

**THE RELATIONSHIP BETWEEN  
MATERNAL ANTHROPOMETRIC, SOCIAL,  
BEHAVIORAL AND OBSTETRIC FACTORS,  
AND NEWBORN BIRTH WEIGHT**

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**Doctor of Philosophy (PH)**

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**2014**

## ABSTRACT

A cross-sectional study was conducted in urban and peri-urban areas of the Magway during 2013-14 to estimate the proportion of low birth weight (LBW) and macrosomic babies, to determine the optimal cut-off points of maternal height, mid upper arm circumference, pre-pregnancy weight, pre-pregnancy body mass index (BMI) and gestational weight gain in order to assess normal newborn birth weight, to investigate correlation between maternal anthropometric parameters and newborn birth weight, and to explore relationship between maternal anthropometric, social, behavioural and obstetric factors, and newborn birth weight.

The subjects included 250 pregnant women who had their first visit to antenatal care less than 14 weeks of gestation and their babies. The anthropometric measurements were taken at first visit and newborn birth weight was measured within 24 hours after birth. Pearson correlation, Receiver operating characteristic (ROC) analysis, Chi-square test and multivariate logistic regression were used in this study.

The proportions of LBW and macrosomic babies were 5.6% (95%CI:3%-8%) and 1.2% (95%CI:0%-2.6%), respectively. Mean birth weight  $\pm$  standard deviation (SD) is 2905.2  $\pm$  390.156g. Gestational age, mode of delivery and requirement of resuscitation were significantly associated with newborn birth weight. Means  $\pm$  SD of maternal height, pre-pregnancy weight, pre-pregnancy BMI, Mid upper arm circumference (MUAC) and gestational weight gain were 154.78  $\pm$  7.88cm, 50.42  $\pm$  7.72kg, 21.11  $\pm$  3.24kg/m<sup>2</sup>, 24.99  $\pm$  1.96cm and 8.23  $\pm$  1.12kg, respectively. All the maternal anthropometric indicators and gestational weight gain were significantly correlated with newborn birth weight. Significant cut-off point for gestational weight gain and pre-pregnancy BMI to detect LBW were 7.8 kg and 20.1kg/m<sup>2</sup>, respectively.

In multivariate analysis, maternal height (OR=0.8223, 95% CI: 0.7044-0.9599), pre-pregnancy MUAC (OR=0.1550, 95%CI: 0.0472-0.5085) and history of exposure to environmental tobacco smoke (OR=13.2730, 95%CI: 1.3748-128.1406) were significantly related with newborn birth weight.