Anthropology and Style of Life in Middle Age Women

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A B S T R A C T

The anthropometric pattern, demographics data, lifestyle factors and several aspects of morbidity were analyzed for 400 Cuban women ages 40–60 years. More than 85% of women were obese, being these in direct association with morphology typically androgens, more evident in the postmenopausal women. In these women observed less body mass index and overweight, in an equivalent way between pre and postmenopausal women. A moderate consumption of rice, was evidenced, pastas and vegetables, few candies and fatty, what points to or quite acceptable knowledge of the harmful effect of some foods, to weigh that the shadowy use of saturated fats and not saturated it was the most frequent thing. By multifactor approach it is possible to make relation between nutritional patterns, morphology and climacteric symptoms; Cuban women present a different frequencies from an other literature showing the risk of generalist this studies and health's actions.

Key words: menopause, body mass index, Cuban women, menopause symptoms, nutrition

Introduction

All women living beyond the age of fifty will experience a critical period that is the transition from the reproductive to the non-reproductive phase of life. The menopause (end of menstruation) is much more than a simple biological change. It represents the loss of reproductive capacity, the increased risk of chronic conditions and potential loss of fitness. Some have even argued the existence of a menopausal syndrome that is different from somatic and psychological symptoms and illnesses. Whether this is due to the changing hormonal status or to increas-

ing biological age or the social and cultural significance of the menopause is debated. We still have an incomplete understanding of the hormonal changes occurring in menopause, how they may vary in different populations, and how they may be influenced by exogenous factors, such as diet and the social and cultural context in which menopause occurs.

Most studies on menopause changes have been conducted on western women. While overall the pattern of hormonal changes are very similar in all women, several studies have indicated that absolute levels of endogenous sex hormones may differ considerably in different communities. For instance, Chinese and Japanese women have lower estrogen levels both pre and post menopause status[1,2]. The amount of body fat is a major determinant of estrogen levels in post-menopausal women[3,4]. Since after menopause the major source of estrogen derives from peripheral conversion of adrenal androgen precursors (androstenedione) to estrogen at the adipose tissue. High fat intakes have been associated with higher endogenous androgen or estrogen levels, whereas a vegetarian diet and/or high fiber intake is associated with lower estrogen and increased sex hormones binding globulin levels[5]. Cauley[6] reported that physical activity was inversely related to estrogen levels in post menopause women, other studies have indicated that cigarette smoking is associated with decreased estrogen activity and higher adrenal androgen levels in post menopause women[7]. In order to amplify and clarify some controversial aspects, the main objective of the present study is to report the situation of the transition period in Cuban women in relation with social and nutritional considerations.

Material and Methods

The sample includes 400 pre and postmenopausal women, born in Cuba and living in the city of Havana during, at least, the last 15 years. Ages ranged between 40 and 60 years. Data were obtained by the study 8 health basis centers named »medico de familia« which is part of National Health System. The original study includes Anthropometric patterns (taken according with International Biological Program recommendations)[8]: height (m), weight (kg), waist and hip perimeters (cm), skin folds (triceps, biceps, subscapular and suprailiac) (mm).

Body mass index was derived (weight (kg) / height^2 (m), and body composition was indirect assessed from skin folds[9]. A weekly nutritional inquiry was done to know alimentary habits, frequency of

TABLE 1
CLASSIFICATION OF BODY MASS INDEX, BODY COMPOSITION AND WAIST /HIP INDEX

BMI (Bray)[11]	BMI (Garrow)[12]	Body composition (Bray)[10]	Waist/hip index (Seidel)[13]
Deficit < 18.5	Deficit < 20	Low fat < 15	Low < 0.78
Low weight 18.5–19.9	Low weight 20–24.9	Thin 15–20.9	Intermd. 0.79–0.84
Good 20–24.9	Good 25–26.9	Good 21–24.9	High (risk) > 0.85
Lover weight 25–29.9	Overweight 25–30.9	Over %fat 25–30.9	
M. » » 30–34.9	Obesity > 30	Obesity > 30	
H » » 35–39.9			
Obesity 40–49,9			
Extreme obesity > 50			

meats, method of cooking, quantity and distribution of daily intake.

Information on smoking habits and alcohol use, social, economic and familial variables was obtained.

A structured questionnaire was used to determine such factors as reproductive history: menarche (retrospective method), number of births, breastfeeding, consumption of contraceptive hormones, miscarriages (natural and provoked) and age of menopause (status-quo method) and type of menopause (natural or surgical). In the population estimation of median age, at menopause women with surgical menopause were excluded.

Considerations for grouping women on BMI[11–13], body composition[10] and waist/ hip are shown in Table 1.

