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Association between Maternal Health Status and Birth Weight of Children among Young Mothers in India using Missing Case Analysis

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In low income countries like India, birth weight is often not reported by mothers or family members due to not knowing or not noting down the weight at the time of birth. Thus, there are a good number of birth weight cases missing from large scale demographic surveys like the National Family Health Survey. In the National Family Health Survey, Round III, 2005-06, around 59% cases of birth weight of children are missing due to not knowing or not noting down the weight at the time of birth. Therefore, it poses several limitations for researches conducted on birth weight of children using NFHS dataset. One such major limitation is the biasness of the results due to the unavailability of cases. The present study aims to address the issues of missing data in the birth weight variable in NFHS, Round III, using a simple regression imputation method. Imputation is a method to fill in missing data with plausible values to produce a complete data set. In the present paper, regression imputation is chosen for replacing the missing cases, as it is a very simple method and efficiently deals with the missing cases. Also, the study attempts to examine the relationship between birth weight and maternal health status and health-seeking behavior, along with other socio-economic correlates. This is done by first imputing the missing cases of the birth weight variable, and then examining its relationship with various socio-economic and demographic factors. It compares the likelihood of low and high birth weight babies against the normal birth weight with the same set of independent variables using the multinomial logistic regression. The results of imputation imply that any analysis done with the birth weight variable which has only 40 per cent cases available, ignoring the missing values would yield biased results. It would render more emphasis on the religion, sex of child and BMI of mothers as the significant determinants. However, after imputation, the pattern of significance changes and more important socio-economic and cultural determinants gain importance. It also suggests that imputing missing cases for a variable gives the model a better fit. Looking at the results of multinomial logit model, one can infer from this study that healthcare utilization during pregnancy is not the sole determinant of a healthy pregnancy outcome. The health status and lifestyle of mothers in their prime reproductive years is of immense importance in determining the birth weight of a child.

Key words: *National Family Health Survey, birth weight, missing cases, imputation, maternal health status, maternal health-seeking behavior.*

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