



## GENDER AND AGE DIFFERENCES IN THE PREVALENCE OF PHYSICAL INACTIVITY AMONG STUDENTS OF COLLEGE OF EDUCATION WAKA-BIU, BORNO STATE, NIGERIA

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### Abstract

*This study investigated gender and age differences in the prevalence of physical inactivity among students of College of Education Waka-Biu, Borno State, Nigeria. Physical inactivity has become a major public health concern globally, particularly among tertiary institution students who often engage in sedentary behaviours due to academic demands, prolonged use of digital devices, and limited participation in recreational activities. The study was guided by two objectives which were to determine the differences in physical inactivity between male and female students and among students of different age groups. A descriptive survey research design was adopted for the study. The population consisted of 2,407 students from the College of Education Waka-Biu, from which a sample of 241 students was selected using a 10% sampling technique across three schools, although 240 properly completed questionnaires were used for analysis. Data were collected using a structured questionnaire with sections on demographic characteristics and physical inactivity behaviours. The instrument was validated by experts in Physical and Health Education and Public Health, and its reliability coefficient was 0.77. Descriptive statistics (frequency and percentages) were used to answer research questions, while Chi-square analysis was used to test the hypotheses at a 0.05 level of significance. The findings revealed that physical inactivity was prevalent among the students, with low levels of awareness of the importance of exercise and limited engagement in regular physical activity. Most respondents reported short durations of exercise, low frequency of participation, and minimal intention to engage in physical activity. The Chi-square analysis showed that there was a significant difference in the prevalence of physical inactivity between male and female students. It was also found that there was a significant difference in physical inactivity among students of different age groups. These findings indicate that both gender and age significantly influence physical activity behaviour among students of the College of Education Waka-Biu. The study concludes that physical inactivity is a significant issue among students and is influenced by demographic factors such as gender and age. It is recommended that the institution should strengthen physical education programmes, improve awareness on the benefits of physical activity, provide accessible recreational facilities, and develop targeted interventions for high-risk groups such as females and older students.*

**Keywords:** Physical inactivity, Gender differences, Age differences, College students and Physical activity

### Introduction

Physical inactivity has become a major global public health concern with serious implications for both physical and mental well-being (World Health Organization [WHO], 2020). Among university students, particularly those in Colleges of Education, sedentary lifestyles are increasingly common due to academic demands, limited recreational time, and extensive use of digital devices (Keating, Guan, Piñero, & Bridges, 2005). This is worrisome because physical inactivity contributes to long-term health risks such as obesity, cardiovascular diseases, and psychological disorders, which may ultimately affect students' future effectiveness as educators (Bélanger, Gray-Donald, O'Loughlin, Paradis, & Hanley, 2009). Therefore, understanding the prevalence of inactivity and its demographic variations is essential for designing targeted interventions that promote active lifestyles among students. Gender is widely recognized as an important factor influencing physical activity behaviour among students. Research consistently shows that male students are more likely to participate in regular structured and recreational physical activities than female students (Hallal, Andersen, Bull, Guthold, Haskell, & Ekelund, 2012). This difference is often explained by social, cultural, and psychological influences,



including gender norms, perceived competence in sports, and societal expectations regarding exercise participation (Sallis, Prochaska, & Taylor, 2000). In addition, female students frequently experience barriers such as limited access to sports facilities, time constraints from academic workload, and safety concerns, all of which contribute to higher levels of physical inactivity (Allender, Cowburn, & Foster, 2006).

Age is another key determinant of physical inactivity among university students, as younger students, typically aged 18–21, are generally more active than older students who may face increased academic demands, part-time employment, or family responsibilities (Nelson, Story, Larson, Neumark-Sztainer, & Lytle, 2008). Differences in age-related physical activity patterns may also be influenced by variations in motivation, energy levels, and social support systems that either encourage or discourage engagement in exercise (Biddle, 2016). Understanding these age-related differences among students in Colleges of Education is important for identifying critical stages in which interventions can most effectively promote sustained physical activity. Several studies have examined physical inactivity among university populations; however, limited attention has been given specifically to students of Colleges of Education, who are being trained as future educators and role models for health and wellness behaviours in schools (Bauman, Reis, Sallis, Wells, Loos, & Martin, 2012). Their inactivity patterns are therefore significant not only for personal health but also for their ability to promote physical activity in their future professional practice. Additionally, cultural and environmental factors such as societal norms, institutional support for sports, accessibility of recreational facilities, availability of sports clubs, and campus safety may further influence gender and age differences in physical activity (Guthold, Stevens, Riley, & Bull, 2018; Sallis & Owen, 2015).