Data was processed using SPSS statistical package and to process the nutritional survey the Nutrix program was used.

Results

Table 2 presents some morphological and other body composition data of the Cuban women. Forty-three percent of the women were in the category of »over weight« and the median value is at the border of this category.

In terms of body composition, 35% of the total weight was fat in these Cuban women. According to Bray[10] classification 84% of women in study were in the obese.

Table 3 presents the study of menopause average. The mean age at natural menopause was approximately 49 years, with small differences depending on method of calculations and the percent of the women had under surgical menopause.

A strong presence of symptoms related with this transitional period was evident. In the sample, about 85% of women confirmed a change related with menopause transition with less quality of life. The symptoms were much more usual after the end of menstruation than before. Nevertheless, only three of these symptoms have a large number of affected women: vasomotor, depression and sexuality and vaginal dryness changes[15]. Table 4 presents percentage, the presence of each one in relation to menopause status. Depression was reported by 84% of women with natural menopause, and was the most common symptom reported.

Firstly, a structured questionnaire about nutritional habits of each woman was done. In Table 5 the results of this approach can be seen. Energy shows an acceptable level, but with a wide range of variation. Between maximum and minimum values, 2,900 kcal, gives evidence of a non-similar situation among the women studied. In relation with food habits, the categories show a good panorama of the situation. For instance, 21.4% of these

TABLE 2

SOMATIC AND BODY COMPOSITION VARIABLES IN CUBAN WOMEN BETWEEN 40–60 YEARS AND PREVELENCE OF OBESITY ACCORDING BRAY CLASSIFICATION (%)

Variable	X ± SD	Low (%)	Normal (%)	High (%)
Age	49.25 ± 8.08	–	–	–
Height	156.9 ± 5.83	–	–	–
Weight	62.7 ± 12.81	–	–	–
Waist/hip index	0.8 ± 0.12	–	–	–
BMI[11,12]	25.3 ± 4.80	17	39	44
Fat (%)[10]	35.2 ± 6.02	2	14	84

TABLE 3

AGE, TYPE OF MENOPAUSE AND PERCENTAGE OF WOMEN WITH MENOPAUSE SYMPTOMS

Age of menopause	X ± SD	Variable	%
Status-quo method	48.8 ± 2.02	Surgery incidence	10
Retrospective method	49.5 ± 2.30	Symptoms before menopause	71
Surgery	41.5 ± 1.00	Symptoms after menopause	84

TABLE 4

SYMPTOMS AFTER AND BEFORE MENOPAUSE AND ACCORDING TO TYPE OF MENOPAUSE (%)

Symptom	Natural menopause	Surgery menopause	Still with cycles
Depression	84	71	71
Vasomotor	79	61	59
Sexual and vaginal dryness	67	61	46
Total with symptom	84	72	71

TABLE 5

NUTRITION HABITS IN TERMS OF FREQUENCY OF INTAKE (%) AND ENERGY/DAY (KCAL)

Variable	None	Moderate	High
Fat	21.4	58.0	20.5
Rice	1.2	11.3	87.5
Potatoes	0.3	40.9	58.5
Roll/sugar	13.1	69.3	17.6
Fruits	3.8	50.9	45.5
Vegetables	6.5	55.5	38.0
Milk	20.5	60.5	19.0
Fish	18.1	20.2	1.7
Meat	40.0	52.3	7.7
Eggs	1.2	10.3	88.5
Alcohol	33.5	57.6	8.9
Coffee	12.2	21.4	66.4

Energy (kcal/day) = 2,010 ± 386;
Min.: 938; Max.: 3,864

women have no fat consumption (by cooking or addition), animal proteins were hardly represented and only the amount of egg prevents a large deficiency. The representation of milk and derivates was very low, more than 20% of Cuban women don't take it. Carbohydrates were the nu-trients with the largest representation in this pattern but a contradictory low ingestion of fruit and vegetables was evident (Cuba is a country with a high production of these). Alcohol consumption was present in 66.5% in the sample and usually with high alcohol gradation (sprits and rum). Coffee (more than 2 cups) 87.8% is usual if obtaining it is not easy. Smoking was presented in 58.9% of the women studied.

To know the relation between this type of nutrition and somatic characteristics, we decided to take a multifactor approach, this method reduces sources of variability. This type of analysis enables a less partial interpretation than other statistical methods. In this case, a principal components analysis was done.

Table 6 shows the results obtained from principal components. Four components have been take into consideration, with percentage values greater than 10%. The four components have explained the 60% of the total variability.

