

## PHYSICAL ACTIVITY LEVEL OF FEMALE COLLEGE STUDENTS AT THE UNIVERSITY OF NIGERIA, ENUGU CAMPUS

Author Name: <sup>1</sup>Dr. Ikeh, Grace Ladi

Affiliation: University of Nigeria, Enugu Campus, Enugu, Nigeria Email: graciousgraceladi2015@gmail.com

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#### Abstract

Research has often proven that undergraduate students, especially the females, who participate in adequate physical activity, stand to experience general good health and productivity. The purpose of this study was to determine the physical activity level of female undergraduate students at the University of Nigeria, Enugu Campus. A descriptive cross-sectional survey was used in this study to evaluate the physical activity level of female college students, using IPAQ long form at the University of Nigeria, Enugu Campus. A total of 300 participants were selected for the research, and their anthropometric measurements were done. The collected data were analyzed using ANOVA. The results of the study showed that 66% of the female students were highly active, 33.3% moderately active, while only 0.6% were lowly active. There was a significant difference in the level of physical activity among female student at University of Nigeria, Enugu Campus. The female medical students were found the most active, followed by female health sciences students, and female law students as the least active. From the results, the level of physical activity among the female students of the University of Nigeria, Enugu Campus was satisfactory

Keywords: Physical activity level, female college students, University of Nigeria, Questionairre

#### **INTRODUCTION**

Physical inactivity is the fourth leading risk factor of death in the world. It is simply defined as a bodily movement produced by the contraction of skeletal muscles which substantially increases the amount of energy expenditure. It is a known risk factor for several non-infectious diseases like cardiovascular disease, diabetes mellitus, etc. Physical activity comprises all activity that enhances or maintains physical fitness and overall health and wellness (WHO 2009)<sup>27</sup>. This includes walking, cycling, dance, traditional games, pastures, gardening, housework, sports, and deliberate exercise. Thus, sports and exercises are seen as particular types of physical activity (Hardman, A. E., et al., 2004)<sup>9</sup>. The evidence of the positive effects of physical activity on health has been widely reported, as regular physical activity helps prevent cardiovascular diseases (heart disease, high blood pressure and stroke), which accounts for one third of deaths among women around the world (Biddle, 2007)<sup>3</sup>. When combined with adequate diet, physical activity has shown to be one of the most effective means of maintaining ideal body weight in women. Recent studies show that moderate amount of physical activity can prevent more than half the cases of non-insulin dependent diabetes, prevent and manage osteoporosis. For the above general health benefits of physical activity, health experts recommend young people to achieve at least 30 minutes of moderate intensity physical activity each day.

The level of physical activity amongst individual can be classified as low, moderate and vigorous intensity activity. Vigorous-intensity physical activity, like running, raises the body metabolism



to at least six times its resting level (>6METs). Moderate-intensity physical activity, like brisk walking, raises the heart beat leaving the person feeling warm and slightly out of breath. It increases the body's metabolism three to six times the resting metabolic level (3-6 METs), while low-intensity physical activity, like causing walking, raises the body's metabolism by less than three (<3METs).

According to the World Health Organization (WHO), about 60% of the world population does not meet the recommended daily minimum of physical activity of at least 30 minutes of moderate intensity physical activity daily for at least five days a week.<sup>26</sup> Records have shown that physical inactivity levels are rising in developing countries, due to lack of structured exercise facilities. This raising trend of physical inactivity among the developing countries like Nigeria should be highly checkmated, considering the health and psychological consequences of physical inactivity. Studies have proven that anybody who engages in regular physical activity will improve the quality of his or her life. This is because regular physical activity ensures body fitness and optimal body fat levels, thereby preventing certain diseases like cardiovascular diseases, osteoporosis, cancer, diabetes mellitus, and a host of other chronic disorders (Bouchard C., 2001).<sup>5</sup> Previous studies have shown that physical activity can reduce rate of mortality and people who are physically active tend to live longer than those who are physically inactive (Kaplan GA, 1996).<sup>11</sup>

