Faculty of Natural and Applied Sciences Journal of Health, Sports Science and Recreation
Print ISSN: 3026-9644 e-ISSN: 3043-6346
www.fnasjournals.com
Volume 2; Issue 4; December 2025; Page No. 104-115.
DOI: https://doi.org/10.63561/jhssr.v2i4.1116

Cardiovascular Fitness Awareness and Exercise Habits Among Undergraduate Students in a Tertiary Institution

***Kpai, T., & Ege, N.F.**
Department of Human Kinetics and Sports Science, Ignatius Ajuru University of Education, Rumuolumeni, Port Harcourt, Nigeria

***Corresponding author email**: tonubari.kpai@iaue.edu.ng

Abstract
Cardiovascular fitness (also known as cardiorespiratory or aerobic fitness) is a key indicator of an individual's physical health. Engaging in regular exercise places repeated demands on the heart, lungs and blood vessels. In response to these demands, the cardiovascular system adapts. This study investigated cardiovascular fitness awareness and exercise habits among undergraduate students in a tertiary institution (Ignatius Ajuru University of Education, Port Harcourt). A descriptive cross-sectional survey design was adopted for the study and the target population comprised all undergraduates of the University. Using Taro Yamane's formula, a sample of 392 students was drawn however only 371 students participated in the study. Data were collected with a self-structured questionnaire titled Cardiovascular Fitness Awareness and Exercise Habits Questionnaire (CFAEHQ). Descriptive statistics such as frequencies and percentages, were used to answer research questions, while Analysis of Variance (ANOVA) tested the hypotheses at 0.05 significance level. Findings revealed that 27.5% of respondents had low cardiovascular fitness awareness, 38.5% high, and 34.0% very high awareness. In terms of exercise habits, 48.0% had poor, 45.0% good, and 7.0% very good exercise habits. By academic level, 100-level students had the lowest awareness (72.7%), while 200- and 400-level students showed higher awareness levels. Socio-economic status also influenced awareness: 76.1% of students from lower-class backgrounds had low awareness, whereas 66.7% of middle-class students had very high awareness. A significant relationship was found between level of study ($F=17.723$, $p=0.000$) and socio-economic status ($F=20.589$, $p=0.000$) on cardiovascular fitness awareness. The study concluded that students' academic level and socio-economic background significantly affect their awareness and participation in cardiovascular fitness activities, underscoring the need for health education programs that promote active lifestyles across all levels. It was recommended that the University Administration should incorporate cardiovascular health and fitness education into general studies or physical education courses for all levels, especially for 100-level students who showed the lowest awareness and poorest exercise habits. This will help build foundational knowledge early in their academic journey.

Keywords: Cardiovascular Fitness awareness, Exercise Habits, Undergraduate students

Introduction

Cardiovascular fitness (also referred to as aerobic or cardiorespiratory fitness) is a crucial measure of an individual's physical health. During extended physical activity, the heart, lungs, and blood vessels function maximally to supply oxygen-rich blood to the working muscles. A lower risk of cardiovascular diseases, improved metabolic health, enhanced mental well-being, and longer lifespan are linked to high levels of cardiovascular fitness (Nystoriak, & Bhatnagar, 2018; Valenzuela et al., 2023). Hence, encouraging cardiovascular fitness is an essential component of public health initiatives meant to lessen the burden of non-communicable diseases globally. Physical activity refers to any bodily movement produced by skeletal muscles that results in energy expenditure beyond resting levels. It encompasses a wide range of movements, including activities carried out during work, play, household chores, travel, and recreational pursuits (World Health Organization [WHO], 2024). Physical activity is broadly categorized into moderate and vigorous intensity, depending on the level of effort required, and includes both structured exercises—

