ABSTRACT

Birth weight has been associated with health outcomes in immediate and later life. A cross-sectional study was conducted among 1205 children aged 2 to 4 years belonging to low socioeconomic areas in Mumbai city. The aim was to study the relationship between birth weight, current nutritional status and body fat of the children and examine if birth weight and current nutritional status influenced selected cognitive functions in a sub-sample of children. Weight, height, MUAC, head circumference, skinfold thicknesses and waist circumference were measured. Information regarding the family background, child’s morbidity and feeding history was obtained. Birth weight was obtained from the records. BMI, body fat, waist-to-height ratio (WHtR), ratio of subscapular to triceps skinfold and change in weight SD were calculated. For cognitive assessment, a sub-sample of children aged 3 to 4 years (122) were selected in four groups - normal birth weight non-stunted (NBWNS), normal birth weight stunted (NBWS), low birth weight stunted (LBWS) and low birth weight non-stunted (LBWNS). The measures of cognitive functions assessed included – intelligence, planning ability, memory and concept formation.

In all, 20.5% children had low birth weight (LBW). According to WHO Growth Standards (2006), 36.1% children were underweight, 35.2% were stunted and 16.7% were wasted. Birth weight was positively associated with all the anthropometric indices and body fat (%) but was not associated with the central adiposity measures. LBW children with catch-up growth had a tendency to conserve body fat especially abdominal fat. Normal birth weight (NBW) children who exhibited catch-down growth preserved central body fat. Lower HAZ was associated with higher body fat. In terms of cognitive functions, the NBWS and LBWS performed poorly than NBWNS and LBWNS, though differences were non-significant. The NBWS and LBWS had lower income and lesser number of them attended formal schools. These factors might have influenced their cognitive functions.