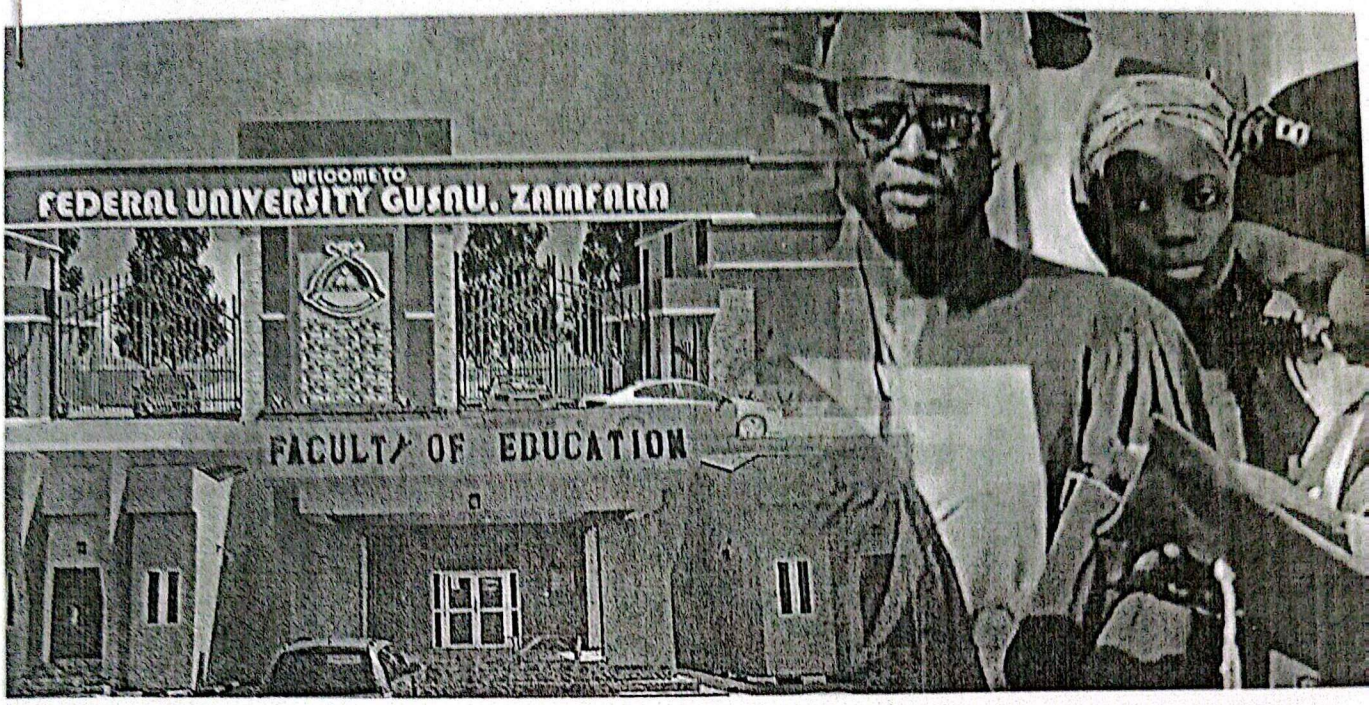


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Correlation Between Physical Activity Level and Health Status of Undergraduate Students In University Of Ilorin, Kwara State, Nigeria

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Abstract

This study examined the relationship between physical activity levels and the health status of undergraduate students at the University of Ilorin. An ex post facto study design was employed, with a sample of 600 students drawn from the institution's undergraduate enrolment. Data regarding physical activity were gathered using an updated version of the Physical Activity Participation Questionnaire. Standardised methods and instruments were employed to evaluate body weight (kg), height (m), waist circumference (cm), and hip circumference (cm). The supplies included a calibrated weighing scale, a stadiometer, and a non-elastic tape measure. The hypotheses generated for the study were assessed using the Pearson Product Moment Correlation (PPMC) at a significance threshold of 0.05. The analysis disclosed no substantial correlation between students' physical activity levels and their health status. This outcome suggests that physical exercise alone may not directly affect the overall health condition of undergraduates at the institution. Therefore, the study recommended that health promotion initiatives at universities should encompass not only physical exercise but also holistic wellness therapies. Such activities may include dietary education, mental health support, and the promotion of healthy lifestyle practices. Additionally, it was advised that routine health assessments be implemented to improve the oversight and assistance of students' general well-being.

