ANTHROPOMETRIC DETERMINANTS OF HYPOKINETIC FITNESS STATUS OF SEDENTARY WOMEN IN NIGERIA

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ABSTRACT

The purpose of this study was to assess the anthropometric determinants of hypokinetic fitness status of sedentary women. The total of two hundred (200) participants was randomly drawn participated in the study. Three variables were examined to reveal the fitness status of selected women. Thus, the f-value of blood pressures, body mass index and percentage body fat were 3.144, .797; .737; and 1.823 respectively. It was therefore discovered that anthropometric parameters such as blood pressures, BMI [weight and height], percentage body fat are strong determinants in the assessment of fitness status and the risks of developing hypokinetic diseases among women. It clearly observed that mortality rate is on the increase from diseases associated with sedentary living. Therefore, it has become necessary for Nigerians especially the women folks to recognize the dividends of living a healthy and physically active life.

Keywords: Anthropometric, Hypokinetic, fitness and sedentary.

INTRODUCTION

The presence of ailments in the human body causes weakness, fatigue and even depression and each brings about discouragement in participating in physical activities. They also hinder proper growth and development as well as healthy lifestyle and retard enhanced sports performance. The normal healthy bodily function of an individual is a great asset to him or her in physical activities and sports. However, when proper functions are altered especially when the individual is forced to lead sedentary lifestyle, hypokinetic diseases set in. The prefix hypo means "low or lack of" and kinetic refers to movement. Thus, hypokinetic diseases or disorders refer to those diseases that can be associated, in some respects, with a sedentary lifestyle (Prentice, 1997). These hypokinetic problems or abnormalities can adversely affect the healthy individual's lifestyle, body composition, energy cost or expenditure as well as the fitness status and sports performance of the concerned individual. This state of affairs leads to the deterioration of the physiological functioning of the individual's body and his/her being active in life.

The individual's body composition, which comprises both the fat and the non-fat components, can undergo some physiological changes following the person's body disuse causing the functioning to been altered. More so, the individual exerts more energy in getting any work or physical activity done. The body density or weight of such a person will increase and this tends to bring about risks of developing hypokinetic diseases such as heart diseases, high blood pressure, diabetes mellitus, obesity, arthritis, foot and ankle pain and low back pain. These ailments or conditions are linked to sedentary lifestyle.

Consequently, any alteration in the human body density, lean body mass and percentage body fat can also lead to the development of different hypokinetic disorders. In order to avoid the onset of these hypokinetic diseases or disorders, the individual's body needs to be

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ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 4 No. 2 March 2013

adequately engaged in physical activities. It gives opportunity to evaluate the direction in which the health and wellness of such an individual is tending to and the level of energy he or she expends during an activity.

In assessing an individual's body fat and non-fat components, a variety of methods are in existence, the notable methods include magnetic resonance imaging (MRI), hydrostatic or underwater weighting, bioelectrical impedance and dual energy X-ray absorptiometry (DEXA) (Deurenberg & Schutz, 1995; Jebb & Elia, 1993). The methods that are accessible to a broad base of practitioners in movement sciences and the health and fitness professions to which exercise physiologists anchor themselves include the skin-fold or anthropometric methods.

In anthropometry, the skin-fold caliper is used for measurement of subcutaneous tissues. In addition, the ratio of body weight to stature (height), determined through the Body Mass Index (BMI) is used to assess health risks and an individual's level of active life. BMI is calculated by dividing body weight in kilograms by height in metres squared. The relationship between BMI and fat as a percentage of body weight is approximately linear (Norgan, 1979). Although different cut-offs have been used, if BMI is greater than 30, a person is judged to be obese, a BMI of between 24 and 29 indicates an overweight, 18 and 24 shows a normal or desirable weight while a BMI of less than 18 is underweight (Jackson & Pollock, 1985).

Presently, it has become obvious that the rate of developing hypokinetic problems such as coronary artery diseases, diabetes, hypertension, stroke, obesity, arthritis, low back and foot pains are gradually on the increase. These problems can hinder the efficiency and effectiveness of the human body motor movements in meeting up with daily-demanding tasks. Most of our women tend to see themselves as being strong and healthy because of their abilities. They may not have enough strength for emergencies or extra energy expenditure beyond their normal daily activities. This is because of their inability to realize that their body processes and composition might be drifting toward unfitness. This condition or state may not only cause adverse changes in their movement patterns but also on their health status and their level of motivation to perform physical activities.

