INTERNATIONAL JOURNAL OF RESEARCH AND ANALYTICAL REVIEWS

IJRAR

International Journal of Research and Analytical Reviews

Physical Growth and Nutritional Status of the Kalita Children of Kamrup (rural) District, Assam(India):a research proposal

Sarat Chandra Bhuyan,

Faculty member of Anthropology,M.C.College,Barpeta(Assam:India)

ABSTRACT: Growth means the increase in size of the various parts and organs of the body by multiplication of cells and intercellular components during the period commencing from fertilization to physical maturity. It can be taken as an important manifestation of the genetic, environmental and psychological well-being of a person. The nutritional assessment of a community is to map out the magnitude of malnutrition as a public health problem, to discover and analyse the ecological factors that are directly or indirectly responsible.

KeyWords: Growth,fertilization,maturity,nutritional assessment,malnutrition,

INTRODUCTION

The term growth, in general sense, is used as a synonym for development, but biologically it bears narrower and sub-ordinate implications of increase in size. The increase in body size is determined by the pre-established constitutional hereditary factors and at the same time it is influenced by the environmental factors, like climate, diet, living condition etc. (Tanner, 1978). Richards and Kavanagh (1945) writes, "growth is a fundamental attributes of living organisms, manifested by a change in the size of the individual, or in the number of organisms in a unit of environment." Montagu (1960) writes, "growth may be defined as increase in size, while development is to be understood increase in complexity." We restrict the term 'growth' to mean an increase in physical size of the whole or any of its parts, whereas 'development' is used to indicate an increase in skill and complexity of function.

The fundamental property of all living system is to change with age in their body size. Growth is a complex phenomenon with its intrinsic pattern genetically determined but subject to a modification by various environmental factors like climate, nutrition, physiological disturbance, socio-economic etc. (Tanner, 1962). Tanner (1962) explains that "The growth status of a child at a particular age is the result of the interaction of both genetical and environmental factors and the possibility exists of certain environments being favourable for a child with a certain set of genes and highly unfavourable for another."

In large areas of world today tackling malnutrition especially that affecting young children is one of the principal public health programmes. Malnutrition has been defined as a pathological state resulting from one or more essential nutrients – the state being clinically manifested or detected only by bio-chemical, anthropometric or physical tests and is distinguished in four forms.

a) Under nutrition due to consumption of inadequate quantity of food over an extended period of time leading to marasmus and inanition

b) Specific deficiency

c) Overnutrition, consumption of excess food for an extended period of time and

d) Imbalance, disproportion of essential nutrients (Schrimshaw and Behar, 1965).

The nutritional assessment of a community is to map out the magnitude and geographical distribution of malnutrition as a public health problem, to discover and analyse the ecological factors that are directly or indirectly responsible and guiding action intended to improve nutrition and health (Jelliffe, 1966).

Malnutrition is undoubtedly the biggest public health problem in our country. A number of nutrition and diet surveys carried out among adult of the country have confirmed the existence of widespread malnutrition among the proper sections of our population (Rao and Balakrishna, 1990;Wakhlu, 1972; Satyanarayana et al. 1980; Srikantia, 1986).

SIGNIFICANCE

Data on growth of a population or a fraction of it help us to understand many biological processes. Growth and development occupies a central place in the study of individual differences in structure and function within the human species. (Tanner, 1960)

Somatometric measurements can reflect the nutritional status of different populations. In order to assess the progress of a population in the fields of health and nutrition different somatometric measurements can be used as indices. The measurement of muscularity in children of underdeveloped countries can be used as a general index of nutritional status and growth in size (Frisancho and Garn, 1971; Frisancho , 1974).

OBJECTIVES

The present study will be done with the following objectives :

a) To assess the nutritional status of the Kalita children anthropometrically from 2 to 5 years.
b) To study the growth pattern of the Kalita children from 2 to 10 years of age of both the sexes.
c) To compare the present data on growth with the available data from North East India.

METHODOLOGY

There are two different methods of studying human growth – longitudinal and cross-sectional. The longitudinal method is less frequent. In this study the same set of children is measured and followed over a number of years at regular intervals.

The cross-sectional method is more common. In this study large number of children are measured at different phases of growth, each child being measured once only. In addition to the above mentioned two methods, there is another method designed as mixed longitudinal method. In this method, the children are measured on at least two successive occasions. As some children become reluctant to be the subject after some time, their absence is replaced by a new set of children. The present method of study is a cross-sectional one.

