

## Growth and development of Vietnamese children from birth to 17 years old in Hanoi (a longitudinal study from 1981 to 1999)

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### Abstrak

#### <b>ABSTRACT</b><br>

Under nutrition among Vietnamese children is still a serious health problem. Growth retardation starts as early as 4 to 6 months of life and the prevalence of stunting has remained high (46.9% in 1994). It is documented that growth retardation during early childhood works through in adolescence and is rarely made up; it could also affect cognitive development of children, which eventually influence economic and human development. A longitudinal study on growth and development of Vietnamese children in Hanoi from birth to 17 years old was carried out from 1981 up to 1999.

Objectives: To investigate the physical growth, maturation age and academic performance of Vietnamese children on a longitudinal basis from birth to 17 years old and observe their secular trends.

Study design: A longitudinal observational study with 2 main cohorts: cohort A and cohort B.

Subjects of the study:

- Cohort A: 300 newborns, who fulfilled the selection criteria (gestational age from 38 to 42 weeks, birth weight 2500g, normal singleton birth without physical abnormalities, "Kish" ethnic group. mother's age: 20 to 35 years, and apparently healthy parents were randomly recruited and followed-up from birth to 17 years old (1981-1999).

- Cohort B. 200 children, who fulfilled above-mentioned criteria, were randomly selected and followed-up, from birth to 12 months; and 200 children were followed-up, from 12 to 24 months (1997-1999).

Monitoring of physical growth: Weight, height, feeding practices and diseases were recorded monthly from birth w 12 months, three monthly from 12 to 36 months, six monthly from 36 to 72 months, and annually thereafter until 17 years of age.

Results: Mean body weight and height of children from both cohorts at birth were lower than the NCHS reference. Then their weight and height during the first 3-4 months (cohort A) and 5-6 months (cohort B) were comparable to NCHS reference data. However, these trends were going down on subjects' aged above 6 months onwards. Physical growth of the children in cohort B, who have been in better living conditions, health care and more appropriate feeding practices, was better than the other counterparts (cohort A) comparable to French Vietnamese in Paris (1986).

The most intense period of growth retardation was observed in children aged 12 to 24 months. Children who were stunted during early childhood were still shorter than those non-stunted ones over observed period from birth to 17 years of age; the children who were stunted during childhood matured later and had lower academic performance than the well-nourished ones.

Birth weight, diarrhea and ARI were found to be the main determinants /or nutritional status of the children. Nutritional status of the parents in cohort B was also better compared to that of cohort A, - and the nutritional status of the children, whose mothers were undernourished, was worse than that those of well nourished mothers. Long term effect of exclusive breast feeding on nutritional status of children leas

observed in cohort A, however, it was correlated with WAZ of the children in cohort B only during the first 3 months of age.

Conclusions: There was a positive secular trend in growth of Vietnamese children over the last 2 decades. There was a partial catch-up growth among the stunted children during adolescence. Birth weight, diarrhea and ARI were the main determinants for nutritional status of the young children. Exclusive breast-feeding determined nutritional status of children in cohort A over the period from birth to 24 months old, however, it was correlated with WAZ of the children in cohort B only during the first 3 months (Ore. Nutritional status of both children and mothers can be used as an indicator for quality of life. The stunted children at preschool age matured later and had lower academic performance than the non-stunted ones.