

Influence of Pre-Pregnancy Weight, Maternal Height and Weight Gain During Pregnancy on Birth Weight

Phaneendra Rao RS, MBBS, MD*

Prakash KP, MBBS**

Sreekumaran Nair N, MSc, PhD***

Objective: To study the effect of pre-pregnancy weight, maternal height and weight gain during pregnancy on birth weight.

Design: A community based longitudinal study.

Setting: The study was conducted in the rural field practice area of the Department of Community Medicine, Kasturba Medical College, Manipal, Karnataka State, India.

Study Period: Between 1st June 1996 to 31st January 1998.

Subjects: A total of 75 pregnancies were followed up till delivery.

Main outcome and measures: Pre-pregnancy weight, maternal height, weight gain during pregnancy and other baseline characteristics were collected using a pre-tested proforma. Weight of the baby was recorded immediately after birth.

Results: The mean pre-pregnancy weight and maternal height were 43.7 kg (SD=6.6) and 154.2 cm (SD=5.2) respectively. The mean weight gain during pregnancy was found to be 8.0 kg (SD=2.6). The mean birth weight was 2869.7 gm (SD=467.2) with a range of 1380-3800gm. A statistically significant correlation was observed between pre-pregnancy weight ($r = 0.4, p < 0.001$), maternal height ($r = 0.36, p = 0.001$), weight gain during pregnancy ($r = 0.52, p < 0.001$) and birth weight.

Interpretation and conclusion: Multiple regression analysis revealed that pre-pregnancy weight, maternal height and weight gain during pregnancy were independently associated with birth weight.