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**A Comparative study to determine The effectiveness of
Antepartum breathing exercises on outcome of labor between
Primigravid and Multigravid Women in selected hospital Of Udupi
District, Karnataka**

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ABSTRACT

Background

Pregnancy is a special feeling and special time for the mother-to-be, and every woman experiences pregnancy differently with a mixture of stressful and joyful moments that come along with it. Natural birth, a birth with minimum interventions is the ultimate solution of pregnancy from the psychophysical and social point of view. Promoting healthy life style in mothers is acknowledged as one of the main actions of midwives.

Childbirth preparation is gaining significant importance and encompass an important constituent of antenatal care. Practicing breathing techniques becomes an automatic response during labor. A woman who is more relaxed will respond positively. Breathing techniques determine the wellbeing status and become a measure of control. Hence pregnant women should be provided with information, and variety of resources so that a choice is made and practised to ensure healthy pregnancy and child birth. Breathing exercises do not require sophisticated gadgets and machinery but require timely information, education and willingness to practise by the expectant women. Therefore, looking at the added benefits, safety and cost effectiveness of the intervention, and researcher's interest to bring about a stereotype shift from restrictive birthing environment to relaxing birthing experience, the study aimed at finding the effectiveness of one simple non-pharmacological method, i.e. antepartum breathing exercises on outcome of labor among primigravid and multigravida women.

Method

A randomized controlled trial on the effectiveness on antepartum breathing exercises on the outcome of labor between primigravid and multigravida women in the intervention and the standard care group was carried out in Udupi District by Sushmitha R Karkada for the Degree of Doctor of Philosophy at Manipal University, Manipal, Karnataka. The objectives of the study were to (i) determine the effectiveness of antepartum breathing exercises on maternal outcome and neonatal outcome (ii) compare the effectiveness of antepartum breathing exercises on the outcome of labor between primigravid and multigravid women.

The conceptual framework for the study was grounded on Ernestine Wiedenbach's "The Helping Art of Clinical Nursing" theory, where the primary goal is to help the women to meet and satisfy her needs during pregnancy and labor.

A parallel group prospective randomized controlled trial using stratified block randomization technique was employed, where the antenatal women were stratified based on the parity as primigravid and multigravid women.

The data collection tools used in the study were a structured observational record on the outcome of labor ($r = 1$), observation checklist on the performance of antepartum breathing exercises ($r = .89$). A video on antepartum Breathing Exercises was developed. The validity and reliability of the tools were established before administering.

The accessible sample for the present study consisted of low risk antenatal primigravid and multigravida women above 36 weeks of gestation registered in the antenatal clinic. To achieve the power of 80%, and level of significance of 95%, considering the outcome variable as continuous, and minimum detectable differences

between two groups as one hour. The required sample for the study after sample size estimation was 520 women.

Results

The analysis related to the sample characteristics revealed that the primigravid and multigravida women in the intervention and standard care groups were homogenous in their baseline characteristics at the time of recruitment to the study. The present study was carried out to determine the effectiveness of antepartum breathing exercises on maternal and neonatal outcome of labor. The results of the effect of the intervention revealed positive change in the intervention group in terms of maternal outcome. The significant findings of the present study is that 98 (70%) primigravid and 107 (83%) multigravid women in the intervention group had spontaneous onset of labor. The primigravid women had 2.192 time more odds of having spontaneous onset of labor after intervention 95% CIs [1.313-3.36], $p=.001$, however no statistical significant difference was found in the multigravida group OR 1.604, 95% CIs [0.868-2.960], $p=.78$. Sixty seven (48%) primigravid women and 85 (66%) multigravida women in the intervention group had spontaneous vaginal delivery, primigravid women requiring augmentation of labor were 45 (33%) in the intervention group as compared to 46 (37%) in the standard care group, whereas multigravida women in the intervention group whose labor was augmented for various reasons were 38 (29%) and 62 (50%) in the standard care group. Overall primigravid women $\chi^2_{df(2)} (n=261) = 58.72, p<.001$ and multigravida women $\chi^2_{df(2)} (n=254) = 40.2, p<.001$ in the intervention group had spontaneous vaginal delivery, the requirement for augmentation of labor was minimal and reduction in the rate of caesarean deliveries. The rate of caesarean deliveries in the present study irrespective of the parity was 11.9% (intervention group) and 32.6% (standard care group). The mean duration of labor in the intervention group of primigravid women was 5.5127 ± 1.998 hours and that of multigravid women were 3.3704 ± 1.584 hours where as in standard care group it was 7.238 ± 3.678 hours and 4.2899 ± 2.182 hours ($F= 133.800, p<.001$). The study found no statistical significant difference in the neonatal outcomes. Univariate and multiple logistic regression done found that spontaneous onset of labor OR 1.93, 95% CIs [1.302-2.862], $p=.001$ and full term gestation (39-40 weeks at the time of delivery) OR 1.368, 95% CIs [1.905-2.069], $p=.013$ were the predictive factors for spontaneous vaginal delivery among women after adjusting for parity.

Conclusion

The current research carried out concludes that breathing exercise when taught and practiced during the antenatal period facilitates normal labor by shortening the duration of labor and decreases the need for operative interferences in the intervention group. Deep breathing and relaxation techniques practiced during labor and bearing down at the right time aids in the progress of labor. The occurrence of caput succedaneum can be avoided by early bearing down which is aided by deep breathing and relaxation techniques.

Keywords: Antepartum breathing exercise, pregnancy, outcome of labor, maternal outcome, neonatal outcomes