Keywords: Physical activity, health, undergraduate students, health status, university of Ilorin.

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Introduction

Any action of the skeletal muscles that requires energy expenditure is categorised as physical exercise. Numerous studies have validated its various health benefits (Thivel et al., 2018). The advantages include a diminished risk of specific cancers (Sangrajrang et al., 2013), a reduction in obesity (Jakicic et al., 2018), relief from pain (O'Neill et al., 2021), enhancement of mental health outcomes (Jakicic et al., 2018), improvement in academic performance (Biddle & Asare, 2011), and prevention of cardiovascular and metabolic diseases (Al-Kloub et al., 2019). People of all ages necessitate physical activity, which is crucial for the growth, development, and socialisation of children and adolescents, as well as for the prevention of harmful habits (Fatoba, Dominic, Fatoba, & Dauda-Olajide, 2024). However, Şahin et al. (2017) discovered that the most significant declines in participation transpire during adolescence, high school, and college years. The World Health Organisation (2020) asserts that physical activity for individuals aged 18 to 64 encompasses recreational pursuits such as dancing, swimming, walking, and gardening, in addition to transportation activities including cycling, occupational tasks, domestic chores, organised sports, and community engagement. Notwithstanding these recognised benefits, increasing urbanisation is leading to a reduction in daily physical activity levels, including walking and cycling, in numerous areas globally. (Church et al., 2011; Rebar et al., 2015; Kelley, Kelley, & Callahan, 2018) Studies demonstrate that insufficient physical activity increases the likelihood of coronary heart disease, diabetes, obesity, musculoskeletal disorders, anxiety, and depression. It is alarming that more than 60% of individuals globally do not participate in the advised levels of physical activity, as reported by Renteria and Morris (2017). Moreover, the WHO (2020) identifies physical inactivity as the fourth most significant risk factor for worldwide mortality, impacting both health and economic outcomes. University students are particularly vulnerable to inactivity due to academic demands such as coursework, examinations, assignments, and social pressures that elevate stress levels. Research indicates that many university students do not meet the prescribed physical activity levels, and obesity rates are increasing across both genders and age demographics (Bergier, 2015; Doustjalali et al., 2016; Oyeyemi et al., 2016). The shift to university life frequently necessitates lifestyle modifications that diminish physical activity and exacerbate sedentary behaviours, especially prolonged periods of attending lectures, studying, or utilising computers. This study aims to examine the physical activity levels and health status of undergraduate students at the University of Ilorin, specifically investigating the potential association between these two factors.

Objectives of the Study

The objectives of the study were to:

i. Assess the physical activity levels of undergraduate students at the University of Ilorin;
ii. Analyse the body composition indicators of health status among undergraduate students at the University of Ilorin; and
iii. Investigate the correlation between physical activity levels and health status of undergraduate students at the University of Ilorin.

Methodology

This study employed an ex post facto design. The study population consisted of 46,831 undergraduate students enrolled at the University of Ilorin for the 2024/2025 academic session. A total of 600 students were picked from this cohort using a combination of stratified, random, purposive, and proportionate selection procedures. The stratified technique was first utilised to categorise students among the 16 faculties of the university. Five faculties were selected utilising a random selection method. Stratified sampling was utilised within the chosen faculties to categorise

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students by academic levels while purposive sampling was especially adopted to focus on 300-level and 400-level students.