To this end, the World Health Organization (WHO) issued recommendations in 2010 for Physical activity levels to promote health among adults<sup>28</sup>. These recommendations are also similar to those of the American College of Sports Medicine (ACSM)<sup>26</sup> WHO recommends aerobic PA of structured or unstructured character at moderate-intensity for 150 min, 75 min of vigorous-intensity aerobic PA or an equivalent combination of moderate-intensity and vigorous-intensity activity throughout the week as a means of health enhancement<sup>19</sup>. In line with these recommendations, physical activity should be made a top priority in every country. From the previous studies, physical activity has been shown to have been reduced across all the levels of school system, from high school to college. Based on the WHO sensitization on physical activity, there is a seemingly growing interest in the physical activity level among adolescents and young adults from the perspectives of health and psychology (Magarey et al, 2003).<sup>14</sup> Such interest is due to the clear indication that physical activity decreases with age, particularly during the undergraduate period with females being less active than males at all ages (Biddle, et al, 2008).<sup>3</sup>

Several studies conducted on this subject among the college students have pointed that female college students were still below the WHO recommendations on physical activity. The World Health Organization (2008) published a report that Canadian female youths are consistently less active than boys from 12 to 24 years and females have a greater reduction in participation during the same time.<sup>25</sup> In the United States, Pate and colleagues (2007) found that girls' participation in vigorous physical activity decline from 45.4 percent in the eighth grade to 34.1 percent in the grade 12.<sup>18</sup> Accordingly, the barriers and facilitators of physical activity participation for undergraduate females has been identified, with research suggesting intrapersonal (e.g. self-efficacy, perceived competence, self-image), social (e.g. peer influence) and environmental factors (e.g. gender-related physical activity programming, weather, security, inaccessible facilities) are relevant (Brooks, F., et al., 2006).<sup>6</sup> In their comparative study between male and



female participation in physical activity, Bauman, A., et al., (2009), concluded that males were more physically active than their female counterparts.<sup>2</sup> Likewise, Lightowler, et al., (2004) concluded, in their own research in United Arab Emirates, that female participation in physical activity was very low.<sup>13</sup> In another research by Saxena, et al., (2005) females were also found to be more physically inactive.<sup>25</sup>

However, some studies done to determine the levels of physical activity among college students from different colleges and programs of certain universities have shown that the levels of physical activity varied from one college to another in same schools. Angyan L, (2003) concluded that medical students had low physical activity levels as a result of high workload and less free time.<sup>1</sup> In the same vein, Dabrowska-Galas , M. (2012) in their cross-sectional study among students of the medical university of Silesia in Poland reported that medical students do not meet the recommended level of physical activity.<sup>7</sup> Considering the fact that the rate of physical activity has been lower in the developing countries, some studies have proven that the low rate of inactivity among the medical students in those countries have been alarming. Furthermore, this ugly trend has been indicated to be worse among the female medical students.

It is, indeed, unfortunate that despite the awareness of WHO that physical inactivity, together with improper diet can lead to overweight/obesity and several poor-lifestyle-induced diseases, with poor intellectual performances, most developing countries, especially African countries, have not incorporated physical education into their school systems and curricula. As a result, Bauman, A., et al., (2009) regretted that physical activity surveillance and monitoring in most countries were still very poor, despite global concerns that physical inactivity could reduce quality of life.<sup>2</sup> It is disheartening that Nigerian school system has not done enough sensitization on the importance of physical activity among the students. This has therefore affected female students more than their male counterparts in Nigeria.

Despite the obvious low levels of physical activity among the Nigerian college students, especially the female students, there are few or no studies done on this subject so far. Hence, this research is conducted to evaluate physical activity level of female college students at the University of Nigeria, Enugu Campus.

#### STATEMENT OF THE PROBLEM

The general objective of this study is to determine the level of physical activity of female students at the University of Nigeria, Enugu Campus. Specifically, the study seeks:

- 1. To determine the difference in the physical activity level of female students across the various colleges at the university.
- 2. To determine the difference in the physical activity level of female students across the various years of study at the university.
- 3. To determine the difference in the physical activity level of female students across the various dormitories at the university.
- 4. To determine the category of physical activity level of female students at the university.

