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# Health-related and socio-demographic correlates of physical activity level amongst urban menopausal women in Nigeria

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ABSTRACT

*Objectives:* To investigate the physical activity (PA) level of Nigerian women aged 40–60 years and examine possible association between the PA level and some health-related and socio-demographic variables.
*Methods:* This is a cross-sectional study of 547 women in which a purposive sampling method was used to recruit participants in urban centers of three states from three geopolitical zones in Nigeria. The International Physical Activity Questionnaire (IPAQ)-short form, was used to assess PA level. A self-administered 13-item semi-structured questionnaire was used to obtain health-related (menopausal status, perceived health status, health problems, menopausal symptoms) and socio-demographic (age, marital status, educational level, occupation, personal income) information from participants. Chi-square and logistic-regression analysis were used to assess association between PA level and these variables.
*Results:* The mean age of participants was $49.21 \pm 5.2$ years, comprising 184 (33.6%) premenopausal, 129 (23.6%) perimenopausal and 234 (42.8%) postmenopausal women. Most of the women in the three menopausal groups reported moderate PA level. No significant association was observed between PA level and menopausal status ($P = 0.348$), health problems ($P = 0.079$) or any of the menopausal symptoms and age-group ($P = 0.381$) of the women. PA level had a direct significant association with perceived health status ($P = 0.001$) and educational level ($P = 0.000$).
*Conclusion:* Menopausal women in Nigeria reported a moderate PA level. Self-perception of good health, having secondary/post-secondary education, were directly associated with not being of a low PA level.


## 1. Introduction

Women undergoing the menopause transition may be faced with a number of changes in their body. These include symptoms attributed to variation in hormonal profile such as: sleeplessness, irritability, mood swings, depression and anxiety disorders [1]. Physical activity has been proposed, and is being advocated as an intervention for preventing or attenuating some of these menopause-related health problems [2]. In African societies, in spite of the knowledge and awareness of benefits of PA and exercise, men and women have different patterns of PA. Men are more likely than women to engage in regular PA [3] while women are more likely to be involved in household chores and activities around child rearing [4]. Globally, recent advances in women's health are geared toward preventative and health promotion rather than management of disease conditions. In the sub-Saharan Africa and in Nigeria in particular, much emphasis is still being placed on maternal and child health rather than menopausal women health. This however does not imply that menopausal women in this part of the world have fewer problems associated with menopause compared with others.

According to the International Menopause Society (IMS), menopausal women are usually considered in three phases of life which include: the premenopause stage – this refer to the whole of the reproductive period prior to the menopause; the peri-menopause refer to the period immediately prior to the menopause when the clinical features of approaching menopause commence and the first year after menopause while the postmenopause phase is the period dating from the final menstrual period. Although a number of studies have recently been conducted on menopausal women in Nigeria [5,6,7,8,9] few have focused on menopausal women and PA [10,11]. This study was therefore aimed at investigating the PA level of menopausal women in Nigeria with a view to examining if any possible association would exist between their PA level and some health-related and socio-demographic variables.

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## 2. Methods

### 2.1. Participants and procedure

The participants were women aged 40–60 years who were workers in schools, private businesses and government secretariats. They all gave written informed consent to participate in the study. A cross sectional survey was conducted from March to July 2011 in urban centers in Oyo, Borno and Zamfara states [3 geopolitical zones] of Nigeria. A purposive sampling technique was employed in the study such that women who appeared to be of middle-age were approached individually by the researchers or the research assistants. After explanation of the purpose of the study, those who gave their informed consent to participate were given the questionnaires to fill. Ethical approval was obtained from the University of Ibadan/University College Hospital Research Ethics Committee.

### 2.2. Measures

A self-developed, 13-item semi-structured questionnaire in English language was used to obtain socio-demographic and health-related information from participants. The socio-demographic variables included age, marital status, educational level, occupation and personal income. The health-related variables were menopausal status of participants, perceived health status, health problems and menopausal symptoms. Menopausal status was determined on the basis of participants' response to the item-statement- 'indicate your menstrual cycle pattern' (MCP) which had three options: regular, irregular and no longer present. Those who had regular MCP were allocated to the premenopause group, those with irregular MCP into the perimenopause group, while those with the response 'no longer present' were allocated into the postmenopause group. Occupation was classified as 'government paid' for those employed by the Federal Government of Nigeria, 'self-employed' for those with personal businesses, and 'private paid' for workers in either private firms or companies. Personal income was classified as low, middle, moderate, and high in accordance with the former minimum wage-6500 naira per month (about 41 US dollars) stratification of the Federal Government of Nigeria. Participants were asked to rate their perceived health status on a 4 item-scale including excellent, good, fair and poor. Question on health problem was in an open ended format in which respondents were asked to state their specific health problems. These were afterward coded for the purpose of analysis. As regards menopausal symptoms, it was inquired if participants sometimes experienced sleeplessness, hot flashes, musculoskeletal pain, night sweats, depressive, and or anxiety symptoms or none at all. Each menopausal symptom was rated with 'yes' or 'no' response options and participants could indicate as many symptoms as possible that they experienced.