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such as running, swimming, or gym workouts—and unstructured movements, such as walking, dancing, or gardening. Exercise, on the other hand, is a subset of physical activity. It is a planned, structured, and repetitive form of physical activity that is performed with the intention of improving or maintaining one or more components of physical fitness—such as cardiovascular endurance, muscular strength, flexibility, and body composition (Dasso, 2019). Unlike general physical activity, which includes all bodily movements that result in energy expenditure (e.g., walking to class or doing household chores), exercise is specifically designed to target fitness outcomes. Exercise is commonly categorized into various types, these include: aerobic (cardio) exercise activities that increase the heart rate and improve cardiovascular health, such as brisk walking, running, cycling, swimming, and dancing), strength training (exercises that involve resistance or weight training to build and tone muscles, improve bone density, and increase metabolism. For instance, lifting weights, using resistance bands, or doing bodyweight exercises like push-ups and squats), flexibility exercises which enhance range of motion (e.g., stretching routines, yoga) and balance and coordination exercises which improve stability and movement control (e.g., tai chi, balance exercises on unstable surfaces, and certain yoga poses) (National Institute on Aging, 2025).

Engaging in regular exercise offers a wide range of physical, mental, and social benefits that are essential for maintaining overall health and well-being. Physically, it improves cardiovascular endurance, strengthens muscles and bones, enhances flexibility, and helps maintain a healthy weight (Valenzuela et al., 2023). Regular exercise significantly reduces the risk of non-communicable diseases such as heart disease, stroke, hypertension, type 2 diabetes, and certain cancers (WHO, 2024). Mentally, physical activity contributes to improved mood, reduced symptoms of depression and anxiety, enhanced self-esteem, and better cognitive function (Mahindru et al., 2023). It stimulates the release of endorphins and other neurotransmitters that promote emotional well-being and reduce stress levels, particularly important among university students facing academic pressures. Socially, physical activity can foster teamwork, communication, and social interaction, particularly through group sports or fitness classes. It also contributes to improved sleep quality and increased energy levels (Di Bartolomeo & Papa, 2017).

University students represent a critical segment of the young adult population who are undergoing significant physical, psychological, and social transitions. These changes often lead to the adoption of behaviours that can either positively or negatively impact their health. Research shows that undergraduate students are increasingly prone to sedentary lifestyles due to academic demands, screen-based learning, and reduced participation in physical activities (Castro et al., 2020; Guerriero et al., 2025). Students spend between 30-50hours a week sitting down during their entire class time receiving lectures, studying for exams and paper presentations, and while writing their exams. The time was also found to significantly increased by 75-minutes per day from first year to their final year of study (Benzo et al., 2016; Castro et al., 2020; Jerome et al., 2017; Moulin & Irwin, 2017). In addition, most of the students spend their leisure time and recess session reclining on chairs and sofa while chatting on social media, watching films, playing video games, among others. These prolonged screen time also compound their inactivity (Castro et al., 2020). Thus, the university environment and the scheduled academic programmes could have inadvertently been structured to promote sedentary lifestyle and its comorbidity among students (Castro et al., 2020; Deliens et al., 2015).

The effects of inactivity among students as created by university environment can be mitigated through deliberate engagement in various forms of exercise. The World Health Organization (WHO, 2024) recommends engaging in 150-300 minutes of moderate intensity physical activity or 75-150 minutes of vigorous physical exercise per week and the time intervals between each should be at least 10 minutes or more per session. Moderate or rigorous physical exercises simply means exercises that are of low impact, regular and gradually progress over a period of time. According to Borodulin and Anderssen, (2023), light intensity exercise is any exercise that corresponds to an energy expenditure of between 1.5 and 3 metabolic equivalent of task (MET) such as standing or slow walking; moderate intensity exercise is any exercise that requires three to six metabolic equivalent of tasks; and vigorous intensity exercise is any exercise that requires more than six metabolic equivalent of tasks; while metabolic equivalent of task is a unit used to estimate energy expenditure (oxygen consumption) of any physical activity. One MET equals energy expenditure at rest and corresponds to approximately 3.5 mL O2·kg-1·min-1 (Hills et al., 2014)

The type and intensity of exercise can vary based on individual fitness goals, preferences, and physical abilities; and aerobic exercises such as swimming, brisk walking, jogging, breathing exercises, dancing, and cycling are common among university students (Alkhateeb et al., 2019; Kljajević et al., 2022; Pan et al., 2022). Apart from body fitness enhancement, university students engaged in exercise to relieve musculoskeletal discomfort (resulting from prolonged sitting and other sedentary lifestyle) and to promote their functional capacity (Karatrantou & Gerodimos, 2024).