#### **Statement of the Problem**

Physical inactivity has become a growing concern among students in tertiary institutions, including Colleges of Education, as academic workload, increased use of technology, and limited participation in sports and recreational activities have encouraged more sedentary lifestyles among students, leading to serious health risks such as poor physical fitness, obesity, cardiovascular diseases, and reduced psychological well-being. Since students of Colleges of Education are future teachers and role models expected to promote healthy lifestyles among their pupils, inadequate engagement in physical activity may negatively affect both their health and their capacity to effectively advocate for healthy living. Despite the known benefits of regular physical activity in improving health and academic performance, physical inactivity remains prevalent among many students. In addition, levels of physical inactivity may differ based on demographic factors such as gender and age, as male and female students often vary in their participation in physical activities due to social, cultural, environmental, and personal influences, while students of different age groups may also exhibit differences due to varying responsibilities, lifestyle patterns, and motivation for exercise. Although previous studies have explored physical inactivity among tertiary institution students, there is still limited information on how gender and age influence its prevalence among students of Colleges of Education, hence the need to investigate gender and age differences in the prevalence of physical inactivity among these students.

#### **Purpose of this study**

The purpose of this study is to examine differences in the prevalence of physical inactivity among students of College of Education Waka-Biu, Borno State, Nigeria, based on sex and age group. The study specifically:

1. Determine the difference in the prevalence of physical inactivity between male and female students of College of Education Waka-Biu, Borno State, Nigeria.
2. Determine the difference in the prevalence of physical inactivity among students of different age groups in College of Education Waka-Biu, Borno State, Nigeria.

#### **Research Question**

What are the responses of the respondents on physical inactivity among students of College of Education Waka-Biu?



### Hypotheses

- Ho<sub>1</sub>: There is no significant difference in the prevalence of physical inactivity between male and female students of College of Education Waka-Biu Borno State, Nigeria
- Ho<sub>2</sub>: There is no significant difference in the prevalence of physical inactivity among students of different age groups in College of Education Waka-Biu Borno State, Nigeria.

### Methodology

Survey research design was used for this study. A survey design is a method of research that involves studying of characteristics of individuals, groups, objects or situations. Survey research method is concerned with the collection of data for the purpose of describing and interpreting existing conditions or practice, beliefs and attitudes. Corner and Norman (2004) stated that the purpose of survey research method is to describe systematically the facts, qualities or characteristics of a given population, event or area of interest concerning the problem under investigation. The use of this design was considered appropriate because of its importance which suits a study of this nature that seeks to determine the prevalence of behavioural and biomedical health risk factors among students of College of Education Waka-Biu. The population for the study comprised the entire students from three schools of College of Education Waka-Biu, numbering two thousand, four hundred and seven (2,407). Out of this population, one thousand, one hundred and sixty nine (1,169) were females, and one thousand two hundred and thirty eight (1,238) were males (College of Education Waka-Biu Admission Office, 2021/2022).

**Table 1: Students Population and Samples Selected in each of the three Schools Based on Gender.**

| School                             | Population<br>of male<br>students | 10% | Population<br>of female<br>students | 10% | Sample |
|------------------------------------|-----------------------------------|-----|-------------------------------------|-----|--------|
| School of Sciences                 | 816                               | 82  | 584                                 | 58  | 140    |
| School of Arts and Social Sciences | 262                               | 26  | 475                                 | 48  | 74     |
| School of Vocational Education     | 160                               | 16  | 110                                 | 11  | 27     |
| <b>Total</b>                       | 1,238                             | 124 | 1,169                               | 117 | 241    |

Source: Admission Office, College of Education Waka-Biu (2021/2022).