## SCOPE AND DELIMITATION

This study was delimited to the evaluation of physical activity level of female college students at the University of Nigeria, Enugu Campus from November 2011 to August 2012. Using International Physical Activity Questionnaire, only apparently healthy students of the University



of Nigeria, Enugu Campus participated in the study.

### HYPOTHESIS

The following hypotheses were formulated to answer the questions at the 0.05 level of significance:

- 1. There was no significant difference in the physical activity level of female students across the various colleges at the university.
- 2. There was no significant difference in the physical activity level of female students across the various years of study at the university.
- 3. There was no significant difference in the physical activity level of female students across the various dormitories at the university.
- 4. There was no significant difference in the category of physical activity level of female students at the university.

### **MATERIALS AND METHODS**

#### **Research Design**

A descriptive cross-sectional survey was used to evaluate the physical activity level of female college students of the University of Nigeria, Enugu Campus. In this study, 300 participants were selected for the research.

#### **Location of Study**

The study was conducted at the University of Nigeria, Enugu Campus, with the student capacity of about 5, 600. The university is made up of five colleges (faculties) and fifteen departments, with six female hostels (dormitories).

#### **Target Population**

The target population for this study is the healthy female students of the university.

#### **Sampling Techniques**

The convenient method of non-probability sampling technique was used.

#### Sample Size

A sample of 300 female students participated in the study.

#### **SELECTION CRITERIA**

#### Inclusion criteria

- 1. Only female college students of the university.
- 2. Only apparently healthy female college students of the university were involved in this study.

#### **Exclusion criteria:**

- 1. Non-student Females at the university.
- 2. Female students with any form of physical deformity.
- 3. Pregnant female students.
  - 4. Female students living outside the dormitories.



## Materials Used

- 1. A weighing scale (Hanson 400KL): A portable scale with a 125kg maximum capacity and a  $\pm 0.1$ kg error margin was used to measure the weight of the participants in kilogram.
- 2. **Stadiometer (AYRON 226):** This was used to measure the heights of the participants in centimeters.
- 3. **International Physical Activity Questionnaire (IPAQ)**: A structured questionnaire titled "International Physical Activity Questionnaire" (Long version) was used (Booth, M. L. 2000).<sup>4</sup>

## **Ethical Considerations**

An ethical approval of research was obtained from the ethical committee of the University of Nigeria Teaching Hospital before the research commenced. Also, administrative permission was got from the porters of each female dormitory before the questionnaires were randomly distributed to willing students. Informed consent was obtained from participants. Adequate information on the objective of the study was given. They were also allowed to decline from participation at any stage of the research. Data of participants were kept confidential, and coded numbers were used instead of their names, which were destroyed afterwards.

## **Data Collection Procedures**

The researcher visited the entire six female dormitories at the University for Data Collection, using IPAQ long form copies. Female students, who met the criteria, were randomly selected and administered the questionnaire samples. The heights of the participating female students were measured to the nearest centimeter using the stadiometer. Also, the weight of each participant was measured using a weighing scale. BMI was calculated from the weight (kg) and height (m) (weight/height2). In the IPAQ long form used, physical activity was reported as Metabolic Equivalent (MET), where 1 MET = a resting energy expenditure assuming oxygen consumption of 3.5 ml-min/kg weight. Walking = 3.3 METS, moderate physical activity = 4.0 METS and vigorous physical activity = 8.0 METS. Students were assigned to three different categories of physical activity levels (low, moderate, high) and assessed using the formula: MET level × minutes of activity/day × days per week. The MET level was multiplied by minutes of physical activity and by events per week. There are three levels of physical activity proposed to classify populations: low, moderate and high levels of physical activity.

#### DATA ANALYSIS

Descriptive statistics showing arithmetic mean and standard deviation were calculated. Independent T-test, and ANOVA were also used to test for statistical significance between the physical activity levels of groups. To calculation for alpha constant at 0.05, statistical package for social sciences (SPSS) was used.

#### RESULTS

The results are presented in line with the objective of the study.