A proportional sampling method was subsequently employed to pick 5% of the students from each of the five faculties involved in the study. Data gathering utilised the standardised International Physical Activity Questionnaire (IPAQ), supplemented by basic measurement tools including a stadiometer and a non-elastic tape measure. To guarantee precision and dependability, three trained research assistants facilitated the administration of the equipment and the collection of replies. The acquired data were analysed using descriptive statistics of frequency and percentages, to provide clear responses to the research objectives.

Results

Answer to Research Questions

Research Question One: What is the physical activity level of undergraduate students in University of Ilorin?

Table 1: Descriptive Analysis of the Physical Activity Level of Undergraduate Students in University of Ilorin

How often	Frequency	Percent
Low Intensity Physical Activity		
Never	30	5.0
Seldom	123	20.5
Sometimes	225	37.5
Often	222	37.0
Total	600	100.0
Duration per time	**Frequency**	**Percent**
None	30	5.0
Less than 1 hour	210	35.0
1-2 hrs	153	25.5
2-4 hrs	117	19.5
More than 4 hrs	90	15.0
Total	600	100.0
Moderate Intensity Physical Activity (MPA)		
How often	**Frequency**	**Percent**
Never	45	7.5
Seldom	183	30.5
Sometimes	243	40.5
Often	129	21.5
Total	600	100.0
Duration per time	**Frequency**	**Percent**
None	45	7.5
Less than 1 hour	282	47.0
1-2 hrs	162	27.0
2-4 hrs	63	10.5
More than 4 hrs	48	8.0
Total	600	100.0
Vigorous Intensity Physical Activity (VPA)		
How often	**Frequency**	**Percent**
Never	72	12.0
Seldom	123	20.5

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Sometimes	258	43.0
Often	147	24.5
Total	600	100.0
Duration per time	**Frequency**	**Percent**
None	72	12.0
Less than 1 hour	180	30.0
1-2 hrs	186	31.0
2-4 hrs	120	20.0
More than 4 hrs	42	7.0
Total	600	100.0

Table 1 shows the descriptive statistics for the physical activity levels of 600 undergraduate students at the University of Ilorin, broken down into light, moderate, and vigorous intensity. For light physical activity (LPA), the results show that 225 students (37.5%) said they did it sometimes, 222 (37.0%) said they did it often, 123 (20.5%) said they did it rarely, and 30 (5.0%) said they never did it. In terms of time spent on LPA, 210 students (35.0%) spent less than an hour, 153 (25.5%) spent one to two hours, 117 (19.5%) spent two to four hours, 90 (15.0%) spent more than four hours, and 30 (5.0%) did not participate at all. When it came to moderate physical activity (MPA), 243 students (40.5%) said they did it sometimes, 183 (30.5%) said they did it rarely, 129 (21.5%) said they did it often, and 45 (7.5%) said they did not do it at all. In terms of time spent, 282 students (47.0%) did MPA for less than an hour, 162 (27.0%) did it for one to two hours, 63 (10.5%) did it for two to four hours, 48 (8.0%) did it for more than four hours, and 45 (7.5%) said they did not do it at all. 258 students (43.0%) occasionally practiced vigorous physical activity (VPA), 147 (24.5%) did it often, 123 (20.5%) did it seldom, and 72 (12.0%) did not do it at all. In terms of length, 186 students (31.0%) said they did VPA for one to two hours, 180 (30.0%) said they did it for less than one hour, 120 (20.0%) said they did it for two to four hours, 42 (7.0%) said they did it for more than four hours, and 72 (12.0%) said they did not do any strenuous activity.

Research Question Two: What is the health status of undergraduate students in University of Ilorin?