The questionnaire was used to obtain information from the respondents on the behavioural health risk factors (tobacco use, alcohol consumption and physical inactivity). The questionnaire has four sections. Section A demographic information of the respondents, section B, questions on the prevalence of tobacco use, section C, questions on the prevalence of alcohol consumption and section D contained questions on the prevalence of physical inactivity among students of College of Education Waka-Biu. The questionnaire had yes or no options. The researcher's supervisors and three experts in the Department of Physical and Health Education, and three Public Health experts of the University of Maiduguri were consulted to establish the face and content validity of the questionnaire, while split-half technique based on odd numbered items and even numbered items were run to determine the validity of the instrument, thirty (30) students from School of Languages who were not part of the study were used. A reliability coefficient of 0.77 was obtained. This was considered high enough to accept the reliability of the instrument. Out of two hundred and forty one questionnaires that were given out, one was missing, therefore analysis was done on two hundred and forty questionnaires that were returned. Descriptive statistics of mean, frequency counts and percentage was used to analyze research questions and demographic characteristics of the participants. Chi-square was used to test hypotheses tested at 0.05 level of significance.



## Results

**Table 2: Demographic Characteristics of the Participants (n = 240)**

| S/N | Variables   | Response options | Respondents | Percentages% |
|-----|-------------|------------------|-------------|--------------|
| 1.  | Age (Years) | 20-24 years      | 191         | 79.58        |
|     |             | 25-29 years      | 49          | 20.42        |
| 2.  | Gender      | Male             | 132         | 55.00        |
|     |             | Female           | 108         | 45.00        |

The demographic characteristics of the participants (age and gender) were presented in table 2. Age was broken down into two categories, 20-24 years and 25-29 years. In the 20-24 years age category, there were 191 (79.58%) respondents and in the 25-29 years age category, there were 49 (20.42%) respondents. The gender variable was divided into two categories: male and female. The table shows that 132 (55.00%) of the respondents were males and 108 (45.00%) of the respondents were females. Overall, the majority of the participants were in the 20-24 years age category, and there were more male respondents compared to female respondents in the study.

## Research Question One

What are the responses of the respondents on physical inactivity among students of College of Education Waka-Biu?

**Table 2: Respondents Responses on Physical Inactivity among Students of College of Education Waka-Biu (n = 240)**

| S/N | Items                                                                           | Response option              | Respondents | Percentage% |
|-----|---------------------------------------------------------------------------------|------------------------------|-------------|-------------|
| 1   | Do you know the importance of exercise?                                         | Yes                          | 20          | 8.33        |
|     |                                                                                 | No                           | 220         | 91.67       |
| 2   | If you don't do any exercise, are you thinking of engaging yourself in any one? | Yes                          | 80          | 33.33       |
|     |                                                                                 | No                           | 160         | 66.67       |
| 3   | Length of time students participate in exercise daily.                          | a) 10-20 minutes             | 102         | 42.5        |
|     |                                                                                 | b) 21-30 minutes             | 46          | 19.16       |
|     |                                                                                 | c) 31-45 minutes             | 26          | 10.83       |
|     |                                                                                 | d) 46 minutes to 1 hour      | 66          | 27.5        |
| 4   | Type of exercises engaged in by students.                                       | a) Cycling                   | 19          | 7.10        |
|     |                                                                                 | b) Jogging                   | 93          | 38.75       |
|     |                                                                                 | c) Ball games                | 85          | 35.4        |
|     |                                                                                 | d) Racket sports             | 13          | 5.4         |
|     |                                                                                 | e) Track and field athletics | 30          | 12.5        |
| 5   | Frequency of participation in exercise/week.                                    | 1-2 times                    | 91          | 37.91       |
|     |                                                                                 | 3-4 times                    | 89          | 37.0        |
|     |                                                                                 | 5-6 times                    | 60          | 25.0        |
| 6   | Level of participation in exercise.                                             | a) Very high                 | 52          | 21.66       |
|     |                                                                                 | b) High                      | 84          | 35          |
|     |                                                                                 | c) Moderate                  | 76          | 31.66       |
|     |                                                                                 | d) Low                       | 28          | 11.66       |
| 7   | I did Vigorous exercise                                                         | a) Once a week               | 58          | 24.16       |
|     |                                                                                 | b) Twice a week              | 57          | 23.75       |
|     |                                                                                 | c) Three times a week        | 58          | 24.16       |
|     |                                                                                 | d) Every day of the week     | 67          | 27.91       |



|   |                  |                                           |     |       |
|---|------------------|-------------------------------------------|-----|-------|
| 8 | Time of exercise | a) Early morning before going to lectures | 117 | 48.75 |
|   |                  | b) Evening after lectures                 | 67  | 27.91 |
|   |                  | c) Morning and evening                    | 56  | 23.33 |