From observation, people's awareness of being fit and well is on the increase but not yet popular among the average women in Nigeria. It has become necessary for Nigerians especially the women folks to recognize the dividends of living a healthy and physically active life. Yet, a lot still has to be done in order to discourage the sedentary lifestyle and inactivity of most people especially the women who spend most of their times in carrying out their daily businesses without any considerations about their fitness and well-being. This is to avoid the onset of any form of mechanical, physical and biochemical disorders in one's body processes. The effect of hypokinetic diseases is becoming a global epidemic in both children and adults and one of every nation's most pressing health problems (Blair, 1996).

It is generally believed though wrongly, that the ability of a person to be involved in daily tasks, is enough an exercise to keep him or her healthy and fit. Being fit and well can achieved by more than mere engagement in house chores and other domestic and daily routines as some women may claim. Most women tend to be inactive and are not bothered about their wellness status. Instead, these women project many claims about fitness and wellness. It is only when an abnormal situation arises that such individuals agree that they are under-exercising and consequently unfit.

It is worthy of note that the development of excess body weight by the women seems to be wrongly believed to be a sign of prosperity. Due to ignorance, which is no excuse in law,

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many t women do not see the need for regular checking and assessing of their fitness and wellness status vis-à-vis their level of motor performances. To most of them, the checking of blood pressure, heart/pulse rate, weight, sugar level and the like belong to those that are physically or medically ill.

Therefore, it is necessary to carry out this study to assess anthropometric determinants of hypokinetic fitness status of women.

HYPOTHESES

The following hypotheses were tested at 0.05 alpha levels.

1. The blood pressures of the participants would not be significantly different with respect to their risks of developing hypokinetic diseases.
2. The participants BMIs would not be significantly different with respect to their risks of developing hypokinetic disease.
3. The percentage body fat of the participants would not be significantly different with respect to their risks of developing hypokinetic diseases.

METHOD

Research Design

The descriptive survey design was used as the research design. It was chosen because it provides appropriate methodology for human behavior, perception and opinion.

Sample and Sampling Technique

Two hundred (200) participants were systematically drawn using systematic random sampling technique from four major occupations (that is teaching, nursing, secretarial job and marketing). Females were dominants in these chosen occupations.

Instrumentation

Based on the study adopted, both questionnaire and anthropometric measurements were use in collecting necessary information from participants. Validated questionnaire was used to assess the participants demographic characteristics while weight, height, blood pressure, percentage body fat were the parameters for assessing the anthropometric status.

The participants' blood pressure was measure using the Fuzzy Full Automatic Digital Blood Pressure Monitor Model XJ-2002AS to assess the systolic and diastolic blood pressures. Heights were measure using a standardized stadiometre while the Body Fat Monitor Model BF400 was used to measure the weight and percentage body fat simultaneously. The weights and heights data so obtained were used to compute the body mass index (BMI) which is calculated as weight in kilogram divided by height squared in metres.

BMI = weight (kg) / height (m^2). BMI is used to determine overweight and obesity and to estimate relative risk for disease compared to normal weight as classified by WHO (1998).

Method of data analysis

Data were analyzed using descriptive statistics of means and standard deviation. Analysis of variance was used to test the hypotheses at alpha level of 0.05.

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ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 4 No. 2 March 2013

RESULTS AND DISCUSSION

Table 1. Means and standard deviation scores of the measured parameters

Variables	*X*	*S.D*
Height	159.8	8.8
Weight	64.4	9.3
SBP	128.4	12.6
DBP	80.5	7.3
%body fat	37.4	5.3

N = 200

Table 1 above shows the means and standard deviation scores of the measured parameters of the participants (N = 200). The participants has the mean of 159.8 ± 8.8 height, 64.4 ± 9.3 weight, 128.4 ± 12.6 SBP, 80.5 ± 7.3 DBP and 37.4 ± 5.3 % body fat.

Hypothesis 1

The blood pressure of the participants would not be significantly different with respect to their risks of developing hypokinetic diseases.