Table 2: Descriptive Analysis of the Health Status of Undergraduate Students in University of Ilorin

Waist Circumference (WC)	**Frequency**	**Percent**
Mean ± SD 71.4 ± 7.5 cm		
Normal	579	96.5
Increased risk	21	3.5
Total	**600**	**100.0**
Body Mass Index (BMI)		
Mean ± SD 218 ± 2.6 Kg/m^2		
Underweight	24	4.0
Normal Weight	507	84.5
Overweight	66	11.0
Obese Class 1	3	.5

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Total	**600**	**100.0**
Waist-to-hip Ratio (WHR)		
Mean ± SD		
0.80 ± 0.1		
Low risk	558	93.0
Substantially increased risk	42	7.0
Total	**600**	**100.0**

Table 2 shows a descriptive examination of the health of 600 undergraduate students at the University of Ilorin. The average waist circumference (WC) was 71.4 ± 7.5 cm. A majority of participants, 579 (96.5%), fell within the normal waist circumference range, although 21 adolescents (3.5%) demonstrated waist circumference values indicating of increased risk. The average body mass index (BMI) was 21.8 ± 2.6 kg/m². The BMI test showed that 507 pupils (84.5%) were normal weight, 66 (11.0%) were overweight, 24 (4.0%) were underweight, and 3 (0.5%) were obese (Class I). The average waist-to-hip ratio (WHR) was 0.80 ± 0.1. Further research revealed that 558 pupils (93.0%) exhibited a WHR indicative of low health risk, while 42 students (7.0%) were identified as having a WHR associated with elevated health risk.

Hypotheses Testing

HO_1: No substantial correlation exists between the level of physical activity and the health status of undergraduate students at the University of Ilorin.

Table 3: PPMC Analysis of the Relationship between Physical Activity Level and Health Status of Undergraduate Students in University of Ilorin

Variable		**BMI**	**WHR**	**WC**
Physical Activity Level	Pearson Correlation (r)	-0.071	0.002	-0.020
	Sig	0.081	0.958	0.619
	N	600	600	600

Table 3 shows the Pearson Product Moment Correlation (PPMC) study that looked at the link between health status and physical activity levels among 600 undergraduate students at the University of Ilorin. The results showed weak negative correlations between physical activity levels and body mass index (BMI) ($r = -0.071$, $p = 0.081$), and waist circumference (WC) ($r = -0.020$, $p = 0.619$). There was a very small positive link with the waist-to-hip ratio (WHR) ($r = 0.002$, $p = 0.958$). None of these relationships were statistically significant at the 0.05 level. As a result, the null hypothesis was upheld, signifying that the students' physical activity levels did not exhibit a significant link with their health status indicators.

Discussion of Findings

This study investigated the relationship between physical activity levels and health status among undergraduate students at the University of Ilorin. The findings of the preliminary hypothesis indicated no substantial link between students' physical activity levels and their health metrics. This conclusion, albeit somewhat unexpected, can be clarified by the intricate nature of health, particularly among young adult populations. Health outcomes are affected by other factors beyond physical exercise, and frequently, these confounding variables exert a more substantial influence

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among this demographic group.Factors such as nutrition, which frequently varies owing to economic limitations and lifestyle alterations, alongside academic demands, psychosocial stress, inconsistent sleep patterns, and genetic predispositions, significantly influence students' health state (Peltzer & Pengpid, 2015). These factors may surpass the direct impact of physical activity. Furthermore, college students are typically youthful and may already have comparatively elevated baseline health levels, hence diminishing the probability that fluctuations in physical activity will yield substantial differences in overall health outcomes (Warburton et al., 2016). Consequently, the absence of a substantial association does not undermine the acknowledged advantages of physical activity; instead, it underscores that its impacts are influenced by other essential lifestyle and biological characteristics within this demographic.

Conclusion and Recommendation

The poll found that most of the University of Ilorin's undergraduate students are in good health and often do physical activities in their free time. Nevertheless, the findings demonstrated that the level of physical activity did not have a direct relationship with the health state of the students. Based on these results, health promotion programs at the school should include more than just exercise. To make a big difference in overall health, schools should offer whole wellness programs that include nutrition education, mental health support, and lifestyle management. Regular health exams should be encouraged, since systematic monitoring can help find potential health problems early and allow for quick treatment. Even though physical exercise alone may not be a good way to tell how healthy someone is, individuals should be encouraged to do moderate to intense physical activity on a regular basis to stay fit, avoid long-term health problems, and improve their overall health.

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