A COMPARATIVE STUDY OF THE PHYSICAL GROWTH AMONG EGYPTIAN CHILDREN (6-9 years) IN TWO DIFFERENT SOCIO-ECONOMIC LEVELS

THESIS

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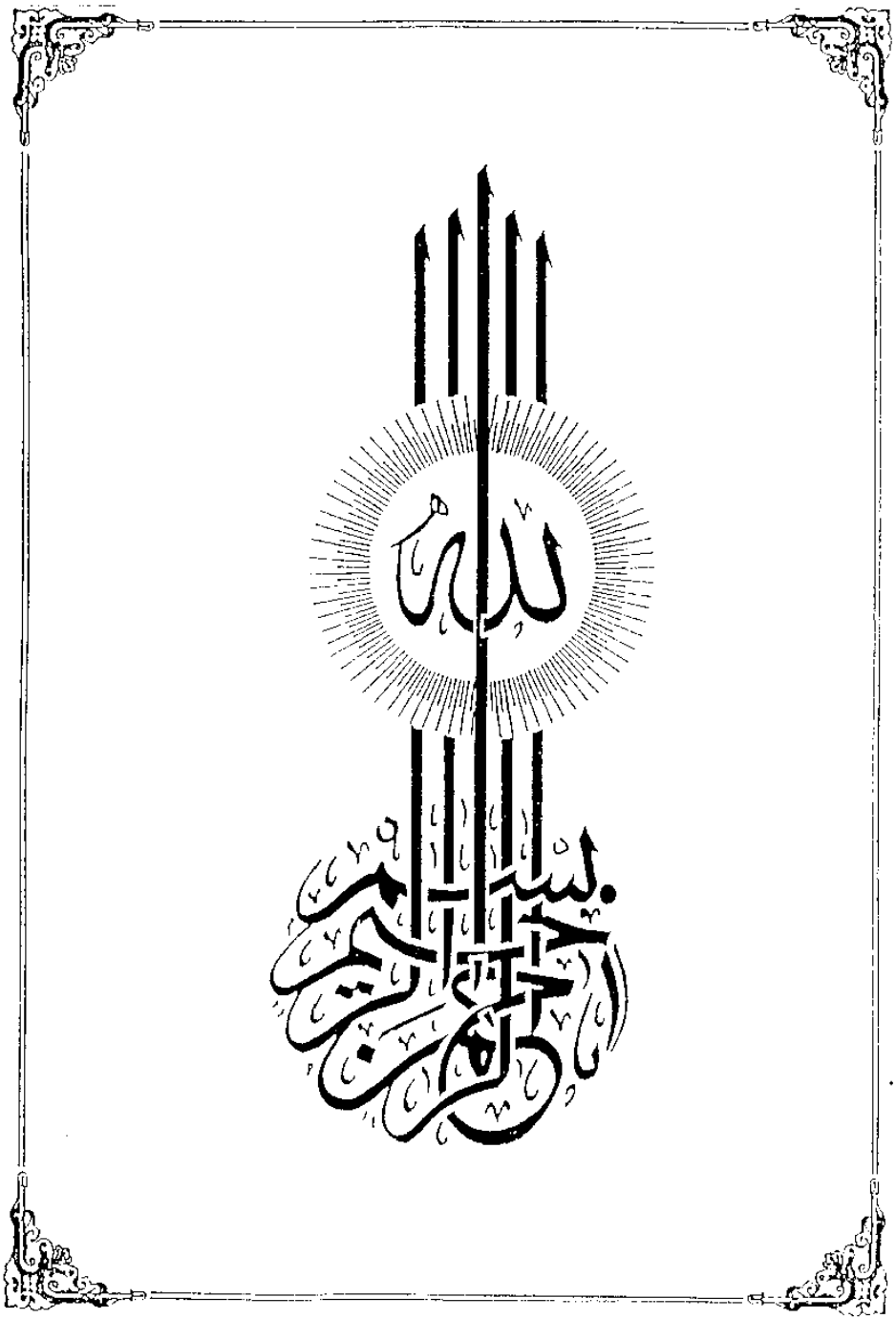

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INTRODUCTION

The characterstics of children, which most clearly distinguish them from adults, are that they are growing. Adults are not growing except perhaps in girth, and most of them are degenerating (Meadow and Smithells, 1981). The growth of an individual results from the interaction of his genetic potential and environmental factors in which the individual lives. Socio-economic factors are of great importance in determining the physical status of children (Eveleth and Tanner, 1976).

Socio-economic conditions may affect many aspects of life such as cultural concepts, dietary habits, food consumption and ability to purchase quantity and quality of the diet.

This work is an attempt to shed light on the effect of socio-economic status on the physical growth of children, through an epidemiological field-work, done among school children aged 6-8 years and taken from two different socio-economic classes.

CHAPTER : I

- Importance of The Present Study
- Aim of The Study
- Statement of The Study Problem
- Hypothesis of The Study

Importance of the Present Study:

The importance of the present study has arisen from considering the following;

1. In developing countries, such as Egypt, children of school age (5-18 years) constitute about one-third of the population.

