

IMPACT OF HOME ECONOMICS EDUCATION ON THE ANTHROPOMETRIC MEASUREMENT OF JUNIOR SECONDARY SCHOOL STUDENTS

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Abstract

This study investigated the impact of Home Economics on the anthropometric measurement of J. S. S. students, Research sample consisted of three schools, two mixed and one single girls' school in Egor Local Government Area, Benin City. A total of one hundred and eighty students consisted the sample. Bathroom scale and Heightometer were used to carry out the anthropometric measurements. Simple percentage was used in analysing the data collected, the study findings indicated no differences in the weight and height of the students offering Home Economics and those not. However, 21% of the students had weight higher than those of the standard. Exposure to home economics did not affect body measurements, the latter may be largely influenced by other factors. Recommendations were (then proffered).

Key Words: Home Economies, Anthropometric Measurements

Introduction

The discipline of Home Economics plays a vital role in lives of individuals and families. Home Economics is a field of study that cuts across every aspect of family life. In fact, it is family centred. It is a vocational course, multi-dimensional and skill acquisition oriented, According to Wakjissa, Eulu, Datal, Padang, Amagon, Ntuhum, Langkuk and Ahupa (2001) and Olabisi (2003), Home Economics is the study of law, conditions, principles and ideals. This is concerned with man's immediate physical environment and his social wellbeing. Anderson (1973) stated that the field's ultimate purpose is for families everywhere to achieve the highest quality of living and happiness in their homes and communities. Fleck (1974), also stated that home economics contributes to the shaping of the world through its professional impacts on millions of individuals and their families. One major avenue, through which Home Economics is made useful and meaningful to individuals and families is education.

Perhaps, the greatest single challenge in Home Economies is that of educating people to make full use of the available knowledge in the selection of the diet, fabrics, childcare, home management, budgeting among others. Fleck (1974), stated that Home Economists are engaged in educating the individual for family living and to meet the changing needs of individual and families through furthering community, national and world conditions. Home Economics education is the act of imparting in individuals and families information that will be beneficial to them, promote their health and enhance stronger family tie. According to Nickols (2003), the home economists are the primary sources of knowledge about families and their function, hence useful in educating the government, individuals and families when questions arise in child development, parenting, textile product safety, indoor air quality, personal debt; impact of welfare reform, consumer demand related to demographic shifts and effects on day care. Others may include inquiries about food safety and nutrition. Home economists employ anthropometric measurement as one of the indices for assessing nutritional status of individuals. This study is to find out what possible impacts Home Economies Education have on the anthropometries measurements of student that offer the subject in Junior Secondary Schools and those who don't. Junior secondary school students compulsorily offer Home Economics and anthropometric assessment is most useful at this particular teenage stage, since the stage is characterized by growth.

Anthropometric assessment is one of the numerous nutritional tools used in carrying out surveys on the nutritional status of a given group. Anthropometric tools are used in getting the height, weight and other body measurements in an individual. According to Owen (1975), anthropometric assessment is the measurement of the physical dimensions and gross composition of the body at different age levels and degrees of nutrition. With anthropometric assessment, prevailing nutritional deficiencies, and their impact on

the physical growth of a given group or individual is detected. Yannochik and White (1977) stated that anthropometric measurement constitute the major objective data used in determining nutritional status so as to determine avenues for intervention. Reva and Anita (1978) further stated that growth, height, weight and other body measurements are some of the tools used to identify populations in which nutritional inadequacies are reflected by retarded growth and development. Most times, these nutritional deficiencies prevail in a given group out of ignorance, poverty, geographical location, taboos, culture and religion. It is expected that those factors and their subsequent fallout may be changed through education. Students may serve to disseminate such acquired knowledge to family members and friends. This is the reason for the relevance of the J. S. S. students in this study.

Numerous physical and chemical methods have been developed for measuring the metabolic changes, which occur with variations in nutrition. Part of the study of nutrition is concerned with a knowledge of such changes and an interpretation of their significance in assessing the quality of nutrition. According to Tod Hunter (1998), "You are what you eat" this statement in a sense is true because food supplies the nutrients needed as a source of energy for activity of the body and as structural materials for any cell of the body. Nutrients are also used for the synthesis of the numerous regulatory substances that are essential to life (Lean, Han and Morrison, 1995:159).

According to Aldrich (1997), the term 'growth' refers to an increase in size due to cell multiplication, while the term 'development' connotes an increase in the complexity of function. The size of a person, is limited by heredity, but nutrition and other environmental factors determine to a large extent the realization of such potential. Edward (1974), stated that the maximum gain in weight and in height occurs in girls between 11 to 13 years and 13 to 15 years in boys. Girls are taller and heavier than boys between 11 to 12 years, but thereafter, the boys catch up with and exceed the girls. It is very important therefore to give adequate diet for any child to achieve maximum growth with the right weight.