Table 2 presents the frequency and percentage distribution of respondents' responses on physical inactivity among students of College of Education Waka-Biu. The findings reveal a generally low level of awareness and motivation regarding physical activity among the students. Only 20 respondents (8.33%) indicated that they knew the importance of exercise, while the overwhelming majority, 220 respondents (91.67%), reported otherwise. Similarly, among students who were not actively engaged in exercise, only 80 respondents (33.33%) expressed an intention to participate in physical activity in the future, whereas 160 respondents (66.67%) had no such intention. In addition, daily participation in physical activity was relatively low, as 42.5% of respondents reported exercising for only 10–20 minutes per day, while smaller proportions engaged in exercise for longer durations. These findings suggest that many students may not be meeting recommended physical activity levels and that inadequate awareness and motivation contribute significantly to physical inactivity. The results further indicate variations in the types, frequency, and intensity of physical activities undertaken by the students. Jogging (38.75%) and ball games (35.4%) were the most commonly reported forms of exercise, while cycling (7.10%) and racket sports (5.4%) were the least practiced activities. In terms of frequency, most respondents exercised only one to two times per week (37.91%) or three to four times weekly (37.0%), with only 25.0% participating five to six times per week. Although some students reported high (35.0%) or very high (21.66%) levels of participation in exercise, engagement in vigorous physical activity was inconsistent, with respondents distributed almost evenly across one, two, three, or seven days of participation per week. Furthermore, nearly half of the respondents (48.75%) preferred exercising in the early morning before lectures, followed by 27.91% who exercised in the evening after lectures.

### Test of Hypotheses

**Hypothesis One:** There is no significant difference in physical inactivity between male and female students of College of Education Waka-Biu.

**Table 4: Chi-square Analysis on Physical Inactivity Based on Gender (n = 240)**

| Gender       | Yes        | No           | Total      | df | $\chi^2$ | p-value | Decision    |
|--------------|------------|--------------|------------|----|----------|---------|-------------|
| Male         | 11 (21.45) | 121 (110.55) | 132        | 1  | 13.509   | .000    | Ho Retained |
| Female       | 28 (17.55) | 80 (90.45)   | 108        |    |          |         |             |
| <b>Total</b> | <b>39</b>  | <b>201</b>   | <b>240</b> |    |          |         |             |

Table 4 shows the results of Chi-square analysis conducted to determine the difference in physical inactivity between male and female students. The result revealed that there was no significant difference in physical inactivity between male and female respondents ( $p < 0.05$ ). Hence, the null hypothesis was retained.

**Hypothesis Two:** There is no significant difference in physical inactivity among students of different age groups in College of Education Waka-Biu.

**Table 5: Chi-square Analysis on Physical Inactivity by Age Groups (n = 240)**

| Age Group    | Yes        | No           | Total      | df | $\chi^2$ | p-value | Decision    |
|--------------|------------|--------------|------------|----|----------|---------|-------------|
| 20-24 years  | 28 (24.05) | 120 (123.95) | 148        | 1  | 2.021    | .106    | Ho Rejected |
| 25-29 years  | 11 (14.95) | 81 (77.05)   | 92         |    |          |         |             |
| <b>Total</b> | <b>39</b>  | <b>201</b>   | <b>240</b> |    |          |         |             |

Table 5 shows chi-square analysis on physical inactivity among students of different age groups in College of Education Waka-Biu. The result showed that there was a significant difference in physical inactivity based on age groups ( $p > 0.05$ ). Therefore, the null hypothesis was rejected.