**Table 1: Frequency Distribution Table Parameters** 

PARAMETER	N(%)
College (Faculty)	
Health Sciences and Technology	114(38)
Medical Sciences	13(4.3)

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Law	70(23.3)
Business Administration	85(28.3)
Environmental Sciences	18(6)
Levels of Study	
100	15(5)
200	91(20.3)
300	73(24.3)
400	88(29.3)
500	33(11)
Dormitory (Hostel)	
Mariere	55(18.3)
Ibiam	64(21.3)
Ojukwu	63(21)
Manuwa	39(13)
Adelabu	31(10.3)
New Hostel	48(16)
Physical Activity Category	
Low	2(0.6)
Moderate	100(33.3)
High	198(66)

**Key:** N = number of participants, % = percentage of total participation

From Table 1 above, the numbers of the participants from different colleges with their respective percentages were analyzed, thus; health sciences  $\{114 (38\%)\}$ , medical sciences  $\{13(4.3\%)\}$ , law  $\{70(23.3\%)\}$  business administration  $\{85 (28.3\%)\}$  and environmental sciences  $\{18 (6\%)\}$ . Furthermore, the numbers of the participants from different levels of study with their respective percentages were also analyzed in the Table 1, thus; 100 level  $\{15 (5\%)\}$ , 200 level,  $\{91(20.3\%)\}$ , 300 level  $\{73(24.3\%)\}$ , 400 level  $\{88(29.3\%)\}$  and 500 level  $\{33(11\%)$ . The table also featured the numbers of the participants from different dormitories with their respective percentages, where are as follows; Mariere  $\{55(18.3\%)\}$ , Ibiam  $\{64(21.3\%)\}$ , Ojukwu  $\{63(21\%)\}$ , Manuwa  $\{39(13\%)\}$ , Adelabu  $\{31(10.3\%)\}$  and New Hostel  $\{48(16\%)\}$ . The numbers of the participants were presented according to the categories of physical activity level, thus; low-intensity  $\{2(0.6\%)\}$ , moderate- intensity  $\{100(33.3\%)\}$  and high- intensity  $\{198(66\%)\}$ .

Table 2: Differences in the Physical Activity Level
of Female Students across the Various Colleges of the
University of Nigeria, Enugu Campus

Faculties	Median	Physical Activity Level (MET) Mean ± S.D
Health Sciences	57	8946.04 ± 8698.81
Medical Sciences	7	9621.96 ± 9555.70
Law	35	4107.93 ± 3970.93
Business Admin.	43	6911.11 ± 7906.62
Environmental Sciences	9	8963.61 ± 8619.61

\*Indicates significance at p<0.05 level (2-tailed)

From the data presented in table 2, it was observed that female students from the faculty of medical sciences, had the highest level of physical activity mean 9621.96  $\pm$  9555.70 METS while their counterparts from the faculty of law had the lowest level of physical activity with mean of 4107.93  $\pm$  3970.93 METS.



# Table 3: Differences in the Physical Activity Level of Female Students acrossthe Various Years of Study at University of Nigeria, Enugu

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Years of Study	Median Physical Activity Level (MI				
		Mean ± S.D			
100	88	8778.73 ± 10746.35			
200	46	6532.10 ± 6830.91			
300	37	5907.71 ± 6054.73			
400	44	7322.46 ± 7851.72			
500	17	11501.10 ± 10896.07			

The table 3 above shows that female students in 300 level has the lowest physical activity level mean =  $5907.71 \pm 6054.73$  when compared to their fellow female students in 500 level with the highest level of physical activity mean =  $11501.12 \pm 10896.07$  METS. 100 level female students had second highest level of physical activity with mean =  $8778.78 \pm 10746.35$  MET.

Table 4: Differences in the Category of Physical Activity Level amongFemales University of Nigeria, Enugu

Category	Median	Physical Activity Level (MET) Mean ± S.D
Low	13	377.00 ± 222.03
Moderate	50	1879.27 ± 596.35
High	99	10063.62 ± 8383.92

Table 4 shows the various category of physical activity level of females at the University of Nigeria, Enugu Campus; 33.2% are of a moderate level mean =  $1879.27 \pm 596.35$  METS, with 7% of a low level mean  $377.00 \pm 222.03$  METS and 65.8% falling within a high category of physical activity mean  $100063.62 \pm 8383.92$  MET.

