 1 ... 2 ... 3 ... 4 ... 5 |
| 15. I need to feel better informed about my progress | 1 ... 2 ... 3 ... 4 ... 5 |

positions during the second stage of labour: A meta-analytic review. *Journal of Psychosomatic Obstetrics and Gynaecology*, 2004; 25(1): 35-45

4. Kannaki R, Venkatesan Latha, Jamuna N. Effectiveness of semi-sitting position during second stage of labour on maternal and neonatal outcomes among primigravidae. *Indian Journal of Continuing Nursing Education* 2009; 10(2): 41-43
5. Kristen Gough. Upright posture and the efficiency of labour. *Journal of Obstetrics and Gynaecology*, 2006; 32(1): 103-107
6. Ulla Waldenstrom. A randomized trial of birth stool or conventional semi-recumbent position for second stage of labour. *Birth*, 2009; 18(1): 5-10