UNIVERSITY FEMALE UNDERGRADUATES' LEVEL OF AWARENESS OF MID-AGE MORPHOLOGIC EXPANSION AMONG NIGERIAN FEMALE ADULT POPULATION

Elvis I. Agbonlahor[1], E.O. Agwubike, Samuel A. Olikiabor

Department of Health, Environmental and Human Kinetics,
University of Benin, Benin City, NIGERIA.

[1] elvisagbon@yahoo.com

ABSTRACT

The paper assessed undergraduate female students' level of awareness about Nigerian women's mid-age morphologic expansion. A three-stage stratified cluster sampling was adopted in selecting 2,272 students as the sample from six tertiary institutions in South-South geopolitical zone of Nigeria. The students' ages ranged from 17-38 years (mean age=24 years; SD=6.2). A validated questionnaire was the instrument for the data collection. The results show that 2,160 students attested to their level of awareness while only 112 of them showed levels of unawareness of Nigeria women's mid-age morphologic expansion. The roles of diet psychological orientation and activity patterns in eight gains by Nigerian women at mid0age were substantially reported as the causative factors. It is expected therefore that health care provider in Nigeria would create an enabling environment that encourages the attainment and maintenance of women's mid-age healthy weight, healthful dietary patterns, and regular physical activity.

Keywords: Female undergraduate students, awareness level, mid-age, morphologic expansion, Nigerian female adults.

INTRODUCTION

Weight gain has become a great public health issue the world over. In spite of our ever-increasing knowledge of the health risks of overweight and obesity, people in both developed and developing countries are getting fatter. In the view of McArdle, Katch & Katch (1991) weight gain is brought about by unbalancing the body's energy balance in favour of a greater caloric intake. However, some overweight experiences may result from a person's muscular hypertrophy as a consequence of training and body conditioning. In Nigeria, much of weight gains is often noticed in mid-age women whose age bracket ranges between 40 years and old age (Salami, Uko-Aviomoh & Nwaba, 2006). Salami et al. (2006) asserted that Nigerian female adult population is experiencing an epidemic of mid-age spread, which they claimed is associated to the following factors, among others:

1. Lack of exercise
2. Diet basically based on carbohydrates, loaded with calories.
3. Increased patronage of junk foods.
4. Poverty
5. Family eating habits
6. Wrong meal allocation at the family level
7. Poor time allocation for eating (p.83)

Mid age morphologic expansion or spread appears to the uniformed to be a natural phenomenon whose occurrence tends to be inevitable among women. The outlined factors

ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 4 No. 1 January 2013

directly or indirectly implicate exercise and nutrition with some attendant psychological notation. That is why some individuals Iro, & Amasiatu (2007) sometimes, view it simply as problem of willful misconduct – eating too much and exercising too little. Nonetheless, scientific evidence reveals that as from 30 years of age certain physiological factors start to impact adversely on the human body organs and systems resulting in their declined functionality, such as decreased muscular regeneration (Agwubike, 2005). Kelly (1997) refers to mid-age spread as "central obesity" based on the fact that it tends to develop at the truck and pelvic regions with age and manifests most in women at their mid-age (i.e. central age). Jarvis (1996) refers to 40-60 years as middle adult age to which most Nigerian women that develop central obesity or mid-age morphologic expansion belong.

Weight-loss doctors, weight watchers, top exercise experts, nutritionists, spa chefs and many other people that are concerned with human weight gain – loss in contemporary societies have come to realize that human beings are entering an era in which individuals are recognizing that weight management is a health issue. According to Iro and Amasiatu (2007) many Nigerian women are concerned about their body weights and employ methods with varying degrees of propriety in the bid to tackle their problems. On this premise, there is a refocusing from weight loss alone, which often aimed at appearance, to weight management whose goals is achieving the best weight possible in the context of overall health. This is why women's mid-age spread should be regarded as a complex, multi factorial health problem of appetite regulation and energy metabolism (Thomas, 1995). It should be borne in mind that attaining mid age by women might not only vary from individual to individual but also depends on the longevity of individuals (Ekpon & Abass, 2008).

