



# Body image attitude and physical activity level of premenopausal and perimenopausal women in Nigeria

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## ABSTRACT

**Background:** Body image is a multidimensional construct which comprises of perceptual - body size estimation and appearance as well as attitudinal - relating to feelings and attitudes toward one's own body. For menopausal women, weight gain is a common occurrence, and these body composition changes may influence how a woman feels about the way her body looks. Concerns about body image in menopausal women may sometimes lead to dissatisfaction with their bodies. In addition, the great pressure for a perfect body may influence either positively or negatively women's involvement in physical activity (PA). **Objectives:** This study assessed body image attitude of a sample of premenopausal and perimenopausal women in Nigeria and their PA level. **Participants and Methods:** The multidimensional body-self relations questionnaire-appearance scale (MBSRQ-AS) was used to evaluate appearance satisfaction, body image attitudes, and satisfaction while the International PA questionnaire was used to evaluate PA level. Data were summarized using descriptive statistics and analyzed using Chi-square while significance level was set at 0.05. **Results:** Participants were 392 women aged  $42.5 \pm 6.0$  years and all reported positive body image attitude. Premenopausal women reported higher scores in most domains of the MBSRQ-AS while perimenopausal women reported higher scores on the overweight preoccupation and self-classified weight. Majority reported moderate to high PA level. Significant associations were observed between PA level and scores on appearance evaluation ( $P = 0.02$ ) and overweight preoccupation ( $P = 0.01$ ) for premenopausal women while perimenopausal women reported significant association between PA level and scores for appearance orientation ( $P = 0.00$ ), overweight preoccupation ( $P = 0.00$ ), and self-classified weight ( $P = 0.01$ ). **Conclusions:** Body image attitude appeared to have had a positive impact on PA level. It may be imperative for women in the menopausal transition to maintain a physically active lifestyle to enhance a positive body image.

**KEY WORDS:** Body image, physical activity, menopausal women, overweight preoccupation

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## INTRODUCTION

Body image is a multidimensional construct that encompasses self-perceptions and attitudes [1]. It includes perceptual - body size estimation, cognitive - thoughts and beliefs about the body, affective - feelings about one's own body, e.g., body dissatisfaction and behavioral components - body checking [2]. "Body attitudes" involve evaluation effect - evaluative thoughts and beliefs about one's appearance, discrete emotional body experiences and investment - the importance of appearance and the behaviors intended to keep or improve it [3].

Women in midlife are in a stage of transition consequent to hormonal changes and chronological aging. During this period, weight gain is a common occurrence coupled with the accumulation of fat tissues [4]. Attitudes toward weight gain and obesity differ in different nations particularly in the developed and developing world. The general Western ideal is

for a thin female while plumper women are preferred in most developing nations [5]. In most culture in the Nigerian setting, weight gain is perceived as a sign of good living or prosperity [6]. For women in the menopausal transition, body composition changes may influence how a woman feels about the way her body looks. In general, women have been reported to be more dissatisfied about their appearance than men [7] thus concerns about body image in menopausal women sometimes lead to dissatisfaction with their bodies. The further a woman views herself from ideal size; the more likely body dissatisfaction will be built [8], and some degree of body dissatisfaction could lead to low self-esteem. The great pressure for a perfect body may serve as a reason for body image concerns among women and may influence women's involvement in physical activity (PA). On the other hand for some women, body image may be a constraint that prevents participation or limits their enjoyment of a particular activity. However, for other women body image may serve as a motivator to engage in PA [9]. Most women

in Nigeria do not have a regular schedule of PA, particularly leisure-time PA [10]. Inadequate PA can lead to weight gain and obesity, and when related to body image can produce other psychological barriers and lack of confidence [11] in the individual. It is, therefore, imperative to examine the position of midlife women as regards body image attitude and their PA level. The aim of this study was to assess the body image attitude of a sample of premenopausal and perimenopausal women in Nigeria and their PA level. Would there be any association between their body image attitude and their PA levels? The major hypothesis proposed in the null form was: There would be no significant association between body image attitude and PA level of premenopausal and perimenopausal women in Nigeria.

## PARTICIPANTS AND METHODS

### Participants

Ethical approval for the study was obtained from the University of Ibadan and University College Hospital (UI/UCH) research ethics committee before the commencement of the study. Participants were premenopausal and perimenopausal women aged 35-55 years in Ibadan North Local Government Area of Oyo State. They were workers in government parastatals within the Ibadan Metropolis. In these places, the researcher approached women who appeared to be in the desired study age-group. After explaining the purpose and rationale behind the study, interested participants were consecutively recruited after obtaining their informed consent. They were classified as premenopausal or perimenopausal and included in the study following the method of Daley *et al.* [12]. This was done as follows: A question in the socio-demographic portion of the questionnaire inquired about menstrual cycle status of would-be participants by asking them to choose one of three options - whether their menses were: (i) regular, (ii) irregular, or (iii) no longer present [12]. They were also asked to indicate the day, month, and year of their last menses to ensure they still had their menstrual cycles. Women who indicated “regular or irregular” as their menstrual cycle status were identified as premenopausal and perimenopausal women, respectively, who were eligible to participate in the study. They were purposively selected after giving their informed consent for participation. Women who indicated no “longer present” for a period of at least 12-month were regarded as postmenopausal and were excluded from the study. The research design was a cross-sectional survey.

