



Association of Maternal Age, Pregnancy Order and Seasonal Variations in Low Birth Weight (LBW) in West Bengal, India

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ABSTRACT Birth weight of newborns is a common proxy measure of intrauterine growth, which is influenced by nutrition, environment, socio-economic status and lifestyle factors during the gestation period. The objectives of the present investigation were to understand the influences of maternal age, pregnancy order and seasonal variation in newborn low birth weight (LBW). Data of 13,423 newborn birth weight during the period from July 2007 to June 2010 were recorded from the Siliguri District Hospital of Darjeeling, West Bengal India. The information collected comprised of birth weight, type of pregnancy, maternal age, pregnancy order, month (season) of delivery and residential addresses. The overall mean (\pm SD) and prevalence of LBW were 2.71 ± 0.41 kg and 19.19 percent ($n=2576$), respectively. The binary logistic regression analysis showed higher odds values ($p < 0.01$) of LBW with mother's age < 20 years (Odds: 1.416) and 1st pregnancy order (Odds: 1.636). However, births during spring season exhibited lower odds of LBW (Odds: 0.798) ($p < 0.01$). The maternal age ≤ 20 years and $\leq 1^{\text{st}}$ pregnancy order was associated with LBW ($p < 0.05$). The ROC-AUC analysis showed that pregnancy order (AUC=0.553) was better surrogate associate measure than maternal age (AUC=0.544) for determination of LBW ($p < 0.05$). Early detection in newborns can attain appropriate weight gain and this can be achieved through regular checkup effective implementation of ongoing intervention programmes and appropriate healthcare facilities to prevent intrauterine growth retardation.