The data   will be collected from the Kamrup (rural) district, Assam. It is intended to take into account the children from the age of **2** years onwards to the age groups of **10** years of both the sexes. A minimum of **30** children of each sex per age group will be the aim for taking the measurements. A door to door survey will be conducted to get the correct age of the children.

The following somatometric measurements will be taken in this regard.

Stature
i   Sitting height
)   Horizontal circ. of head
)   Girth of bicep
i   Girth of mid-fore arm
)   Chest girth
   a) Inhale
   b) Exhale
i)   Girth of calf
ii)   Weight

All measurements will be taken according to the methods prescribed by Martin (1928). The weight will be taken by a new portable weighing machine.

The nutritional status will be assessed anthropometrically considering both **age-dependent** and **age-independent** parameters. **Weight / height^2** and **mid-arm / head circumference** ratio have already proved to be good indices closely associated with the nutritional status of infants and pre-school children in many studies. So, here also these indices will be calculated in order to assess the nutritional status of the Kalita children of Kamrup (rural) district, Assam.

Nutritional status in terms of **weight** will be classified according to suggestions of the nutrition sub-committee of the India Academy of Paediatrics (1972). Children with more than 80% of the expected weight for age (50th percentile of the Harvard Standards taken as 100% of expected weight for age) will be termed as **normal**, those weighing between 71-80% will be taken as suffering from **mild** malnutrition (**Grade-I**), between 61-70% as **moderate** malnutrition (**Grade-II**) and less than 60% as **severe** malnutrition (**Grade-III**).

REVIEW OF LITERATURE

Growth study has received a considerable attention in all parts of the world and different investigators have studied this in different contexts. Scammon (1927), found a steady increases in studies on human growth since the beginning of the 16th century.The number of investigation already made in the different parts of the world has been nicely summarized along with original data by Krogman (1941).

In India, studies on human physical growth and certain physiological characteristics started around 1930. Mukherjee and Gupta (1930) studied height, weight, body surface area, pulse rate, respiration, blood pressure and vital capacity in a sample of 18 Bengali subjects to study basal metabolism.

Since 1936,several researchers have contributed significantly to the field of growth studies in relation to nutritional status. The Nutritional Advisory Committee of the India Council of medical Research (**ICMR**) initiated a nationwide cross-sectional study in 1956 and over one decade collected data on more than 1,27,000 subjects (ICMR 1972).

In the North-East growth studies dates back to the 1960s with the work of Das(1966 and 1971).She worked among children of the Kalita caste in Assam in respect of some somatometric characters.

Since then much work have been done in this region among different populations.

Duarah (1985) studied the growth pattern in respect of some anthropometric characters of three groups of Monpa boys of Arunachal Pradesh.

Duarah and Das (1978) studied the Khamti boys of Arunachal Pradesh with respect to their height, sitting height and chest circumference.

Devi (1985) studied the physical growth of Mongoloid populations of Manipur.

In the entire North-East, growth studies are entirely confined to the state of Assam.

Das (1973) studied the growth of Kaiborta boys with respect to height and weight.

Das and choudhury (1982) did the first mixed longitudinal study in the North-East on the growth in height and weight of Assamese children from 1 to 7 years.

Choudhury, Begum and Barua (1992) did a cross-sectional study of growth in Guwahati city, to look into the growth variation among school children of three groups. Assamese, Bengali, and Hindi speaking children from 4 to 10 years were measured for six anthropometric traits. Assamese children were found to be the tallest and heaviest.All the three populations were from more or less similar economic condition but the study reflected that utilization of their income was completely different. Their cultural needs regulated their budgetary distribution. This factor on the other hand affected their health status (Begum,1996).Choudhury and Begum (1995) found a positive correlation between growth and nutritional status in these three population groups.

The neo-Assamese Muslim population of Kamrup district was studied by Choudhury and Gogoi (1995) for their growth status in the pre-adolescent period and was compared with the indigenous Muslim of the same district.

Begum (1995) made a cross-sectional study in growth of indigenous Assamese Muslims of Kamrup district of Assam with respect to eight anthropometric measurements. The level of malnutrition prevalent among this community was 42.07 percent among boys and 45.39 percent among girls. More than 50 percent of the population enjoyed good health.

Year- wise plan of work and targets to be achieved

a) The first year will be devoted to both intensive and extensive field work.
b) The first 3 month of the next year will be spent in visiting libraries of different Indian universities in order to gather information.
c) The next 9 months will be devoted to analysis of data, writing and compilation of the project report.