

Efficacy of Ergonomics Ankle Support on Squatting Pushing Skills during the Second Stage of Labor

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Abstract : Objective: To compare the pushing experiences and birth outcomes of three different pushing positions during the second stage of labor. The three positions were: semi-recumbent, squatting, and squatting with the aid of ergonomically designed ankle supports. Methods: A randomized controlled trial was conducted at a regional teaching hospital in northern Taiwan. Data were collected from 168 primiparous women in their 38th to 42nd gestational week. None of the participants received epidural analgesia during labor and all were free of pregnancy and labor-related complications. Intervention: During labor, after full cervical dilation and when the fetal head had descended to at least the +1 station and had turned to the occiput anterior position, the experimental group was asked to push in the squatting position while wearing the ergonomically designed ankle supports; comparison group A was asked to push in the squatting position without the use of these supports; and comparison group B was asked to push in a standard semi-recumbent position. Measures: The participants completed a demographic and obstetrics datasheet, the Short Form McGill Pain Questionnaire (MPQ-SF), and the Labor Pushing Experience scale within 4-hours postpartum. Conclusion: In terms of delivery time, the duration between the start of pushing to crowning for the experimental group (squatting with ankle supports) averaged 25.52 minutes less ($F = 6.02, p < .05$) than the time for comparison group B (semi-recumbent). Furthermore, the duration between the start of pushing to infant birth averaged 25.21 minutes less for the experimental group than for comparison group B ($F = 6.14, p < .05$). Moreover, the experimental group had a lower average VAS pain score (5.05 ± 3.22) than comparison group B and the average McGill pain score for the experimental group was lower than both comparison groups ($F = 18.12, p < .001$). In summary, the participants in the group that delivered from a squatting position with ankle supports had better labor pushing experiences than their peers in the comparison groups. Results: In comparison to both unsupported squatting and semi-recumbent pushing, squatting with the aid of ergonomically designed ankle supports reduced pushing times, ameliorated labor pain, and improved the pushing experience. Clinical application and suggestion: The squatting with ankle-support intervention introduced in the present study may significantly reduce tiredness and difficulties in maintaining balance as well as increase pushing efficiency. Thus, this intervention may reduce the caring needs of women during the second stage of labor. This intervention may be introduced in midwifery education programs and in clinical practice as a method to improve the care of women during the second stage of labor.

Keywords : second stage of labor, pushing, squatting with ankle supports, squatting

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