CHAPTER - VI

LIMITATIONS AND IMPLICATIONS OF THE STUDY
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The present study investigated the late effects of malnutrition on cognitive and reading abilities of Class II and Class V Oriya medium primary school children, belonging to the age groups of 7-9 years and 10-12 years, respectively. In this study only two groups of children - the malnourished and wellnourished - were taken from similar social and familial backgrounds, and in most cases, from the same neighbourhood, for comparison. The study would have become more informative if it could have taken into account the siblings of the malnourished children who were between 7 to 12 years of age and their controls for a comparison among four groups - malnourished and its control, siblings of the malnourished and its control - regarding their cognitive and reading abilities. Future studies may be conducted to make a comparison of these dependent variables among the four groups.

In the present study the malnourished children were traced from the admission records as in-patients of the pediatric ward (malnutrition ward) at Cuttack Hospitals. The following entries for these children were found in the admission records: sex, chronological age, urban or rural residence, income, number of children in the family, place of the child in the family, father’s education, mother’s education, child’s education, types of malnutrition (that is, kwashiorkor or marasmus), results of investigations, duration of stay in hospital, and age and weight of the child at admission. A question may be raised as to the reliability of data from admission records. Although it is impossible to be
absolutely certain of the reliability of the entries, we would believe that the continuation of the same pediatrician in the supervisory role of the ward may substantially contribute to their reliability.

When the child was brought in for cognitive tests, the investigator sometime recorded head and chest circumferences, and the child’s weight and height. However, these records were not completed for all cases. An assessment of the current status of the child at the time of the cognitive tests would also be desirable. But unfortunately, medical indices for the index or the control children were not obtained. Further studies may take these points into account.

Malnutrition goes with the socially disadvantaged families. Since India, a developing country, a large number of children are neither advantaged nor disadvantaged (i.e., neither wellnourished nor malnourished), the study would have become more informative if it could have taken into account those second and fifth grade children who belong to the middle section of the society (i.e., undernourished) for a comparison among three socio-economic-cultural groups (i.e., malnourished, undernourished, and wellnourished children) regarding their cognitive and reading abilities. Further studies may be conducted to make a comparison of these dependent variables among these three socio-economic-cultural groups or nourished groups.

Social disadvantage in Western countries predominates in lower socio-economic class who are less privileged through the lack of stimulating environment and of verbal communication with adults. However, in a country like India, where
culture is vast and varied, economic criterion alone has been found inadequate to define social disadvantage or malnutrition. It has been observed that in Indian set up conditions of social disadvantage are created by economic and family educational background factors, which consistently go with caste group affiliation factor and place of residence factor. These factors are also the determinants of malnutrition. In the present study both wellnourished and malnourished Grade II and V Oriya medium primary school children were taken from the urban setting. The study under report would have become more informative if it could have taken into account the rural second grade and fifth grade Oriya medium primary school children for a comparison between urban and rural wellnourished and malnourished children with regard to their cognitive and reading abilities. Future studies may be conducted to find out the late effects of malnutrition on the cognitive and reading abilities of both urban and rural primary school children.

Some researchers have reported that schooling affects the cognitive abilities and reading abilities of children. It would have been nice if the preschool children were taken as the subjects in the present study in order to avoid the effects of schooling on the dependent measures studied. However, owing to the nature of the tests of the cognitive abilities and reading abilities, the wellnourished and malnourished preschool children were not taken as the subjects. However, the second grade and fifth grade wellnourished and malnourished children, though sent for formal schooling, are in its initial stage which might have not affected their cognitive and reading abilities. Thus, the schooling effect, if any, was minimised. Moreover, from each grade both experimental (malnourished) and control (wellnourished) groups were taken for comparison.
In the present study, a few components of cognitive abilities (i.e., measures of nonverbal intelligence, measures of short-term and long-term memory, measures of working memory, and measures of nonverbal creative thinking) were under observation. Other components of cognitive abilities such as measures of perceptual abilities, attention, verbal intelligence, problem solving, verbal creative thinking, passage comprehension, reasoning, etc., were not studied. Future research should, therefore, be planned to investigate in the present line of research by taking more number of components of cognitive abilities and reading abilities.

The primary objective of the present study was to find out the late effects of malnutrition in early life on the cognitive and reading abilities of children. In other words, the study under report, was designed to observe whether the adverse effects of early malnutrition on the child’s cognitive and reading abilities would dissipate with increase in age, and as such, the present study took children only from two grades (i.e., Grades II and V) as the subjects. Therefore, further studies should be undertaken in the present line of investigation by taking children from more number of grades as the subjects.

In spite of the above mentioned limitations, the findings of the present study have some, even serious implications. The results of the present study revealed that in all the measures of cognitive abilities and reading abilities the malnourished children were found to be inferior to their wellnourished counterparts. However, with increase in age/ grade, the adverse effects of early malnutrition gradually dissipated.
In the present study, all children were extremely disadvantaged - the experimental (i.e., malnourished) and the control (i.e., wellnourished). The results of the study point to the importance of early education of disadvantaged children. Our research suggests that in spite of the depressed condition which is associated with undernutrition/ malnutrition, the child’s intellectual performance improves with school attendance. Education of the child is an important determinant of the child’s performance on the cognitive tasks and reading tasks. School attendance facilitates the development of thinking through the use of language. Thus, any rehabilitation programme for the previously marasmic or kwashiorkor child as well as his/her chronically undernourished counterpart should provide for the stimulation of language and thought in addition to giving food supplements. A well-designed prospective study should incorporate programme for language use for the preschooler and bonuses to the family for sending the older child to school.