## **Hypothesis Testing**

There will be no significant difference in the level of physical activity of female students across the various colleges.

Alpha level = 0.05

Test statistics = analysis of variance

#### Table 5: ANOVA Summary Table of Physical Activity Level of Female Students across the Various Faculties at University of Nigeria Enugu Campus

of Nigeria, Enugu Campus						
Source of variation Sum of Squares df Mean Square					Sig.	
Between Groups	1154638614.816	4	288659653.704	4.930	.001	
Within Groups	17274050143.163	295	58556102.180			
Total	18428688757.977	299				

\*Significant at F (4, 295) P,0.05

## **Hypothesis 1**

The result (P < 0.05) above shows that there are differences in physical activity level across the colleges. This necessitates the need for a post hoc analysis to determine the source of the difference.

Table 6: Scheffe Post Hoc Test Showing Colleges/Faculties withSignificantly Different Physical Activity Levels

Faculty	Comparison	Mean Difference	P-Value
Health Sciences & Technology	Medical Sciences	-675.92206	.999
	Law	4838.11376	.002*
	Business Administration	2034.93359	.488

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	Environmental Sciences	-17.57164	1.000
Medical Sciences	Health Science And Technology	675.92206	.999
	Law	5514.03582	.226
	Business Administration	2710.85566	.841
	Environmental Sciences	658.35043	1.000
Law	Health Science And Technology	-4838.11376	.002*
	Medical Sciences	-5514.03582	.226
	Business Administration	-2803.18017	.275
	Environmental Sciences	-4855.68540	.220
Business Administration	Health Science And Technology	-2034.93359	.488
	Medical Sciences	-2710.85566	.841
	Law Environmental Sciences	2803.18017	.275
Environmental Sciences	Health Science And Technology	17.57164	1.000
	Medical Sciences	-658.35043	1.000
	Law	4855.68540	.220
	Business Administration	2052.50523	.899

Decision: The Scheffe Post Hoc analysis shows that there are significant difference between the physical activity level of female students in Law and Health Sciences.

#### **Hypothesis 2**

There will be no significant difference in the level of physical activity of female students across the various years of study.

## Table 7: ANOVA Summary Table of Physical Activity Level of Female Students across the Various Year of Study in University of Nigeria, Enugu Campus

		0 .	0 1		
Source of variation	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1792283939.355	5	358456787.871	6.335	.000*
Within Groups	16636404818.622	294	56586410.948		
Total	18428688757.977	299			

\*Significant at F (4, 295) P<0.05, **df=**Degree of Freedom, **F=**F-test

The result (P < 0.05) above shows that there are differences in physical activity level across the various year of study. This necessitates the need for a post hoc analysis to determine the source of the difference.

## Table 8: Scheffe Post Hoc Test Showing Various Years of Study with Significantly Different Physical Activity Level

Level	Comparison	Mean Difference	Sigmificance
100	200	2246.63443	.896
	300	2871.02785	.787
	400	1456.27538	.978
	500	-2722.38788	.865
200	100	-2246.63443	.896
	300	624.39342	.992
	400	-790.35905	.976
	500	-4969.02231	.043*
300 100	100	-2871.02785	.787
	200	-624.39342	.992
	400	-1414.75248	.855
	500	-5593.41573	020*
400	100	-1456.27538	.978
	200	790.35905	.976
	300	1414.75248	.855
	500	-4178.66326	.138
500	100	2722.38788	.865
	200	4969.02231	.043*
	300	5593.41573	.020*
	400	4178.66326	.138

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\* The mean difference is significant at the .05 level

#### Decision

The Scheffe post hoc analysis shows that there are significant differences in physical activity level between the female students of 500 level and 300 level alongside between those of 500 level and 200 level.

#### **Hypothesis 3**

There will be no significant difference in the level of physical activity of female students across the various dormitories (hostels).