It is based on this backdrop that the present study sets off to investigate the awareness level of Nigerian female undergraduate students about mid-age spread among Nigerian women. This is with a view to obtaining information and knowledge base for instituting counseling, education and enlightenment campaign geared towards personnel behaviour modification and change that shift from inactive lifestyle to a more active and an enhanced productive lifestyle. This would be a habit build right from childhood through adulthood to old age.

Research Questions

The following research questions are raised to guide the study:

I. Is the students' awareness level of women's mid-age expansion/spread age-related?

II. What is the student awareness level about exercise and nutrition as factors/causes of women's mid-age morphologic expansion/spread?

III. What is the students' awareness level of the risks/implications of women's mid-age morphologic/spread?

IV. What is the students' awareness level of the measures to take in order to prevent or control women's mid-age morphologic expansion/spread?

HYPOTHESIS

The following hypothesis was formulated and tested.

1. The ages of the students would not significantly affect their levels of awareness of women's mid-age morphologic expansion/spread.

METHODOLOGY

Sample and Sampling Technique

A three-stage stratified cluster sampling was adopted in selecting 2,272 female undergraduate students from six tertiary institutions in south-south geographical zone of Nigeria. The selection also ensured equal representation of institutions that were Federal Government owned and the state and private owned ones. The students ages ranged from 17-38 years (mean age = 24 years, S.D = 6.2).

Instrumentation

The instrument used in data collection was a validated structured questionnaire termed Female Adults Mid-age Morphologic expansion Questionnaire (FAMMEQ) developed by the researchers. The first section of the questionnaire solicits for the demographic characteristics of the students (e.g. institutional identify, age, level, course of study, etc). The second section consists of items on causes/factors promoting female mid-age expansion, as well as the likely complications and the preventive/control measures.

Data Collection and Analysis

The researchers and three trained assistants collected the data directly from the respondents who participated in the study. Out of the total sample, 2,160 indicated awareness while 112 claimed to be unaware of women's mid-age spread, hence the statistical analysis was based on 2, 160. The data collected were subjected to both descriptive and non-parametric statistical (e.g. percentages and chi-square). The level of statistical significance was set at $p<0.05$.

RESULTS

The results are presented in tables 1-4 in line with the research questions and the hypothesis.

Table 1. Student's awareness level of women's mid-age morphologic expansion in relation to their ages, N = 2,272

Age Interval (Years)	*Awareness level*					
	Very Much Aware (VMA)	*Much Aware (MA)*	*Aware (A)*	*Total %*	*Not Aware (NA)*	*%*
<20	9 (44.0)	20 (35.2)	36 (20.6)	65 3.0	40 (5.2)	35.7
20-25	66 (197.6)	213 (157.5)	174 (92.5)	453 21.0	18 (23.2)	16.1
26-30	615 (480.3)	380 (385.5)	128 (224.8)	1,123 52.0	22 (56.4)	19.6
31-35	175 (171.1)	116 (136.7)	98 (80.1)	389 18.0	19 (20.1)	17.0
>35	88 (60)	32 (47.9)	10 (28.1)	130 60	13 (7.0)	11.6
Total %	963 42.9	761 33.5	446 19.6	2,160 100 95.1	112 4.9	100

Note: Figures in parentheses are the expected frequencies
Table $X^2 = 43.77$, Cal $X^2 = 601.63$
*Significant at 0.05 level

Table 1 shows that out of a sample of 2,272 only 112 (4.9%) respondents indicated that they were not aware of women's mid-age morphologic expansion while 2,160 (95.1%) of them reported that they were aware at varying degrees. As regards those that were aware, the

ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 4 No. 1 January 2013

greatest percentages (52%) of them were from the age bracket of 26 years – 30 years while the least (3.0% came from those less than 20 years old.

The hypothesis claiming that the age of the students would not significantly influence their level of awareness of women's mid –age morphologic expansion is rejected. This is based on the fact that chi-square analysis revealed that the calculated X2 of 601.63 is highly significantly higher than the table value of 43.77 at 0.05 levels.