The first component (20% of total variance) was defined by the opposite value between good eating habits (number of

Variable	CP 1 (eating habits /morphology)	CP 2 (somatic changes)	CP 3 (fat ingestion)	CP 4 (somatic changes in menopause/habits)
E. value	1.8	1.4	1.2	1
Variance (%)	20.1	15.6	13.1	11.2
Weight variation	–8	–45	–5	71
BMI	–40	55	43	5
Waist/hip Index	–32	66	26	18
Smoking	29	–30	28	–10
Alcohol	5	–41	39	–11
Number meats	73	33	–7	22
Breakfast	67	37	–27	27
Potatoes, bread, etc.	–53	–5	–8	53
Rolls and cakes	32	–7	61	22
Fat	40	19	56	1
Protein (animal)	17	25	–23	–14

Values of variables contributions appears multiplied by 100

meals, breakfast) and morphology (BMI and W/H). Having or not having breakfast and a more rational distribution of energy intake determines the quantity of food. The usual pattern noticed in this population was an accumulation in the supply of energy and nutrients at the end of the day, when the metabolic request was down. Body fat distribution, plus thoracic (according to the value of W/H index) also show the relevance of previous comments.

The second one (15.6% of total variance) is a component clearly associated with somatic change in the women with menopause. Women with habitual obesity show less increase in weight in this transitional period as well as less modifications in body composition. Can previous fat amount be enough in the crisis of estrogen production? Obviously these results need more studies in other populations. Maybe the special morphology of adiposity in Cuban women is responsible in part to the given result. In this second component related with morphology of the women give another relationship between anthropometric traits and non-recommended habits: alcohol and tobacco. Women with drinking habits suffer more change in weight at menopause transition. For smokers, the situation is similar. We note that weight of depart are less in both cases with frequent drinking and tobacco consumption.

The third component involves importance of fat ingestion and somatic typology. In fact, BMI of women appears associated with direct fat intake and with indirect intake made by rolls and cakes. The last also have a lot of energy from sugar and other carbohydrates (13.1% of total variance).

The forth component with less importance, but also consistent, to explain the variability (11.2%) shows the relation be-

tween body weight changes in menopause and eating habits. Increase in weight (at the time of menopause) is associated with a great appetite for sugar and sweet foods. Depression, emotional crisis or real biological need, (this situation was refereed to earlier) may contribute to an increase in metabolic morbidity (diabetes).

Discussion

From a socio-cultural point of view we could speak of an evolution which is going through a more specific approach, that of »women«, which entails the acknowledgment of every single woman's singularity at a particular time, in a society and within an educational and economic context. The physical anthropological perspective, whose aim is not individuals but populations, in many analysis and interpretations has lead to many errors when assuming that what is good for a human group was universally good for all of them. This is evident especially in those approaches, which have linked our science with auxology, epidemiology and nutrition[1–5]. Some studies regarding the reproductive aging in women constitute a good example of what has been mentioned above. These works were started with the so-called »First world« women[19] and have resulted in valid conclusions applicable to the context in which the ontogenetic development has taken place. The end of menstruation, without mentioning the enormous amount of factors whith the different meanings that the reproductive transition imply, the bioanthropological characteristics of the group and of course the quality of life situation in which the biological history of these women occurs. The latest WHO report[14] and others[20] widely demonstrate the need to initiate studies on menopause and climacteric in populations and contexts different from the ones previously mentioned. The aim is to separate the initial approach from the

clinical framework. In this direction, the study presented on some of the characteristics of menopause in Cuba has proved to be of great interest for various reasons.

First, demonstrating special characteristics and defining a profile of symptoms that does not coincide with what is described, and from which a particular epidemiological pattern emerges. Data from previous literature suggests that vasomotor symptoms are the first one on the table of menopause alterations in menopause. This percentage differentiates the Cuban sample from other cited populations according to psychological symptoms. Percentages of 25 in European population[16] and about 10% in Japanese survey[17] show this divergence. Vaginal dryness and loss of libido also have a strong representation in the Cuban menopause change. Loss of libido affected only 5% in a Swedish study, in our study, percentage was more than 60%. These great differences can reflect not only genital or biological symptoms, but also environmental situation and social consideration of menopause women was determinant.

In the case of the Cuban women, the psychological symptoms are more important than the cardiovascular ones, which entail a different approach in the Health services now and in the near future. The general application of the HRT (hormon replacement therapy) more than efficient in the case of hot flashes and other vasomotor symptoms does not seem to be so useful in the Cuban environment. Adiposity, described among them, is likely to be an estrogenic source by enabling the scenting of androgens, which means a lower deficit after the decline of ovarian production. The HRT which is currently being discussed after the different works dealing with uterus cancer and cardiovascular morbidity[22] and besides, as with some conjugated estrogen preparations[23] the result was an increase in the risk of

cardiovascular diseases, »Ictus«, lung embolism, breast and endometrial cancer. Therefore, a moderate application among the women studied, considering their somatic profile, is recommended. On the contrary, we must take into account a predisposition to the development of metabolic dysfunction, with a high percentage of diabetes, obesity and hypertension, which in the case of women is more evident when they are middle-aged[24]. The evident connection between the feeding pattern and morphology has been repeatedly tested in thorough studies[25]. From this connection morbid risk situations in subjects can be generated. In the case of the current study they can also be widened to differences in the repercussions of the different ontogenetic phases of the individual subjects.

