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Level of Physical Activity and Potential Barriers among Women in a Tertiary Health Institution in Southwestern Nigeria

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Abstract

Background**:* Physical activity plays a vital role in maintaining physical and mental well-being thereby reducing the risk of numerous chronic conditions and certain musculoskeletal disorders. Despite its importance, many women struggle to engage in regular physical activity due to a range of barriers. This study aimed at assessing physical activity levels and potential barriers among women working in Federal Medical Center, Owo. ***Materials and Method**:* The cross-sectional survey recruited 100 female staff who had worked for at least one year at Federal Medical Center, Owo. Ondo state, Nigeria. Data were collected using the IPAQ-Short Form and the Barriers to Being Physically Active Quiz. Ethical approval and informed consent were obtained. Data were analyzed using SPSS (version 21) with chi-square and logistic regression tests at a 0.05 significance level. ***Results: Most participants were aged 45-54, married, and had university-level education. 39% had low physical activity levels, 45% moderate, and 16% high. The most reported barriers were lack of time (64%), lack of energy (63%), and lack of willpower (59%). Other barriers like social influence, fear of injury, and lack of resources were less frequently cited. Chi-square analysis showed no significant association between physical activity level and socio-demographic factors or reported barriers. Logistic regression also revealed no significant predictors of activity level. ***Conclusion:*** Participation in physical activity remains low among women at in this study. Key barriers such as time, energy, and willpower were prevalent but not statistically predictive.

Keywords: Physical activity, Physical exercise, Barriers, Women.

INTRODUCTION

Physical activity is a vital component of a healthy lifestyle. It helps prevent and manage several chronic diseases such as cardiovascular disease, type 2 diabetes, obesity, and musculoskeletal disorders (Bull *et al*, 2020). Beyond physical health, regular movement also supports mental well-being by improving sleep, reducing stress and anxiety, and enhancing cognitive function across the lifespan (Mental Health Foundation, 2022; CDC, 2024).

Emerging evidence suggests that even small increases in physical activity can have significant health benefits. For example, adding just 10 minutes of moderate-to-vigorous activity daily could prevent over 100,000 deaths annually among U.S. adults aged 40 and above (Saint-Maurice *et al*, 2022). Similarly, walking between 6,000 to 10,000 steps a day has been linked to lower risk of premature death, especially in older adults (Paluch *et al*, 2022).

Despite this strong evidence, many women do not meet global physical activity recommendations. The WHO recommends at least 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity physical activity weekly for adults (WHO, 2020). Yet, research consistently shows that women tend to be less active than men (Tucker, Welk & Beyler, 2011), often due to greater social and cultural constraints (Sequeira *et al*, 2011).

Women face unique challenges that can limit their participation in regular physical activity. These include time constraints, low energy, caregiving responsibilities, and traditional gender roles that may discourage or deprioritize exercise (Kwak *et al,* 2016; Trost *et al*, 2002; Higginbotham, 2024). In Nigeria, additional barriers such as poor awareness, lack of

institutional support, and cultural norms further compound the issue (Joshua, Adeoye & Ibrahim, 2013).

Even among healthcare professionals — those expected to promote health — participation in physical activity may be low due to stressful work conditions, long hours, and limited workplace wellness support (Saligheh, McNamara & Rooney, 2016). At Federal Medical Center, Owo (FMCO), Ondo state, Nigeria for instance, aerobic sessions are offered weekly, yet turnout is often poor. This raises important questions about what truly prevents women from being active, even in environments where health promotion is prioritized.

Understanding these barriers is essential for developing effective strategies to support women in adopting healthier, more active lifestyles. This study therefore aims to assess the physical activity levels of female staff at FMC Owo and identify the key barriers preventing their participation. The findings are expected to inform workplace and policy-level interventions tailored to women's real-world challenges.

MATERIALS AND METHOD

This study adopted a cross-sectional analytical survey design to assess the level of physical activity and identify the barriers faced by women working at the Federal Medical Center (FMC), Owo, Ondo State, Nigeria. The study population consisted of female staff aged 23 years and above who had worked at the hospital for at least one year. Both clinical and non-clinical staff were included. Women with mobility or cognitive impairments, pregnant women, inpatients, and temporary staff such as students and interns were excluded.