Table 2. Student's level of awareness of causes of women's mid- age morphologic expansion N = 2, 160

Causative Factor	*Awareness Level*			
EXERCISE	*Much Aware (MA)*	*Aware (A)*	*Unaware (UA)*	*Much Unaware (MUA)*
Lack of exercise (physical activities)	302	734	778	346
House help	174 (8.0)	432 (20.0)	1296 (60.0)	258 (12.0)
Mean totals	238 (11)	583 (27)	1037 (48)	302 (1.6)
Mean Grand Totals	821 (38)		1339 (62)	
NUTRITION	*MA*	*A*	*UA*	*MUA*
Low level of nutrition education	818 (38.0)	1132 (52.4)	105 94.8)	105 (4.8)
High consumption of carbohydrate based Calories at the women's mid age	531 (24.6)	1333 (61.7)	265 (12.3)	31 (1.4)
Increased patronage of junk food	3.31 (15.3)	999 (46.3)	661 (30.6)	169 (7.8)
Family poor eating habits	99 (4.6)	709 (32.8)	1072 (49.6)	280 (13.0)
Wrong time allocation for eating	308 (14.3)	912 (42.2)	603 (27.9)	337 (15.6)
Poverty which lowers and limits	470 (21.8)	1178 (54.5)	469 (21.7)	44 (2.0)
Wrong meal allocation at the family level	235 (10.9)	1155 (53.5)	695 (32.1)	75 (3.5)
High carbohydrate build up from childhood	318 (14.8)	1435 (66.4)	317 (14.7)	89 (4.1)
After effects menopause	90 (4.2)	307 (14.2)	1176 (54.4)	587 (27.2)
Mean Total	356 (16.5)	1018 (47.1)	596 (27.6)	190 (8.8)
Grand Total	1374 (63.6)		786 (36.4)	

Note: Figures in parentheses are percentages.

Table 2 shows the students' revelation concerning their awareness levels of exercise and nutrition as the main causative factors of women's mid-age morphologic expansion. As regards exercise, only 38 percent of the respondents expressed being knowledgeable (11% much aware and 27% aware) of it as a causative factor while greater percent (62%) claimed to be ignorant of it (48% unaware and 14% much unaware) as the cause of women's mid-age morphologic expansion.

In terms of nutrition as the causative factor, 63.6% attested to their being aware of it as such (16.5% much aware and 47.1% aware) while 36.4% (27.6% unaware and 8.8% much unaware) indicated their ignorance of nutrition as a causative factor of women's mid-age morphologic expansion.

Table 3. Students' level of awareness of risks or implications of women's mid-age morphologic expansion

Risks/implications	*Much Aware (MA)*	*Aware (A)*	*Unaware (UA)*	*Much Unaware (MUA)*
Fat accumulation	540 (25.0)	1371 (63.5)	249 (11.5)	- 0
Obesity	698 (32.3)	967 (44.8)	473 (21.9)	22 (1.0)
Overweight	287 (13.3)	1403 (65.2)	352 (16.3)	113 (5.2)
Hip Expansion	1099 (50.9)	938 (43.1)	123 (5.7)	- (0)
Body (trunk) expansion (sideway)	1126 (52.1)	998 (46.2)	36 (1.7)	- (0)
Stomach (tummy) protrusion	661 (30.6)	999 (46.3)	331 (15.3)	169 (7.8)
Hypertension	519 (24.0)	579 (26.8)	784 (36.3)	278 (12.9)
Diabetes milletus	- (0)	244 (10.4)	1331 (61.6)	605 (28.0)
Stroke	174 (8.1)	340 (15.7)	965 (44.7)	68.1 (31.5)
Coronary artery disease (Heart disease)	235 (10.9)	245 (11.3)	724 (33.5)	956 (44.3)
High bone density	- (0)	159 (7.3)	861 (39.9)	1140 (52.8)
Mean total	485 (22.4)	750 (34.7)	566 (26.2)	360 (16.7)
Mean Grand total	1235 (57.1)		926 (42.9)	

Note: Figures in parentheses are percentages

ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 4 No. 1 January 2013

Table 3 shows that 57.1% of the respondents were aware in varying degrees by 22.4% being much aware and 34.7% being aware of the risks or implications of women's mid-age morphologic expansion. However, 42.9% of them (26.2% unaware and 16.7% much aware) indicated some levels of unawareness.

