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A COMPARATIVE STUDY OF THE NUTRITIONAL STATUS OF PRIMARY SCHOOL
CHILDREN IN MAHAWELI SYSTEM "B" AND
PARAKRAMA SAMUDRAYA
POLONNARUWA

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by

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A thesis submitted in partial fulfillment of the requirements for the
degree of Master of Philosophy in the University of Peradeniya

1999



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ABSTRACT

A study was conducted to assess and compare the nutritional status of primary school children in Mahaweli System "B" and Parakrama Samudraya in the district of Polonnaruwa. The Mahaweli System "B" is socio-economically different compared to Parakrama Samudraya.

Nutritional status of the primary school children was assessed using anthropometric indicators recommended by the World Health Organization. The anthropometric indices, height for age, weight for height and weight for age, were derived using weight, height and age data. The prevalence of undernutrition was determined by calculating the proportion of children whose anthropometric indices were below - 2SD of the median of the NCHS/CDC/WHO reference population.

The number of functioning schools were 71 and 34 respectively, in Mahaweli System "B" and Parakrama Samudraya. All these schools had years 1 to 5. Taking into consideration the number of primary school children, fifteen schools were selected randomly from Mahaweli System "B" whereas the number of schools selected from the other area was five. This enabled comparison of a similar number of primary school children in the two areas. The children selected were from year 1 to year 5, both inclusive.

The sample size required was 978 children from each area. The number of children included in the study was 1575 and 1078 from Mahaweli System "B" and Parakrama Samudraya, respectively. The study commenced in May 1997 and continued during the second and third terms up to October, 1997. The primary school children of Mahaweli System "B" were studied first. To make the age groups comparable the children of two areas were measured at alternate weeks. The measurements were taken

from 9 a.m. to 11 a.m. in the school. In every school an arranged class room with a cement floor and straight walls was used to take measurements because the weighing scale needs a flat, cement floor and the height measuring gauge needs a straight wall and a flat floor. All the schools had suitable class rooms. The time 9 a.m. was taken because the study team had to travel from the MOH (Medical Officer of Health) office to the school. The measurements were taken before the interval because lunch can affect the weight of children and to overcome the differences caused by diurnal variations, if any.

The study team consisted of two medical officers and two Public Health Inspectors (PHI). The study team was trained by the principal investigator in three, one hour sessions where the measurement taking and record keeping were discussed. The team was divided into two groups each having a medical officer and a PHI. One group was measuring heights and the other weights. In each group the readings were taken independently by the two members and whenever there was a disagreement the average was recorded. One member of each group was assigned the job of record keeping. The weighing scale was calibrated after every 10th measurement. The resetting of the scale was necessary, following transportation, when the venue of measurement taking was changed. However, for sake of quality assurance the calibration was continued. When the calibration changed, all readings immediately prior to that calibration were repeated and the average taken. This minimized both observer variation and the measurement variation.

Mean weights of primary school children in all age groups and both sexes were higher in Parakrama Samudraya than those of Mahaweli System "B". In each area mean

weight was higher among the males than the females. Both male and female children of all age groups were taller in Parakrama Samudraya than those of Mahaweli System "B".

The prevalence of stunting was higher among the male children of Mahaweli System "B" (35.10%) than those of Parakrama Samudraya (23.81%). Among females, the prevalence of stunting was also higher in Mahaweli System "B" (25.00%) compared to those in Parakrama Samudraya (19.77%). The prevalence values of wasting were 46.12% and 38.75% among males and females respectively for Mahaweli System "B". The respective values for the other area were 30.51% and 30.53%. In Mahaweli System "B" the prevalence of underweight was 62.59% and 52.81 for males and females respectively. The respective values for Parakrama Samudraya were 39.86% and 29.94%.

Both male and female children in Mahaweli System "B" are shorter for their age than those in Parakrama Samudraya indicating poorer past nutritional status of the primary school children in the Mahaweli System "B" compared to those of Parakrama Samudraya. In both areas no statistically significant sex differences were observed in the distributions with regard to the index height for age. In both areas the age wise distributions of height for age among males were not statistically significant in contrast to female children whose age wise distributions were statistically significant.

A statistically significant difference was found with regard to the index weight for height among both male and female children between the two areas. The sex difference was found to be statistically significant in both areas for weight for height. In both areas and both sexes the distributions for weight for height index show statistically significant differences when age wise distributions were compared except for male children in Mahaweli System "B".

The distributions with regard to the index weight for age were different statistically significantly among both males and females between the two areas. Age wise statistically significant differences exist in age wise comparisons among males of both areas and females in Parakrama Samudraya area. Among females of Mahaweli System "B", no statistically significant difference was found between the distributions of different age groups. A statistically significant difference between males and females was found among the children of Mahaweli System "B" but not among the children of Parakrama Samudraya.

Key words : Anthropometry, Nutritional Status, Reference Population, Z-score Distribution, Anthropometric Indicators