Boys and girls seem to prefer bizarre, unbalanced diets during the teenage years. The changes in food habits may be ascribed to the growing feeling of independence and the need to assert authority. Others may be influenced by their associates, the concern about figure, skin problems and physical fitness. Heinemann (1990) in his research, of 1000 students in the ninth grade and again in the eleventh grade concerning their food habits and feeling about food, found that teenagers are extremely conscious of their figures. Over 50 percent of the girls were concerned, about overweight, while an equal number of boys were unhappy about under-weight. Over half of the girls in the study called themselves fat to some degree, but by measurements, only one-fourth could be classed as obese or somewhat obese. Half of the girls desired smaller hips, thighs and waists. Both boys and girls desired to do something about their figures, the boys preferring exercises and the girls, diet.

Anthropometry, the study of human body measurements, comprises a valuable part of forming the nutritional profile. Factors influencing anthropometry includes illness, malnutrition, genetics, gestational age, emotional stress, hormones, and culture among others. According to Reva and Anita (1978), problems of stunting, under-nutrition and over-nutrition can be identified with the use of anthropometric methods. The American Public Health Association Guide (1973) recommends following for anthropometric measurements.

- > Weight/height
- > Recumbent length (crown-heel)
- > Head circumference (Neonates and Infants)
- > Chest circumference (neonates and infants)
- > Triceps skin fold

Purpose of the Study

The purpose of the study therefore, is to determine if there exists any relationship between the knowledge of Home Economics and the anthropometry of junior secondary school students.

Research Questions

The following research questions will guide the study.

1. Are students who study home economics likely to have higher anthropometric measurements?
2. Does anthropometric measurement vary within students?

Instruments

The instruments (Bathroom Scale and Heightometer) used for the research were adequately balanced for reliability. This was done by making sure that the scale was on zero kilograms (0 kg) before any of the subjects were measured. The heightometer had a flat and levelled stand, each student was asked to mount the bathroom scale and the weight recorded against the height. The students were required to stand on the flat surface of the heightometer placed against the wall and the height recorded. All readings were taken throughout and recorded and the average determine.

The instrument used comprise of two sections A and B. section A was a questionnaire comprising two items on the biodala of the students while section B was used to record the anthropometric measurements of the student. These measurements comprise of the height and weight. Bathroom scale was used for the weight and heightometer for the height.

Population

The population of this study was made of all teenage boys and girls in all 39 junior secondary in Egor Local Government Area in Benin City,

Sample and Sampling Technique

Junior secondary school 111 students were used for this study. Of the 15 secondary schools offering home economics in a Egor Local Government. The schools were zoned into three comprising five in each zone. The schools were tagged A, B, C, (UGSS, Evbarckc and FGGS). 30 students were each randomly selected from home economics and non home economics offering classes. The sample size of this study was 180 students. The limited number was due to overwhelming measurement required in the study coupled with limited number of students offering home economics.

Data Analysis

The recorded reading were compared to the standard weight and height guideline (Dietary Guidelines Advisory Committee, 1995).

Results

The ages of the students ranged from 11-16 years of age. The children whose parents earned below N10,000 monthly were 29%, 46 between NO-12,000 and 25% about £420,000.00. Those from family structure of monogamous homes were 72% and 28% from polygamous ones. The average number of children were below 4 (48%), 50% between 4 and 6, 2% above 6.

Table 1 **Anthropometric Assessment of Home Economics Students in School A**

S/N (GROUPS OF THREE)	Age	Sex	Measured Weight	Standard Weight [*]	Measured Height	Standard Height [*]	% of Standard Height	BMI Weight/Height [*]
1	15	F	44.2	51.5	85.8	161	93.2	8.84
2	16	F	47.2	53.2	88.8	162	93.2	9.44
3	14	F	41.6	49.2	84.5	159	92.4	8.40
4	14	M	45.4	48.8	93.8	162.2	95.1	8.70
5	15	M	41.6	54.5	76.3	167.8	89.4	8.84

* *Source:* Sizer and Whitney (2002)

Table 2 **Anthropometrics Assessment of Non Home Economic Students School A**

S/N (GROUPS OF THREE)	Age	Sex	Measured Weight	* Standard Weight	Measured Height	* Standard Height	% of Standard Height	* BMJ Weight/Height
1	15	F	50.8	51.5	98.6	161	102	9.2
2	16	F	46.0	53.1	86.6	162	98	8.7
3	15	F	60.4	51.5	117.3	161	96.9	11.6
4	13	M	41.8	49.9	83.8	157	91.7	8.7
5	14	F	41.6	49.2	84.5	168	87.5	8.4

* *Source* Sizer and Whitney (2002)

Tables 1 and 2 represent data collected from school A. Table 1 for students offering Home Economics while Table 2 was for non-Home Economics students.