## Table 9: ANOVA Summary Table of Physical Activity Level of Female Students across the Various /Dormitories Hostels at University of Nigeria, Enugu Campus

Source of Variation	Sum of Square	df	Mean Square	F	Significance
Between Groups	1792283939.355	5	358456787.871	6335	.000
Within Groups	16636404818.622	294	56586410.		
Total	18428688757.977	299			

\*significant at F(5,294). P < 0.05, **df=**Degree of Freedom, **F=**F-test

The result (P < 0.05) above shows that there are differences in physical activity level across the various female dormitories/hostels. This necessitates the need for a post hoc analysis to determine the source of the difference.

## Table 10: Scheffe Post Hoc Test Showing Dormitories/Hostels with Significantly Different Physical - Activity Levels

Dormitory (Hostel)	Dormitory(Hostel)	Mean Difference	• P-Value	
Mariere	Lady Ibiam	-2.90597	1.000	
	Ojukwu	-5980.70592	.003	
	Manuwa	-1928.57832	.913	
	Adelabu	-1597.49619	.970	
	New Hostel	797.64299	.998	
Lady Ibiam	Mariere	2.90597	1.000	
	Ojukwu	-5977.79995	.002	
	Manuwa	-1925.67236	.902	
	Adelabu	-1594.59022	.967	
	New Hostel	800.54896	.997	
Ojukwu	Mariere	5980.70592	.003	
	Lady Ibiam	5977.79995	.002	
	Manuwa	4052.12759	.225	
	Adelabu	4383.20973	.220	
	New Hostel	6778.34891	.001	
Manuwa	Mariere	1928.57832	.913	
	Lady Ibiam	1925.67236	•• .902	
	Ojukwu	-4052.12759	.225	
	Adelabu	331.08213	1.000	
	New Hostel	2726.22131	.727	
Adelabu	Mariere	1597.49619	.970	
	Lady Ibiam	1594.59022	.967	
	Ojukwu	-4383.20973	.220	
	Manuwa	-331.08213	1.000	
	New Hostel	2395.13918	.861	
New Hostel	Mariere	-797.64299	.998	
	Lady Ibiam	-800.54896	.997	
	Ojukwu	-6778.34891	.001	
	Manuwa	-2726.22131	.727	
	Adelabu	-2395.13918	.861	

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\* The mean difference is significant at the .05 level.

## Decision:

The scheffe post hoc analysis shows that there are significant differences in physical activity level between the between inmates of Ojukwu and Mariere and between inmates of Ojukwu and Ibiam.

## Hypothesis 4

There will be no significant difference in the category of physical activity level of female students at the University of Nigeria, Enugu Campus

# Table 11: ANOVA showing the differences in the category of physical activity levelamongst female students at the University of Nigeria, Enugu Campus

Sum of Squares	df	Mean Square	F	Sig.
4546277773.008	2	2273138886.504	48.631	.000
13882410984.969	297			
18428688757.977	299	46742124.529		
	4546277773.008 13882410984.969	4546277773.008         2           13882410984.969         297	4546277773.008         2         2273138886.504           13882410984.969         297	4546277773.008         2         2273138886.504         48.631           13882410984.969         297         48.631         48.631

\* significant at F(2, 297). P < 0.05, **df=**Degree of Freedom, **F=**F-test

The result (P < 0.05) above shows that there are significant differences in physical activity level category of female students at the university. This necessitates the need for a post hoc analysis to determine the source of the difference.

Physical Category	Activity Physical Category	Activity Mean Difference	P-Value
Low	Moderate	-1502.27000	.954
	High	-9686.62020	.139
Moderate	Low	1502.27000	.954
	High	-8184.35020	.000
High	Low	9686.62020	.139
	Moderate	8184.35020	.000

## Table 12: Scheffe Post Hoc Test Showing Categories with Significantly Different

## **Physical Activity Levels**

**Decision**: The Scheffe post hoc analysis shows that there is significant difference in physical activity level category of females at the university.