A total of 100 eligible female staff were selected through simple random sampling. Participation was voluntary, and informed consent was obtained from all respondents before data collection. Ethical approval for the study was obtained from the Health Research Committee of FMC, Owo. (FMCOWO/HREC/2025/22)

Data were collected using two main instruments. The International Physical Activity Questionnaire – Short Form (IPAQ-SF) was used to assess the physical activity levels of participants over the previous seven days, covering vigorous and moderate activity, walking, and sitting time. To explore specific obstacles to physical activity, the Barriers to Being Physically Active Quiz was administered. This standardized tool contains 21 items grouped into seven barrier domains: lack of time, lack of energy, lack of willpower, social influence, fear of injury, lack of skill, and lack of resources. Responses were recorded on a four-point Likert scale, and a score of 5 or above in any domain was considered a significant barrier.

Anthropometric data, including height and weight, were collected using a stadiometer and digital weighing scale to calculate each participant's Body Mass Index (BMI). All assessments were carried out in designated areas within the hospital premises during working hours to ensure convenience and minimal disruption to duties.

Data were analyzed using IBM SPSS Statistics version 21. Descriptive statistics such as frequencies and percentages were used to summarize socio-demographic characteristics, physical activity levels, and identified barriers. Associations between socio-demographic variables and physical activity levels were tested using chi-square analysis. Ordinal logistic regression was also conducted to examine whether selected barriers, such as lack of willpower and occupation type, predicted physical activity levels. A significance level of $p < 0.05$ was used for all statistical tests.

RESULTS

A total of 100 female staff members of Federal Medical Center, Owo participated in the study. The age range of participants was between 23 and 59 years, with the highest representation from the 45–54 age group (34%). Most participants were married (56%) and had tertiary education (69%). Clinical staff made up 55% of the sample, while 45% were non-clinical staff. 39% (39) of the respondents are within the normal body mass index classification while 35% (35) were overweight. Based on IPAQ scoring, 39% of participants had low physical activity levels, 45% had moderate levels, and 16% reported high activity levels. (Table 1).

Table 1: Socio-Demographic Characteristics of Respondents (N = 100)

Variable	Category	n (%)
Age Group	15–24	6 (6.0%)
	25–34	24 (24.0%)
	35–44	23 (23.0%)
	45–54	34 (34.0%)
	55–64	13 (13.0%)
Marital Status	Single	33 (33.0%)
	Married	56 (56.0%)
	Divorced	1 (1.0%)
	Widowed	8 (8.0%)
	Separated	2 (2.0%)

Education	No formal	4 (4.0%)
	Primary	3 (3.0%)
	Secondary	5 (5.0%)
	Non-university	19 (19.0%)
	University	69 (69.0%)
Occupation Category	Clinical	58 (58.0%)
	Non-Clinical	42 (42.0%)
BMI Category	Underweight	4 (4.0%)
	Normal	39 (39.0%)
	Overweight	35 (35.0%)
	Obesity Class I	13 (13.0%)
	Obesity Class II	7 (7.0%)
	Obesity Class III	2 (2.0%)
PA Level	Low	39 (39.0%)
	Moderate	45 (45.0%)
	High	16 (16.0%)

The most frequently reported barriers to physical activity were lack of time (64%), lack of energy (63%), and lack of willpower (59%). Other barriers such as fear of injury (33%), social influence (38%), and lack of resources (35%) were less commonly reported. (Table 2).

Table 2: Descriptive Statistics of Reported Barriers to Physical Activity (N-100)

Barrier Domain	Significant Barrier n (%)	Non-Significant n (%)
Lack of Time	64 (64.0%)	36 (36.0%)
Social Influence	41 (41.0%)	59 (59.0%)
Lack of Energy	63 (63.0%)	37 (37.0%)
Lack of Willpower	59 (59.0%)	41 (41.0%)
Fear of Injury	32 (32.0%)	68 (68.0%)
Lack of Skill	33 (33.0%)	67 (67.0%)
Lack of Resources	47 (47.0%)	53 (53.0%)

Presented in table 3 is the result of test of significant association between physical activity level and socio-demographic variables of the respondents using Chi-square test. The result showed no significant association between physical activity level and socio-demographic variables such as age, marital status, education level, or occupation group ($p > 0.05$). Similarly, no significant association was found between any of the seven barrier domains and the level of physical activity ($p > 0.05$) (Table 4).