From the two tables, there is a remarkable difference in height of the females that fall within the range of 14 years. The ones offering Home Economics seemed to be shorter than the non Home Economics students. Generally, the mean height of the non-Home Economics and Home Economics students in Tables 1 and 2 seemed to be similar. Compared to standard weight, both non-Home Economics and Home Economics in Tables. 1 and 2 in school A fell below standard values.

S/N (GROUPS OF THREE)	Age	Sex	Measured Height	* Standard Height	Measured Weight	* Standard Weight	% of Standard Height	A BMJ Weight/Height
1	11	M	141	144	35.2	31.5	97.9	6.8
2	12	M	144	149.6	38.3	35.8	96.3	7.4
3	12	M	153	149.6	38.3	41.0	102.3	8.0
4	11	F	138	144.7	35.7	35.6	95.8	7.7
5	12	F	150	151.9	39.2	38.0	98.7	7.6

* *Source* Sizer and Whitney (2002)

Table 4: Anthropometries Assessment of Non-Home Economics Students in School B

S/N (GROUPS OF THREE)	Age	Sex	Measured Height	* Standard Height	* Standard Weight	Measured Weight	Standard % of Height	* BMJ Weight/Height	* Standard Weight/Height
1	12	M	136	138	29.6	38.3	92.2	6.4	29.6
2	14	M	163	165	60.2	48.3	101.4	10.9	60.2
3	12	M	134	138	30.4	38.3	92.2	6.6	30.4
4	11	F	192	196	44.8	35.7	107.8	8.6	44.8
5	12	F	49	150	46.4	39.7	98.7	19.3	46.4

Source Sizer and Whitney (2002)

Tables 3 and 4 represent school 13. Table 3 reported anthropometric measurements for students offering Home Economics and 4 for non-Home Economics students. In Table 3, the recorded values for weight were higher in some instances than the standard weight and height. The measured height values were higher than the standard values.

In Table 4, the height of all the non-Home Economics student were similar to those of the standard values.

Table 5 Anthropometric Assessment of Home Economics Students in School C.

S/N (GROUPS OF THREE)	Age	Sex	Measured Weight	* Standard Weight	Measured Height	* Standard Height	% of Standard Height	* BMI Weight/Height
1	12	F	43.4	39.7	156	151.9	102.7	8.3
2	12	F	38.8	39.7	147	151.9	96.8	7.9
3	13	F	25.0	44.9	126	157.1	80.2	6.0
4	11	F	46.2	35.7	156	144.7	107.8	8.9
5	12	F	52.0	39.7	159	151.9	104.8	9.8

* *Source* Sizer and Whitney (2002)

Table 6 Anthropometric Assessment of Non-Home Economics Students in School C.

S/N (GROUPS OF THREE)	Age	Sex	Measured Weight	* Standard Weight	Measured Height	A Standard Height	% of Standard Height	* BMI Weight/Height
1	12	F	32.4	39.7	147	151.9	96.8	6,6
2	12	F	30.4	39.7	138	151.9	90.8	6.6
3	14	F	50.4	49.2	159	159.6	99.6	9.5
4	13	F	48.8	44.9	159	157.1	101.2	9.2
5	12	F	31.2	39.7	144	151.9	94.8	6.5

* *Source* Sizer and Whitney (2002)

Tables 5 and 6 represent school C. Table 5 showed values for students offering Home Economics while Table 6 represents the non-Home Economics students. Table 5 showed that nine out of the fifteen girls were heavier in weight and taller in size than the standard weight and height values.

Discussion of Results

This study has indicated that there are no differences between the students offering Home Economics and non-Home Economics students in their anthropometric measurements. Surprisingly, the values obtained were comparable to the standard values. The anthropometry of these students may be due to other influencing factors such as their socio-economic backgrounds, perhaps heredity among others. From the results obtained, none of the students seem to be malnourished as indicated by their weights and heights. This is good news in the face of economic recession pervading all cadres of persons. This may also be due to the fact that the girls in the study are still very young teenagers, so are not so self-conscious of weight gain as to reject normal foods for the more trendy inadequate ones and the boys in the phase of rapid growth demanding much food intake. Heinemann (1990) in his findings stated that teenage girls are extremely conscious of their figures, but boys have better nutrient intake than girls, probably because of the volume of food they consume, which is found to provide some nutrients in addition to supplying the energy needs.

Conclusion

Weight for height are indices used in assessing the nutritional status of persons. These measurements are greatly influenced by environmental factors both externally and genetically. Food consumption to a great extent also affects these measurements. From the findings of this study it can be easily

be concluded that the knowledge of home economics may not be one of (lie environmental factors a Heeling anthropometry.

Recommendations

In me, light of the preceding discussions, it is hereby recommended that:

1. Government supplementary school' food policies should be geared towards the underprivileged among students. This study may not have identified these students, which is not within its scope.
2. Students irrespective of gender must embrace home economics education as a sure means of disseminating nutritional information to the generality of masses.

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