2. Significant physical changes characterize the growth of the school-age child.

3. Proper growth and development of children is above and beyond the most important procedures of treating illness and preventing diseases. To support this, studies concerning the factors affecting growth and development of school-children are urgently needed.

4. Physical growth of children is the product of the accumulated effects of hereditary and environmental factors acting since conception. Any study of the reasons for the differences in physical growth among children of the same age group involves an examination of one or more of these factors.

5. Socio-economic factors are the most important environmental factors affecting physical growth of school-aged children, since other environmental and hereditary factors affect growth significantly

during the first year of life.

For these reasons, our thoughts and efforts are directed during this study to determine the effect of socio-economic factors on physical growth of children aged 6-8 years.

Aim of the Study :

Children are more vulnarable to different factors which affect their growth and health. Although the role of each of these factors differs according to the stage of growth, yet socio-economic factors appear to have their role throughout childhood-period.

The aim of this study is to find out the effect of the socio-economic status on the physical growth-measurements among Egyptian school children aged 6,7 and 8 years and taken from two different socio-economic classes.

Statement of the Study Problem:

The problem of this study can be stated in the following question:

Are there differences in the physical growth-measurements between children of two different socio-economic classes?

Hypothesis of the Study:

There are significant differences in the physical growth-measurements between the children of the two different socio-economic classes in favor of the upper one.

CHAPTER : II

REVIEW OF LITERATURE

Definitions of Terminology:

Growth: Denotes change in size resulting from increase in the number or size of the cells of the body (Abbassy et al., 1972).

Development: Is an over all increase in range, complexity and integration of individualized characterstics (Bahader, 1984).

The development and growth are continuous dynamic processes occuring from conception to maturity and taking place in an orderly sequence which is approximately the same for all individuals (Silver, 1980).

Physical growth is not just a change in size, it is also a change in proportions, structure and function, which often go together (Apley, 1979). Changes in function range from the molecular level such as activation of enzymes to complex inter-play of various organs in the metabolic and physical changes (Nelson, 1983).

Maturity Gradient:

It is known that all parts of the body do not grow at the same absolute rate but most parts grow at a decreasing rate in the 1st year with a few more years of gradual deceleration until the adolescent spurt occurs (Marshall, 1977).

Through the whole growth process, some regions of the body grow more quickly than others. Broadly speaking, the head is much more advanced in progress towards its adult size than the trunk, while the shoulder girdle is nearer its adult size at any given time than is the pelvic girdle. This phenomenon has been described as a cranio-caudal "maturity gradient". During childhood, the maturity gradient in the limbs runs from the distal to the proximal end so that the foot is nearer its adult size at any given age than the leg which in turn is more advanced in growth than the thigh. A similar situation exists in the upper limb (Marshall, 1977).

Individuality of Growth and Development:

No single schedule can be anticipated for any one child. First, there is a difference between the sexes; secondly in the same sex there can be considerable variation within normal limits, finally, various organ systems and functions within the individual reach maturity at different times.

This concept of individuality has gained great impetus resulting in the use of graphs and charts on which each child establishes his own pattern of development. However, the concept of the usual range or distribution of physical, mental or physiologic attributes is important and it is desirable to compare each measurement of the child under observation with his distribution

rather than with any single norm. Obtaining and interpreting each measurement improves clinical judgement and may bring to one's attention characteristics which might otherwise be overlooked (Lowrey, 1978).

Sex Differences in Growth:

At birth and during early childhood, boys are slightly taller and heavier than girls. Girls exceed boys in stature between about 10 and 13 years because of the earlier occurance of preadolescent spurt in girls (Barnett and Einhorn, 1968). Boys are usually larger than girls by only 1-3 percent in most body measurements before puberty (Tanner, 1978). Not all measurements follow this pattern: e.g. at all ages, boys exceed girls in chest circumference, girls exceed boys in thigh circumference and boys exceed girls in skeletal maturity and muscular development (Barnett and Einhorn, 1968).

Physical Growth During Early School Years:

The early school years are a period of relatively steady growth ending in a preadolescent growth spurt by about the age of 10 years in girls and about 12 years in boys. At the start of this period, the brain and the head size are nearly 90% of the adult size, height is about two-thirds and weight only one-third of the ultimate full growth. The average gain in weight during these years is about 3-3.5 kg/year and in height approximately 6 cm/year. Growth in head circumference is slowed

as it is only increased from about 51 cm to 53-54 cm. between the ages of 5-12 years (Nelson, 1983).

Factors Influencing Growth and Development:

The individual pattern of growth and development of any given child is determined by an interplay of hereditary and environmental factors (Wasserman and Slobady, 1974). From the time of conception until death, each phase of growth is influenced by the interplay of the inherited genes and the many environmental factors whose roles begin at fertilization (Lowrey, 1978).

A number of extrinsic and intrinsic factors influence the rate of growth. Socio-economic, nutritional status, seasonal, psychological, hormonal factors and diseases as well as activity are the most important extrinsic factors. While intrinsic factors include racial, sexual and genetic factors (Wasserman and Slobady, 1974).

l) Genetic Factors:

The growth is fundamentally a polygenic determination. The body size and growth rate are influenced by many genes on different loci acting independently of each other (Robson, 1978) and each one of them has a small effect (Tanner, 1984).