One of the most important factors related with biological changes in the human ontogeny is nutrition. Age at menarche appears to be profoundly related to nutritional status, in relation with menopause. Women with malnutrition had menopause approximately 4 years earlier compared to women who were not malnourished and also weight and height and body composition may influence menopause age[3,18]. In this sense it's very interesting to note the nutritional situation of Cuba and what the most important items of it are. Nutritional habits are related to morphysiological characters and could be influencing, by this way, the climacteric.

The characteristics of Cuban eating habits, after taking a multifactor approach to the study, that is, trying to reduce the factors that explain the variability observed, has shown, at least in part, paradox situations. The greater amount of intake throughout the day implies a lower BMI. The lowest increase in weight during the menopause transition occurs among those women who were previously overweight and despite a low intake of

fat, this is the trait most associated to the elevated value of the BMI. The median waist to hip ratio in addition to the results of obesity and body composition recommended promotion of a new study on the life-style and nutrition in order to clarify this contradictory situation just after the end of a big economical crisis named »periodo especial« in the beginning of the 90's. First menopause status was used as an indication of response to this situation. Literature shows that reproductive period must be shorter in restrictive situations[14].

The socio-economic situation is a referential mark as sustained deficiency situations (special period) in the bosom of a population could affect in genesis of »below minimum performance« with which the reestablishment of some foods, most of which are sedentary in nature / occupational descent and a change towards sugared products and/or rich in endorphin like chocolate, which resolve the metabolic and psychological crisis in the women, could be causes of the situation found in the overweight and obese Cuban women. This deficiency mark that is, in part, due to being resolved by women in their day to day, as well as in retirement, which in Cuba is at age 55 for women, the relative facility to separate from the spouse and the loss of a role not written such as reproduction, can be causes of the elevated percentage of symptomatology in the period of menopausal transition and especially of the large quantity of depressive states that affect more than 80% with the corresponding decrease in their quality of life.

From all that is mentioned above we conclude:
• The medical-social diagnosis of action should be based on the knowledge of the biological situation. The measures and therapeutic decisions and/or recommendations should be based biological processes.

- Despite the universality of biological events, such as the female climacteric, the »biological diagnosis« should be done individually for each population. In light of this we must consider »women« vs. »woman«.

- The previous somatic characteristics and at the moment of the menopausal transition have effects on the age and symptoms of the menopause. Also there is a link between what changes in the climacteric at the somatic level and the bodily composition and the situation prior to these traits.

- The age of natural menopause although less distinctive and less used in inter- and intra-population comparisons, could

- be an exponent of the stress, nutritional, and quality of life situations at a given time.

- It is considered necessary to constitute multidisciplinary teams to optimize risk situations and available resources. In this sense the application of HRT in the Cuban context shouldn't be considered indispensable and a possible application should be studied individually.

The variation in fat intake is the most distinct factor of those considered in the evaluation of Cuban eating patterns and its relation with the morphology in middle-aged women.

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ANTROPOLOGIJA I NAČIN ŽIVOTA ŽENA SREDNJIH GODINA

S A Ž E T A K

Antropometrijski i demografski podaci, čimbenici načina života i neki aspekti morbiditeta analizirani su kod 400 žena s Kube, dobi od 40 do 60 godina. Više od 85% žena bile su pretile, što je u direktnoj vezi s morfološki tipičnim adrogenima, što je očituje u postmenopauzalnih žena. U ovih žena zamijećen je niži BMI i prekomjerna težina, na podjednaki način između prije i poslijemenopauzalnih žena. Zabilježena je umjerena potrošnja riže, tjestenine, povrća, malo slatkiša i masnoća, što ukazuje na prilično prihvatljivu razinu znanja o štetnim učincima nekih namirnica, o vaganju i štedljivoj uporabi zasićenih i nezasićenih masnoća bio je najčešći nalaz. Multifaktorijalnim pristupom moguće je napraviti odnos između uzoraka prehrane, morfologije i simptoma menopauze. Tu treba naglasiti da su Kubanke pokazale drugačiju učestalost od one koju nalazimo u literaturi, što pokazuje rizik uopćavanja nalaza ovakvih studija te uopćavanja zdravstvenih mjera koje treba poduzeti.