Table 4. Students' level of awareness of measures to prevent/control women's' mid-age morphologic expansion, N2, 160

Preventive/Control Measures	*Level of Awareness*			
	Much Aware	*Aware*	*Unaware*	*Much Unaware*
	(MA)	*(A)*	*(UA)*	*(UHA)*
Exercise strategy	26	903	788	443
	(1.2)	(41.8)	(36.5)	(20.5)
Nutritional strategy	391	1179	458	132
	(18.1)	(54.6)	(21.2)	(6.1)
Good Psychological Orientation	-	309	1440	410
	(0)	(14.3)	(66.7)	(19.0)
Education/Health Education	766	858	484	52
	(35.5)	(39.7)	(22.4)	(2.4)
Mean total	296	812	793	259
	(13.7)	(37.6)	(36.7)	(12.0)
Mean Grand Total	1108		1052	
	(51.3)		(48.7)	

Note: Figures in parentheses are percentages

In table 4, a total of 1,108 respondents representing 51.3% indicated some levels of awareness (13.7% much aware and 37.6% aware) while 1,052 (48.7%) reported being unaware (36.7% unaware and 12.0% much aware) of measures for preventing or controlling women's mid-age morphologic expansion. Specifically, more of the respondents (57.0% as against 43.0%) were unaware of the exercise strategies for preventing or controlling the mid-age spread. As regards of such prevention/control measures while only 27.3% of them were ignorant of the nutritional strategy. A greater percentage (85.7%) showed levels of unawareness of the psychological orientation as the preventive or control measure as against 14.3% that were aware. Using education as a prevention/control measures attracted 51.3% levels of awareness and 48.7% unawareness levels.

DISCUSSION

The results of the present study reveal that the undergraduate students' awareness level of women's mid-age morphologic expansion is greatly age related (Table 1). All the age

brackets attested to their knowledge at varying levels about the occurrence of mid-age morphologic expansion. This knowledge base is expected to better equip the female students with the right things to do in order to lead a more enjoyable productive lifestyle. This is because knowledge is power which could pave their ways to acquiring an enjoyable lifelong activity and nutrition patterns and habits.

One would have expected declined human functionality at mid-age to be associated with a corresponding decrease in food consumption (for caloric requirements). Regrettably, most Nigerian women of mid-age rather increase their rate of food consumption with decreased energy expenditure due to sedentary lifestyle that gradually overshadows their daily engagements. The resultant effect is excessive accumulation of fat in the depots, sometimes leading to obesity and or overweight. This agrees with Bricklin's (1995) assertion that as people age, they tend to expend less energy they decrease the number of calories they take in accordingly, they will gain weight.

It is customary in Nigeria, to ascribe women's fatness to "evidence of good living". This misconception fails to recognize fatness as a health problem. This is contrary to current western social values which suggest that a lean body is associated with (a) fitness (b) competitiveness (c) self-discipline and (d) attractiveness (Martin, 1995). Being too lean, however, predisposal the body to skeletal injury. Nonetheless what is sufficiently lean but still healthy in one person may be predisposing to injury in another. It should be noted that irregular disordered eating by mid-age women can increase dramatically their incidence of weight problem and osteoporosis, which increase greatly the risk of skeletal degeneration and injury. Women's muscular-skeletal increase or expansion depends upon interplay between available calcium, exercise and estrogen levels (Martin, 1995). Both exercise and estrogen stimulate bone mineralization. Incidentally, estrogen levels in an early menopausal women decrease which ought to bring about (1) decrease bone mass and (2) micro-architectural changes in bone which increase bone fragility and risk of fractures (Martin, 1995). According to Obeki (2007) human beings have anatomical and physiological variations that have significant effects on their metabolic, behavioural and physical activities. Such distinctions or similarities are traceable, in part, to the activities of the human genes and not the other hand, to environmental influence or modulations. Realistically, individual physiologic variations and training factors affect weight gain (McArdle, 1991). On this note Prentice (1997) revealed that the period of ages 18 and 40 is formative time when the human body reaches the peak of maturity and physiological functioning. It is the later part of and after this period that most Nigerian female adult-develop excessive weight due mainly to an imbalance between their energy gain/intake and expenditure. Energy intake is a function of food consumption while energy expenditure pertains to the levels of exercise engagements (Agwubike, 2005).