Table 2. Analysis Of Variance of Blood Pressures [Systolic and Diastolic Blood Pressures in relation to hypokinetic diseases]

	Sum of Squares	*Df*	*Mean Square*	*F*	*Sig.*
SBP	988.763	2	494.382	3.144	.045
DBP	84.481	2	42.240	.797	.452

P> 0.05

From the table 2; the calculated value (f) for systolic blood pressure is 3.144 is greater than the critical value of .045 while that of the diastolic blood pressure calculated value is .797 is greater than the critical value of .452. Therefore the hypothesis that the blood pressure of the participants would not be significantly different with respect to their risks of developing hypokinetic diseases is rejected. Thus, the blood pressures of the participants will be significant to their risks of developing hypokinetic diseases.

Hypothesis 2

The participants BMIs would not be significantly different with respect to their risks of developing hypokinetic disease

Table 3. Analysis Of Variance on BMIs in relation to hypokinetics diseases

	Sum of Squares	*df*	*Mean Square*	*F*	*Sig.*
BMI	7.339	2	3.670	.737	.306

P> 0.05

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From the table 3; the calculated value (f) for BMI is.737 which is greater than the critical value of.306. Therefore, the hypothesis that the participants BMIs would not be significantly different with respect to their risks of developing hypokinetic disease was rejected. Thus, the BMIs of the participants will be significant to their risks of developing hypokinetic diseases.

Hypothesis 3

The percentage body fat of the participants would not be significantly different with respect to their risks of developing hypokinetic diseases.

Table 4. Analysis Of Variance of percentage body fat of participants in relation to hypokinetic disease

	Sum of Squares	*df*	*Mean Square*	*f*	*sig.*
% body fat	101.684	2	50.842	1.823	.164

P> 0.05

From the table 4; the calculated value (f) for percentage body fat is 1.823, which is greater than the critical value of.164. Therefore, the hypothesis that the percentage body fat of the participants would not be significantly different with respect to their risks of developing hypokinetic disease was rejected. Thus, the percentage body fat of the participants will be significant to their risks of developing hypokinetic diseases.

DISCUSSION OF RESULTS

The findings of this study provide support in some respect for many previous studies. The study revealed that in general the assessed anthropometric determinants are very significant in the risks of developing hypokinetic diseases among women. From all observation, the blood pressure level that is another strong determining factor on the onset of hypokinetic diseases was significant in the sense that; the systolic blood pressure was a bit higher than the diastolic blood pressure. In harmonies with Ugwu (2009), that increase in systolic blood pressure depends on age, gender and intensity of exercise and high systolic blood pressure may indicate underlying issues that could lead to serious diseases and complications. It has been ascertained that systolic blood pressure in women returns more quickly to normal than that of the opposite sex. More so, as people become older, the diastolic blood pressure will begin to decrease and the systolic blood pressure begins to rise and becomes more important as compared to the diastolic blood pressure in young persons.

Another key finding of this study showed that the role of the body mass index(BMI) cannot be ignored, BMI that is commonly used to classify underweight, overweight, and obesity in adults showed that the risks of developing hypokinetic diseases is on the increase as certain ill-health or body dysfunctions are closely related to excessive weight and obesity. Overweight and obesity constitute major health problem with a high mortality rate and an increased risk of coronary heart disease, hypertension, diabetes and adverse psychological reactions.

From the findings of this study, the percentage body fat, which correlates closely to BMI, and the total body fat in an individual has a high influence on the risk of developing hypokinetic diseases. A high level of percentage body fat is injurious to cardiovascular health, which are more likely to been complicated by leading a sedentary lifestyle and thereby increasing the risks of developing hypokinetic diseases.

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ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 4 No. 2 March 2013

CONCLUSION

It is evident from the findings of the study that anthropometric parameters such as blood pressures, BMI [weight and height], percentage body fat are strong determinants in the assessment of fitness status and the risks of developing hypokinetic diseases among women. It clearly observed that mortality rate is on the increase from diseases associated with sedentary living. Therefore, it has become necessary for Nigerians especially the women folks to recognize the dividends of living a healthy and physically active life.

RECOMMENDATIONS

In view of the above discussions, the following recommendations are made:

1. Women should be encouraged to live a positive lifestyle through engagement in daily physical activities in order to attain the dividends of good health and health practices.
2. Public awareness programmes should been organized to enlighten the society about the scourges of sedentary lifestyle to enhance the life expectancy of the members of the societies.
3. The government should from time to time organize campaigns, workshops and seminars in markets, schools, communities, towns concerning the need for medical check-ups and involvement in recreation activities both indoors and outdoors.
4. Stakeholders in policymaking and practices should enforce regular physical training among teachers, pupils, students, workers, traders etc., as a self-development programme.

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