### **Discussion of the Findings**

The findings presented in Table 4 indicate that there was no statistically significant difference in physical inactivity between male and female students of College of Education Waka-Biu. This suggests that physical inactivity is a common behavioural pattern among both genders and is not influenced significantly by sex within the study population. The finding implies that male and female students may be exposed to similar environmental, academic, and social factors that limit participation in regular physical activity. This result is consistent with studies that reported minimal gender differences in physical inactivity among tertiary institution students, particularly where both male and female students experience comparable academic workloads, limited recreational opportunities, and similar lifestyle patterns (World Health Organization [WHO], 2020; Guthold, Stevens, Riley, & Bull, 2020). The finding further suggests that interventions aimed at promoting physical activity among students should target both genders equally rather than focusing on one group alone.

The result also supports the view that factors such as lack of awareness, insufficient motivation, time constraints, and competing academic responsibilities may exert a greater influence on physical activity participation than gender differences. Similar findings have been reported by Keating, Guan, Piñero, and Bridges (2005), who found that physical inactivity among college students was widespread across both male and female populations due to shared lifestyle and educational pressures. Furthermore, Haase, Steptoe, Sallis, and Wardle (2004) observed that although participation patterns may vary across specific types of physical activities, overall inactivity levels among university students often show little variation by gender. Therefore, the retention of the null hypothesis in this study indicates that efforts to reduce physical inactivity among students of College of Education Waka-Biu should focus on addressing common barriers affecting all students, regardless of gender.

The findings presented in Table 5 revealed a significant difference in physical inactivity among students of different age groups in College of Education Waka-Biu, leading to the rejection of the null hypothesis. This result suggests that age is an important factor influencing physical inactivity among the students. Differences in physical activity patterns across age groups may be attributed to variations in lifestyle, academic responsibilities, personal priorities, and health-related behaviours. Younger students often demonstrate higher levels of physical activity due to greater energy levels, involvement in recreational activities, and stronger social engagement in sports, whereas older students may face increased academic, family, or occupational commitments that reduce opportunities for exercise. This finding is consistent with previous studies indicating that participation in physical activity tends to vary across age categories, with inactivity generally increasing as individuals grow older (Bauman et al., 2012; Guthold, Stevens, Riley, & Bull, 2018). The significant age-related difference observed in this study also supports the notion that physical activity behaviours are shaped by developmental and environmental factors. According to Trost, Owen, Bauman, Sallis, and Brown (2002), age is a key determinant of physical activity participation, with changes in social roles and responsibilities influencing engagement in active lifestyles. Similarly, Hallal et al. (2012) reported that physical inactivity patterns differ across age groups due to variations in motivation, access to recreational opportunities, and competing demands on time.

### **Conclusion**

This study investigated gender and age differences in the prevalence of physical inactivity among students of College of Education Waka-Biu, Borno State, Nigeria, and found that physical inactivity is generally prevalent, as evidenced by low awareness of exercise benefits, limited engagement in regular physical activity, short exercise duration, and inconsistent participation patterns among students. The chi-square analysis revealed significant differences in physical inactivity based on gender and age, indicating that both factors influence students' physical activity behaviours, with variations observed in participation patterns between males and females as well as across different age groups. Overall, the study concludes that both gender and age are significant determinants of physical inactivity among students of the College of Education Waka-Biu, likely due to differences in academic workload, lifestyle demands, motivation, and personal responsibilities.



### Recommendations

Based on the findings of the study on gender and age differences in the prevalence of physical inactivity among students of College of Education Waka-Biu, Borno State, the following recommendations are made:

1. The school management should introduce and strengthen compulsory physical education and wellness programmes for all students to encourage regular participation in physical activity, regardless of gender or age group.
2. The institution should provide and improve accessible recreational and sports facilities within the campus environment to make it easier for students to engage in physical exercise.
3. Academic timetables should be structured in a way that allows students adequate time for recreational and physical exercise activities, reducing the impact of academic workload on sedentary behaviour.
4. The school health unit, in collaboration with the Department of Physical and Health Education, should regularly monitor students' physical activity levels and provide counselling or guidance for students identified as physically inactive.
5. Students should be encouraged to adopt a personal responsibility approach to physical fitness, such as engaging in daily walking, jogging, or participation in intramural sports activities.

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