Table 3: Test of Significant Association Between Physical Activity Level and Socio-demographic Variables of the Respondents using Chi-square Test.(N-100)

Variable	Chi-Square (χ^2)	df	p-value
Age Group	5.922	8	.656
BMI Category	13.266	10	.209
Marital Status	4.638	8	.795
Occupation Category	1.510	2	.470

Table 4: Test of Significant Association Between Physical Activity Level and Barrier Domains of the Respondents using Chi-square Test (N-100)

Variable	Chi-Square (χ^2)	df	p-value
Lack of Time	2.578	2	.276
Social Influence	0.702	2	.704
Lack of Energy	1.425	2	.490
Lack of Willpower	0.765	2	.682
Fear of Injury	3.123	2	.210
Lack of Skill	0.639	2	.727
Lack of Resources	2.475	2	.290

Shown in Table 5 is the result of Ordinal logistic regression analysis to determine whether certain barrier domains or occupational groups predicted physical activity level. The results showed that neither occupation

group (clinical vs non-clinical) nor willpower significantly predicted physical activity level ($p > 0.05$) Although both variables showed odds ratios greater than 1, indicating a slight tendency toward higher activity levels, the associations were not statistically significant. This suggests that neither being in a clinical role nor reporting lack of willpower as a barrier significantly influenced how active the participants were.

Table 5: Results of Ordinal Logistic Regression used to Predictors of Physical Activity Level (N-100)

Predictor	B	SE	Wald	df	p-value	OR (Exp(B))	95% CI
Occupation Group (Clinical)	0.340	0.388	0.768	1	0.381	1.41	0.66 – 3.00
Lack of Willpower (Yes)	0.307	0.389	0.623	1	0.430	1.36	0.63 – 2.91

DISCUSSION

The study was designed to determine the level of physical activity and potential barriers among women in FMC, Owo.

The majority of respondents were in the 45–54 age group (34%), married (56%), and had university-level education (69%). Most participants were either of normal weight (39%) or overweight (35%), and more than half (58%) were clinical staff. Despite variations in age, marital status, education, BMI, and occupation, none of these socio-demographic factors showed a statistically significant relationship with physical activity (PA) levels. This is contrary to several prior studies that reported demographic influences on physical activity. For instance, Troiano *et al.,* (2008), Ogwumike *et al.,* (2016) and Kwak *et al.,* (2016) identified age, BMI, and marital status as significant predictors of PA, with younger, unmarried women and those of normal BMI being more active. The lack of significant associations in the current study could be attributed to the relatively small and occupationally homogeneous sample, as all participants were healthcare workers. This uniformity may have reduced variability in lifestyle behaviors and limited the statistical power to detect differences.

Findings from this study revealed that a considerable proportion of participants had low (39%) or moderate (45%) levels of physical activity, with only 16% reporting high physical activity levels. These findings reflect the trend observed globally and in Nigeria, where many women do not meet recommended physical activity guidelines (Bull *et al*, 2020). Similarly, the result aligns with the global pattern of physical inactivity observed among women, where women are generally less active than men, often due to sociocultural expectations, caregiving/family responsibilities, workplace constraints and limited support systems (Tucker, Welk & Beyler, 2011; Sequeira *et al*, 2011).

The most frequently cited barriers were lack of time (64%), lack of energy (63%) and lack of willpower (59%). These findings are in line with Kwak *et al.,* (2016), Saligheh, McNamara, and Rooney (2016) and Trost *et al.,* (2002), who emphasized that time constraints, fatigue, and motivation issues are primary barriers for women. The busy schedules and dual responsibilities of work and home life, especially in married or middle-aged women, may explain this trend.

Social influence (41%), lack of resources (47%), fear of injury (32%), and lack of skill (33%) were less frequently cited. This contrasts with other studies like Sequeira *et al.,* (2011), which highlighted social influence and environmental limitations as critical barriers in women. One possible reason for their lower impact in this study could be the professional background of the participants, which may have enhanced their awareness and access to fitness-related information and facilities.

