Chapter 14

SUMMARY AND CONCLUSION
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The nutritional status of children of any community provides valuable information about the growth and development of that community. Nutritional status of Santal children has not been measured in recent time. In the present study, an attempt has been made to assess the nutritional status of 5-12 years Santal children of Purulia district of West Bengal, and its association with the development of cognitive and motor functions. Nutritional anthropometric parameters, dietary intake of food and some biochemical parameters have been measured to evaluate the nutritional status. In addition, Raven’s Colored Progressive Matrices and Bruininks-Oseretsky Test of Motor Proficiency-Second Edition-Short Form (BOT-2) are used to measure the cognitive and motor development, respectively.

Present study indicates that a poor nutritional status exists in the surveyed children as measured by growth curve analyses as well as by z-score analyses. The growth pattern of Santal children as assessed from growth curve analyses shows that undernutrition prevails in these children. A high prevalence of undernutrition is also observed from z-score analyses of different anthropometric parameters in Santal children. In addition, growth curves of upper arm fat area-for-age and upper arm muscle area by height are found to be good indicators for measuring the nutritional status in Santal children. Upper arm muscle area and upper arm fat area may not be similarly affected in undernourished children of every community. A comprehensive approach to identify the truly undernourished child from height-for-age, weight-for-height and upper arm muscle area by height has been suggested from this study. However, the cause of poor nutritional status in Santal children is evident from dietary intake measurement indicating the insufficient consumption of food and nutrients in surveyed children. The results show that deficiency in dietary intake is a major cause of undernutrition in Santal children and this inadequacy of nutrients intake is rightly reflected on the biochemical and hematological estimations. The lower
socio-economic status of Santal children may be one of the causes for their poor nutritional status.

The literacy rate in Santal population is low (12.5%). The nutritional status is associated with the development of cognitive functions. It is observed from the present study that the surveyed Santal children show poor cognitive performance in all age groups. The age-related improvement is observed in cognitive development of Santal children but the level of improvement is too low in both sexes. The poor cognitive development in Santal children is evident from the location of their age related growth curve of Raven’s Colored Progressive Matrices scores around the 5th percentile values of the reference. The poor nutritional and socioeconomic status of Santal children may be responsible for their poor cognitive development.

In Santal, more than 84% are unskilled workers. The nutritional status is an important determinant for the development of motor functions. The results of this study indicate that the surveyed Santal children have relatively poor motor performance in all the age groups as the BOT-2 growth curve of the children remains below the 3rd percentile of reference BOT-2 data. More than 82% of Santal children have total BOT-2 scores in the ‘well-below average’ (below -2 z-score) category. The findings establish that both undernutrition and poor socioeconomic status are closely associated with the impairment of the motor development. The present study is the first of its kind to characterize the motor development of Santal children and provides an additional support for the important role of nutritional and socioeconomic status on children’s motor development. This study suggests that a nutritional intervention for undernourished children could help to improve motor development.

Therefore, the present study indicates that a large number of Santal children of the surveyed region of Purulia district suffer from undernutrition. The poor nutritional status of these children
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is due to the lower intake of food and nutrients. Though, the dietary intake has been improved in surveyed children compared to that of the past study carried out three decades ago, the consumption of foods and nutrients in Santal children is still found to be inadequate compared to RDA. The nutritional and socioeconomic statuses of these Santal children are associated with the impairment of their cognitive and motor development. To prevent the undernutrition in this large number of children, some intervention programme is required in addition to the mid-day meal programme. Nutritional awareness programme can also be effective to combat such undernutrition. Policy makers may think about the modified mid-day meal programme in the schools of surveyed regions.