CONCLUSION AND RECOMMENDATIONS

The management approach to body weight gain-loss should therefore not only implicate exercise and nutrition but also genetics. Physiology, biochemistry, and the neurosciences, as well as environmental, psycho social and cultural dimensions.

There is need for increased recognition and support for research in genetics and molecular and cellular human biology to aid in understanding their causative implication to women's mid age morphologic expansion. Initiatives should be developed that will motivate more Nigerian women to become physically active. Such women should believe they can fit physical activity into their lives and think of it as an enjoyable way to spend time before they will make effort. To encourage activity, communities should consider developing innovative

ISSN-L: 2223-9553, ISSN: 2223-9944
Vol. 4 No. 1 January 2013

social-marketing campaign, safe walking paths and playgrounds and low-or no-cost recreation centres supporting a variety of physical activities. Efforts should be made for people to become a more visible advocate of the pleasures and health benefits of an active lifestyle, particularly to mid-age women and those in low socio-economic groups to boost their nutritional and quality and pattern.

REFERENCES

Agwubiuke, E. O. (2005). *Physiology of muscular activities: theory through question and answer approach.* Benin City: Osasu Publishers.

Bricklin, M. (1995). Introduction: What you gain with weight loss. In M. Bricklin & L. Konner (Eds.), *Prevention's Your Perfect Weight: The Diet-free weight M. Loss method developed by the world's leading health magazine.* New York: Rodale Press, Inc.

Ekpon, P.O. & Abass, A. (2008), Nutrition and Sports Performance. In F.O. Money (ed). *Essentials of Sport Science and Health Education,* (pp. 215-237). Benin City: Bobpeco Publisher.

Iro, P .C. E & Amasiatu, A. N. (2007). Physiological assessment of weight loss practices among middle – aged Nigerian women. *Journal of Human Kinetics, Health and Environmental Education.*

Jarvis, C. (1997). *Physical examination and health assessment* (2nd Ed.). Philadelphia: W. B. Saunders Company.

Kelly, O. C. (1997). Prevalence of overweight among children, adolescent and adults – United States, 1988 – 1994. *Morbidity and Mortality Weekly Report 46*, 102 – 106.

Martin, D. (1995). Appearances are deceiving: The female athlete triad. *International Amateur Athletic Federation Bulletin*, January. IAAF Regional Development Centre, Nairobi.

MCArdle, W. D., Katch, F. I. & Katch, V. L. (1991). *Exercise Physiology: Energy, Nutrition and Human Performance* (3rd Ed.). Philadelphia: Lea and Febiger.

Obeki, S. O. (2007). *Fat or thin: Facts and Counsels on weight loss and Weight gain*. Benin: Mindex press.

Prentice, W. E. (1997). *Fitness for college and Life* (5th Ed.). St. Louis: Mosby Company.

Pruitt, B. E., K. T. & Prothrow – Smith, D. (1997). *Health Skills for wellness*. New Jersey: Prentice Hall.

Salami, L. I., Uko –Aviomoh, E. E. & Nwabah, N. I. (2006). Mid age spread among Nigerian women. The role of nutrition and exercise. *Journal of Human Kinetics and Envirnmental Education*, (Special Edition), 80-92.

Thomas, P.S. (1995). *Weighting the Options: Criteria for evaluating weight management programes*. Washington, DC: National Academy Press.