### Instruments

1. A self-developed 10-item semi-structured bio-data form [13] was used to retrieve information pertaining to socio-demographics, health status, menstrual cycle status, and last menstruation date from participants.
2. The multidimensional body-self relations questionnaire - appearance scale (MBSRQ-AS) developed by Cash [14], was used to obtain information on the body image attitude in premenopausal and perimenopausal women. The 34-item scale evaluated appearance satisfaction, body image attitudes, and satisfaction. It is composed of five

subscales: Appearance evaluation, appearance orientation, body areas satisfaction scale, overweight preoccupation, and self-classified weight. The items on this questionnaire were rated on a five-point Likert-type scale. Some items evaluated agreement while others assessed frequency or satisfaction. The five subscales of MBSRQ - AS generally have good psychometric properties: Internal consistencies ranged from 0.7 to 0.89 and 1-month test-retest reliability ranges from 0.74 to 0.91. The Cronbach's alpha coefficients of the subscales ranged from 0.77 to 0.88 [14]. Since the MBSRQ has not been in use in the Nigerian population previous to this study, a pilot study was conducted on 25 premenopausal and perimenopausal participants to test the suitability and feasibility of the MBSRQ-AS in terms of length, clarity of question formulations and terms, concepts, and content. A Cronbach's alpha of 0.78 was obtained, therefore, indicating a reliability of the use of MBSRQ in the Nigerian premenopausal and perimenopausal women population. This revealed the questionnaire's agreement with Nigerian premenopausal and perimenopausal women and its cultural validity in the Nigerian women populace. The overall score of each of the subscales of the MBSRQ-AS is 5. Participants with scores between 1 and 2.5 were rated as being less satisfied with their body image while participants with scores between 2.6 and 5 were rated as being more satisfied with their body image.

3. The International PA questionnaire, (IPAQ) [15]: The IPAQ short form (7-items) was used to assess PA undertaken across four domains including: Leisure-time PA, domestic and gardening (yard) activities, work-related PA, transport-related PA. The IPAQ short form asks about three specific types of activity undertaken in the four domains. The specific types of activities assessed are walking, moderate-intensity activities, and vigorous-intensity activities [15]. IPAQ is a generic scale and has a reliability of 0.80 and criterion validity of 0.30 [16]. The items in the IPAQ short form were structured to provide separate scores on walking, moderate-intensity, and vigorous-intensity activity. Computation of the total score for the short form requires the summation of the duration (in minutes) and frequency (days) of walking, moderate-intensity, and vigorous-intensity activities. Domain specific estimates cannot be estimated. Scores were expressed in metabolic equivalent (MET) - min/week. PA level was categorized into: Vigorous with a minimum of 1500 MET-min/week, moderate with at least 600 MET-min/week and low if activity was lower than 600 MET-min/week. The sum of the MET intensities was then calculated to estimate total PA in MET-min/week [15]. Data were analyzed using descriptives while Chi-square and analyses of variance were used to find associations between variables.

## RESULTS

### Socio-demographic Characteristics of Participants

A total of 450 questionnaires were distributed by hand to would-be participants, 392 were returned, yielding a response rate of 87.1%. Participants' mean age was  $42.5 \pm 6.0$  years with

a modal age group of 35-39 years, and they were mostly of the Yoruba tribe. Most participants were married 309 (78.8%), had tertiary education 372 (94.9%), and 135 (34.4%) were high-income earners (Table 1). In addition, 200 (51.0%) perceived their health status to be excellent.

### Body Image Attitude and Menopausal Status of Participants

Table 2 presents mean and 50<sup>th</sup> percentile scores of the participants in the five domains of the MBRSQ-AS - appearance evaluation, appearance orientation, body areas satisfaction, overweight preoccupation, and self-classified weight. It was observed that all the participants irrespective of their menopausal category were mostly positive and satisfied with their body as they all had scores well above 2.5. Using an independent sample *t*-test, the five body image subscales

**Table 1: Socio-demographic profile of premenopausal and perimenopausal women in the study (N=392)**

Variables	n	%
Age group		
35-39	162	41.4
40-49	160	40.9
50-55	69	17.7
Marital status		
Married	309	78.8
Not married	83	21.2
Highest educational level		
Primary/secondary	20	5.1
Tertiary	372	94.9
Occupation		
Employed	386	98.5
Unemployed	6	1.5
Personal income		
Low	81	20.7
Middle	99	25.3
Moderate	77	19.6
High	135	34.4
Tribe		
Yoruba	311	79.3
Igbo	42	10.7
Hausa	6	1.5
Others	33	8.4