The International Physical Activity Questionnaire (IPAQ) short form by Pate et al. [12], in English language was used to assess PA in terms of energy requirements defined in metabolic equivalent of tasks per minutes (MET-min). It has 7-items with four domains, including: leisure time activity, domestic and gardening activity, work related and transport related activity. PA was categorized into: vigorous with a minimum of 1500 MET-min/wk, moderate with at least, 600 MET-min/wk and low if activity was lower than 600 MET-min/wk. PA is computed by multiplying the number of minutes and frequency of days by a specific code for each activity that represents the metabolic equivalent (MET) value of the activity [12] which includes duration in minutes and frequency in days of walking, moderate and vigorous intensity activities. The sum of MET intensities was then calculated to estimate total PA in METS-min/week.

### 2.3. Statistical analysis

Data obtained were coded and analyzed using the statistical package STATA version 10. For the purpose of analysis and in order to compare the menopausal groups, age group was dichotomized into 40–50 and 51–60 years. Marital status into married and not married, educational level into primary and secondary/postsecondary, occupation into non-government paid and government paid, while personal income was dichotomized into low and middle-high income groups. For physical activity level, participants with total PA less than 600 METS-min/wk were classified as low PA level group, while those greater than 600 MET-min/wk and up to 1500 MET-min/wk were classified into moderate + high PA level group, respectively. This grouping was done because there were some cells within the menopausal groups in which frequencies of occurrence of certain variables were nil, so Chi-square analysis would not have been possible without broader categorizations. Summarization of data was done using descriptive statistics of means ± standard deviation, frequencies and percentages. Chi-square and logistic regression analysis were used to access associations between PA level, health-related and socio-demographic variables of participants. $P$ was set at <0.05.

## 3. Results

Out of the 720 questionnaires distributed by hand, 547 were properly and completely filled-a response rate of 76%. These questionnaires were then coded and analyzed. Participants were 184 (33.6%) premenopausal, 129 (23.6%) perimenopausal and 234 (42.8%) postmenopausal women who were of mean age 49.21 ± 5.2 years (95% CI 48.78–49.66). The median age at normal menopause for the postmenopausal women was 49.0 (95% CI 47.51–48.53). They were mostly married (89%), with secondary/postsecondary education (90.1%) and government employed (88.7%). Participants in the postmenopausal group were significantly older than those in the premenopause and perimenopausal groups ($P = 0.00$) and there were significant differences between those who were married and those who were not married ($P = 0.01$). However, no statistical differences existed amongst the menopausal groups as regards educational level, occupation and personal income (Table 1). Nearly all the participants in our study (90.1%) irrespective of their menopausal status perceived their health status as excellent or good. More premenopausal women (27.8%) perceived their health status as excellent compared to the perimenopausal (17.8%) and postmenopausal women (21.0%). Majority of the respondents (73.9%) reported no health problem. Others reported musculoskeletal pain, hypertension, diabetes and malaria fever. In the postmenopausal group, musculoskeletal pain (13.7%) was the most reported health problem closely followed by hypertension (8.1%). This is as shown in Table 2.

### 3.1. Physical activity level of the menopausal women in the study

About three quarters of the respondents 428 (78.2%) reported moderate and high PA level while 119 (21.8%) reported low PA level. The postmenopausal women reported more of low PA than the premenopausal group (Fig. 1). In Table 3, Chi-square analysis was used to test association of socio-demographic variables of the menopausal women with their PA level as categorized into low and moderate + high. Table 4 shows the logistic regression analysis of the socio-demographic and health-related variables; marital status [OR 2.33; 95% C.I, 1.32–4.12], educational level [OR 7.44, 95% CI, 4.1–13.48], occupation [OR 2.02, 1.14–3.58] and personal income [OR 4.15, 2.18–7.91] were all associated with physical activity level. Being married, having secondary/post-secondary education