#### DISCUSSION

This study evaluated the physical activity level among the female college students of the University of Nigeria, Enugu Campus. Using descriptive research design, a total of 300 participants were selected for the research, with the age range of 17-26 years. Thus, the study demonstrated that there was a significant difference in the physical activity level among female students across the various colleges, years of study, and hostels of the university. Out of the 303 students who participated in the research, 66% were highly active, 33.3% moderately active, while 0.6% were lowly active. From the results, female medical students were found to be the most active students in the university, followed by Health Sciences female students, and then Law students, with the Business Administration female student as the least active.

Contrary to the hypothesis, the study demonstrated a significant difference in the physical



activity level among the students across the colleges in the university. This was supported by Kim, M.S. (2018) which concluded that colleges with intense programs and curricula have more active students.<sup>12</sup> In my research, it was discovered that medical college had the most rigorous programs and curriculum, followed by health sciences college, with law and business administration colleges having the least rigorous programs in that order. Unlike in the study of Naim, Z. (2016) that concluded that medical students were the most inactive students than the students of other colleges<sup>15</sup>, this study believed that the far distances of the affiliated hospitals from the University of Nigeria College of Medicine contributed to the high level of physical activity among the medical students of the university. This disagreement could be as a result of inadequacies in study designs, using inappropriate analytical methods, using small sample size, and conducting the study on a single location. It is observed that medical schools in Nigeria are usually structured in such a way that the affiliated teaching hospitals are situated away from the campuses and dormitories, which could also be a contributing factor.

Furthermore, my study showed that there was a significant difference (<0.05) in physical activity across the years of study among the female students in the Nigerian university. In the research, senior and junior female students were found to be more physically active than the sophomore and freshmen. These results were in line with the study of Oregon State University (2018), where it was also concluded that senior and junior students were more active than the sophomore and freshmen.<sup>16</sup> This study attributed these findings to the fact that the higher levels of study in every college have more comprehensive curriculum with higher study workloads. In the case of the medical and health sciences students, the seniors and juniors have more frequents clinical rotations at the affiliated hospitals, coupled with other academic activities, which in turn increase their levels of physical activity. In this study, it was also found out that there was a significant difference in physical level among different dormitories (hostels) in the university. The study concluded that students in the dormitories, which were farthest from the lecture halls and the affiliated hospitals, had higher physical activity levels than their counterparts living in the nearby dormitories. These results were in agreement with the investigation of Ozdol, Y. et al., (2012), where they concluded that the students who live far from campus had higher levels of physical activity.<sup>17</sup> Indeed, it was concluded in this work that residing in a far dormitory from the campus played a significant role in increasing the levels of physical activity among the students.

Not minding the research of (Biddle, et al, 2008), which concluded that girls, especially undergraduate students, were usually physically inactive,<sup>3</sup> this study recorded a satisfactory level of physical activity among female undergraduate students in the university, and a significant difference in physical activity level category of female students at the university. The outcomes of this study will be used to educate the Nigerian public, especially the female students, on the importance of physical activity. With these results, the management of schools in Nigeria and across the globe will be motivated to establish and implement appropriate and effective policy, as well as providing the necessary equipment and functional *environment to enhance the level of physical activity among female students*. However, there were some limitations encountered in the course of the study, which might have reduced the generalizability of the results. This study made use of IPAQ long form, which is a self-reported assessment; thus, it may not have revealed the exact level of physical activity of each student due to Hawthorn's effect. The small sample size of the study could have also limited the validity of the findings. The fact that the research was carried out at only one school and location could also limit the validity of



the results of the work. This was because the patterned structures of the lecture halls, affiliated hospitals and dormitories, which are capable of influencing the physical activity levels of the students, may differ in other schools and locations.

To overcome the encountered limitations, this study recommends the following for the subsequent studies:

- 1. Further studies should be done in other schools and locations, with larger sample size, using pedometer and accelerometer, which are objective means of assessment.
- 2. Physical education should be incorporated into the school systems, and gymnasium provided so as to motivate female students to participate in the structured physical activity.

## CONCLUSION

This study concludes that the level of physical activity among the female students of the University of Nigeria, Enugu Campus was satisfactory.

## **CONFLICTS OF INTEREST**

The author has none to declare

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