N: Total number of participants in the study, n: Frequency of occurrence of each variable, %: Percentage occurrence

**Table 2: Body image attitude and menopausal status of participants**

Body image Variable	Menopausal status				P
	Premenopause (n=237)		Perimenopause (n=155)		
	Mean±SD	Median	Mean±SD	Median	
Appearance evaluation	3.42±0.42	3.4	3.29±0.49	3.3	0.0039
Appearance orientation	3.58±0.38	3.6	3.45±0.48	3.4	0.0042
Body area satisfaction scale	4.23±0.62	4.3	3.96±0.75	4.0	0.0001
Overweight preoccupation	3.05±0.74	3.0	3.17±0.90	3.0	0.1650
Self-classified weight	3.21±0.49	3.0	3.33±0.70	3.5	0.0627

SD: Standard deviation, P: Probability

(appearance evaluation, appearance orientation, body areas satisfaction, overweight preoccupation, and self-classified weight) in the premenopausal and postmenopausal women were compared. Significant differences existed in domains of appearance evaluation (*P* = 0.004), appearance orientation (*P* = 0.04), and body areas satisfaction (*P* = 0.00) while no significant differences were observed in overweight preoccupation and self-classified weight (*P* > 0.05). In addition, premenopausal women had higher median scores in appearance evaluation, appearance orientation, and body areas satisfaction compared to the perimenopausal women.

### PA Level of Participants and Body Image Attitude

Table 3 shows an association between PA level of participants and overweight preoccupation. The result here showed that participants with higher overweight preoccupation engaged in higher PA. An assessment of the association between body image attitude and PA level of participants in Table 4 showed that a significant association existed between PA level and appearance evaluation (*P* = 0.02) as well as overweight preoccupation (*P* = 0.01) of premenopausal participants while for perimenopausal women, significant association was observed between PA level and appearance orientation (*P* = 0.00), overweight preoccupation (*P* = 0.00), and self-classified weight (*P* = 0.01).

## DISCUSSION

### Socio-demographic Characteristics of Participants

This study investigated body image attitude in relation to PA level of premenopausal and postmenopausal women in Nigeria.

**Table 3: Overweight preoccupation versus physical activity level of participants**

Level	n	Physical activity		
		Mean±SD	F	P
Low	113	2.84±0.77	10.62	0.000
Moderate	139	3.10±0.82		
High	140	3.30±0.78		

F=Fisher's test statistic, SD: Standard deviation

**Table 4: Association between body image attitude and physical activity level of participants**

Body image Variable	PA level	Menopausal status			
		Premenopause		Perimenopause	
		Mean±SD	P	Mean±SD	P
Appearance evaluation	Low	3.33±0.42		3.35±0.44	
	Mod-high	3.46±0.40	0.02	3.27±0.51	0.34
Appearance orientation	Low	3.51±0.40		3.68±0.50	
	Mod-high	3.60±0.37	0.09	3.37±0.45	0.00
Body area satisfaction scale	Low	4.28±0.60		4.08±0.82	
	Mod-high	4.21±0.63	0.39	3.91±0.72	0.24
Overweight preoccupation	Low	2.85±0.71		2.83±0.89	
	Mod-high	3.14±0.75	0.01	3.29±0.88	0.00
Self-classified weight	Low	3.17±0.50		3.09±0.88	
	Mod-high	3.23±0.49	0.47	3.41±0.62	0.01

PA: Physical activity, SD: Standard deviation, P: Probability

The majority of the women were in the premenopausal category and were mostly high-income earners.

### Body Image Attitude of Participants

From this study, it is observed that both premenopausal and perimenopausal women had a positive body image attitude. However, it was notable that premenopausal women had higher scores in appearance evaluation and appearance orientation and were more satisfied with certain areas of their bodies than their perimenopausal counterparts. This is in agreement with [17] who reported that women who were premenopausal were more positive about their appearance than their obviously older counterparts in the perimenopausal category. According to these researchers, it appeared that being menopausal lowered ratings on measures related to attractiveness and the way women felt about the way they looked. The results of this study also revealed that being menopausal have an effect on the feelings of physical attractiveness and satisfaction with one's looks. While both categories of women felt positive about their appearance, premenopausal women felt more positive and satisfied with their looks and appearance than perimenopausal women. In essence, both premenopausal and perimenopausal women place attention on their appearance. Premenopausal women, however, expended much more efforts in "looking good" and engaged in extensive grooming behaviors than their perimenopausal counterparts as seen in scores on the appearance orientation domain. Findings from this study also suggest that being menopausal has an influence on the level of satisfaction with discrete aspects of one's appearance. Premenopausal women had a higher level of satisfaction with the size and appearance of several body areas than perimenopausal women.