Interestingly, none of the seven barrier domains showed a statistically significant association with physical activity level. This was unexpected, as previous literature, such as Duffey *et al.,* (2021) and Saligheh *et al.,* (2016), found that barriers like lack of time and resources significantly influenced PA behavior in women. One explanation for this discrepancy could be that while participants acknowledged these barriers, they may still engage in incidental or moderate physical activity (e.g, walking at work) that is not strongly affected by such barriers. Alternatively, the perceived barriers may not always translate to actual behavior due to coping mechanisms or intrinsic motivation.

Additionally, the ordinal logistic regression model revealed that neither occupation group nor lack of willpower significantly predicted physical activity level. Although clinical workers were slightly more likely to report higher physical activity, the difference was not statistically significant. This is in contrast with Saligheh *et al.,* (2016), who suggested that clinical staff may be more health-conscious and motivated to engage in physical activity. The lack of significance in this study may be attributed to structural limitations such as heavy workloads, irregular schedules, and the limited effectiveness of institutional wellness programs. While an aerobics program was available weekly at FMC Owo, low participation rates suggest that organizational support alone is insufficient without addressing deeper behavioral and environmental factors.

Furthermore, cultural and societal norms, though measured as a barrier through social influence, did not show significant association with physical activity levels in this population. This finding contrasts with studies conducted in more traditional or rural Nigerian communities where cultural expectations heavily restrict women's freedom to engage in physical

activity (Joshua, Adeoye & Ibrahim, 2013). Given that the sample in this study comprises mostly educated, employed urban women, the influence of cultural constraints may be less pronounced, or perhaps internalized in ways that are not easily measurable using a questionnaire alone.

Overall, the findings from this study highlight the complexity of physical activity behavior among women. While participants acknowledged several common barriers, these did not translate into statistically significant predictors of physical activity levels. This suggests that while perceived obstacles such as time and energy are important, they may not fully explain activity patterns in this context. Other unmeasured variables such as personal attitudes, stress levels, work shift patterns, and institutional culture may play a more influential role.

In conclusion, the results reflect that despite awareness of the importance of physical activity and the presence of support systems, participation remains suboptimal among women in FMC Owo. These findings underscore the need for targeted interventions that go beyond providing facilities and address internal motivation, time management, and workplace flexibility. Future studies may benefit from a mixed-methods approach incorporating interviews or focus groups to better understand the personal and environmental dynamics influencing physical activity among women in professional healthcare settings.

CONCLUSION

This study explored the physical activity levels and perceived barriers among women working at the Federal Medical Center (FMC), Owo. The findings revealed that a substantial number of participants engaged in low to moderate levels of physical activity, with only a minority achieving high activity levels. Despite the availability of weekly aerobics sessions at the facility, participation remained low.

The most commonly reported barriers were lack of time, lack of energy, and lack of willpower—factors frequently highlighted in literature as major deterrents to physical activity among women. However, statistical analysis showed no significant associations between physical activity levels and any of the socio-demographic variables assessed, including age, marital status, education, BMI, and occupation.

Similarly, none of the seven barrier domains time, energy, willpower, social influence, fear of injury, lack of skill, and lack of resources were significantly related to physical activity level. Ordinal logistic regression also revealed that neither occupation group nor lack of willpower significantly predicted physical activity, although clinical staff showed a non-significant trend toward being more active.

Overall, these findings highlight the complexity of physical activity behavior in professional women. While barriers were commonly acknowledged, they did not independently predict activity levels, suggesting that additional factors such as individual motivation, work schedules, or organizational culture may play a more critical role.

RECOMMENDATION

To improve physical activity participation among female staff in the work place, especially in health facilities, several actions are recommended.

First, the health facilities should consider establishing a dedicated and affordable gymnasium facility within its premises, ideally housed under the physiotherapy department. This would offer convenient access to exercise opportunities for staff, particularly women who often struggle with time constraints.

Second, efforts should be made to increase awareness and engagement in wellness initiatives, such as the weekly aerobics' sessions.

Third, the physiotherapy department should take a more active role in organizing periodic health talks or interactive demonstrations. These sessions should focus on simple, practical exercises that can be performed at home or in the office without the need for special equipment, empowering women to stay active despite busy schedules.

Lastly, introducing variety to physical activity options could enhance interest and participation among the women.

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