Perimenopausal women were more preoccupied with their weights than their premenopausal counterparts. As the results suggest, perimenopausal women are very conscious of even small changes in their weight and majority of them are either on a weight loss diet or have tried losing weight by fasting or going on crash diets. Perimenopausal women perceived themselves to be of a higher weight status than their premenopausal counterparts and thus, the majority of them labeled themselves as being overweight. This is probably because of the changes in weight, body composition, and fat distribution experienced by women during the menopausal transition [4]. This could have contributed to lower scores on domains of appearance evaluation, appearance orientation and body areas satisfaction compared to premenopausal women in this study. This finding is supported by Yin and Seng [18] who reported that weight status affects an individual's body image perception because body dissatisfaction was found to increase with increase in body mass index.

### PA Level of Participants

In this study, pre and perimenopausal women reported moderate to high PA level. This is in agreement with a study conducted by Ogwumike *et al.* [19] in which about three-quarters of the menopausal women reported moderate to high PA level while others reported low PA level. It was found from this study that

perimenopausal women have a more physically active lifestyle than premenopausal women. This contradicts the common finding that PA levels decrease with age [17,20].

However, findings from this study are in agreement with a study by Curtis *et al.* [21] who reported that middle-aged women (35-55) showed the greatest increase in PA participation compared to women of both younger and older age groups over 7 years in a longitudinal study. According to Moilanen *et al.* [22] perimenopausal women increased their PA (28%) during an 8-year follow-up period slightly more often than premenopausal women (18%) even though the differences were close to being significant ( $P = 0.070$ ). From their study, it seems that women in menopausal transition changed their behavior in another direction. Increased motivation for lifestyle modification during menopausal transition could explain this increasing PA. This is also true in this study. In addition, more than three-quarters of the perimenopausal women (88.4%) had their tertiary education making them have a better knowledge of the benefits of exercise and the importance of living a physically active lifestyle. The majority of them being health personnel were also aware of the positive effects of PA on menopausal symptoms [23,24] even though there was no significant association found between PA and menopausal status among participants in this study.

### Perceived Weight Status and PA Level of Participants

In this study, a significant association was observed between perceived weight status of the participants and their PA level. The average scores for the self-classified weight domain reported by the women increased as their level of PA increased. This implied that women who perceived themselves as being overweight or obese probably participated in more PA as they reported moderate to high PA level while women who perceived their weight status as being normal (neither overweight nor obese) reported low PA level. This finding is in agreement with the result of a study conducted by Jewson *et al.* [25] in which overweight women actively engaged in exercise and remained physically active to lose weight. Thurston *et al.* [26] reported that exercise and PA can help in controlling weight gain, and so it is not surprising that these women increased their PA level probably to shed weight and improve their overall physical appearance.

This study also revealed that women who were preoccupied with their weight and were conscious of small changes in weight either went on crash diets or increased their PA level in a bid to lose the weight. This contradicts findings from a study by Strickland, [27] in which there was no significant association found between overweight preoccupation and PA of participants.

### Associations between Body Image Attitude and PA Level of Participants

Significant associations were observed between appearance evaluation and overweight preoccupation of premenopausal women and their corresponding PA levels. There was also a significant association between appearance orientation,

overweight preoccupation and perceived weight status and PA level in perimenopausal women. For perimenopausal women, the importance they placed on their looks is probably a motivator for participating in PA and the desire to lose excess weight was probably a strong motivator for increasing their PA level. This finding is similar to that of Jewson *et al.* [25]. Even though the average scores of premenopausal women on the overweight preoccupation domain were low compared to their perimenopausal counterparts, overall, it appeared that the body image perception of premenopausal women was a strong motivating factor for increasing their PA level. All participants in this study irrespective of their menopausal status regarded maintaining a physically active lifestyle as beneficial to their overall appearance and body image satisfaction. It is noteworthy however that some limitations in this study cannot be overlooked. First, the use of the short IPAQ for evaluating PA level of participants did not allow for identification of the specific domain where most daily PA was carried out. This instrument only allowed for a gross estimation of PA level in the four domains. Second, the likelihood of a potential bias of self-reported information cannot be overruled in terms of the actuality of the reported PA level of participants in this study, more so as it is a recall instrument. Therefore, the findings in this study particularly being a cross-sectional survey may not necessarily have indicated causality in all the variables studied.

## CONCLUSION

Body image attitudes of the premenopausal and perimenopausal women in this study seemed to have had a positive impact on their PA level. The moderate to high PA level of premenopausal and perimenopausal women in this study implies that it may be imperative for women in the menopausal transition to maintain a physically active lifestyle in order to have a positive body image.

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