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The growing urbanisation accompanied with changes in lifestyle have led to reduction in physical activities with negative physiological and psychological effects among youths who later transitioned into obese adults (Chooi et al., 2019; Jebeile et al., 2022); and these have predisposed about one-third of the world's young adults to chronic non-communicable diseases such as asthma, cardiovascular disease, diabetes mellitus, high blood pressure, bone diseases, and certain types of cancer like colorectal, endometrial, gallbladder, kidney, liver, oesophageal, pancreatic, and post-menopausal breast cancers (Pati et al., 2023; Vucenik & Stains, 2012).

Although physical activity guidelines recommend that adults engage in at least 150 minutes of moderate-intensity aerobic exercise per week (World Health Organization, 2024), many students fall short of this standard. Factors such as lack of time, motivation, facilities, and knowledge contribute to poor exercise habits. This is particularly alarming given that habits formed during university years often track into adulthood and influence long-term health outcomes. Understanding the current state of cardiovascular fitness awareness and exercise habits among undergraduate students is therefore crucial. It enables educational institutions, health professionals, and policymakers to design targeted interventions that promote physical activity, raise awareness, and ultimately improve health outcomes in this population. It is on this premise that this study sought to assess the level of awareness regarding cardiovascular fitness and the exercise habits of undergraduate students using Ignatius Ajuru University of Education, Port Harcourt as a case study.

Statement of the Problem

Cardiovascular fitness is a critical component of overall health, playing a central role in the prevention of chronic diseases such as hypertension, obesity, diabetes, and heart disease. Exercise has been a reliable prescription both for healthy individuals and clinical populations with various health challenges. It has been found to significantly improve muscle strength, flexibility, balancing, and promote cardiorespiratory fitness among those that regularly and consistently engaged in it irrespective of their age, gender, and health status. The researchers have observed that the lecture schedules in many tertiary institutions including Ignatius Ajuru University of Education may encourage sedentary behaviour among the students as many students spend as much as 30-50hours a week sitting down during class time receiving lectures, which is observed to significantly increase as these students progress from first year to their final year of study. This is further exacerbated by what students engage in during their leisure hours as many of these students are often seen sitting or lying down discussing with friends or on social media platforms. These activities are not harmful in itself, it becomes a source of concern when it is excessive. This places these students at risk of developing long-term health problems like the increased risk of obesity, cardiovascular diseases and other debilitating diseases. The effects of inactivity among students could be mitigated by deliberate engagement in various forms of exercise. It is based on the foregoing premise that this study was conducted to investigate the awareness of cardiovascular fitness and exercise habits among undergraduate students in a tertiary institution using Ignatius Ajuru University of Education, Port Harcourt, Rivers State as a case study.

The following research questions guided the study;

1. What is the level of awareness of cardiovascular fitness among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt?
2. What is the exercise habit among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt?
3. What is the influence of level of study on awareness of cardiovascular fitness among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt?
4. What is the influence of socio-economic status on awareness of cardiovascular fitness among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt?
5. What is the influence of cardiovascular fitness awareness on exercise habits among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt?

The following hypotheses further guided the study and was tested at 0.05 level of significance.

1. Level of study has no significant influence on cardiovascular fitness awareness among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt.
2. Socio-economic status has no significant influence on cardiovascular fitness awareness among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt.

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3. Awareness of cardiovascular fitness has no significant influence on exercise habits among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt.

Materials and Methods

The research design was a descriptive survey design. The study was carried out in Ignatius Ajuru University of Education, Rumuolumeni, Rivers State; a state-owned university located in Rivers State, South-South Nigeria. The university is situated in Rumuolumeni, a suburb of Port Harcourt, the capital city of Rivers State, Nigeria. Port Harcourt is a major economic and cultural hub in Nigeria, and its location provides students with access to various opportunities and resources. The population of the study comprised all the students in the institution estimated at 20,484 undergraduate students. A sample of 392 students were drawn using Taro Yamane's formula, however only 371 students participated in the study. Data were collected with a self-structured questionnaire titled Cardiovascular Fitness Awareness and Exercise Habit Questionnaire (CFAEHQ). Analysis of data was done on SPSS version 26. Research questions were answered using frequencies and percentages while the hypotheses were answered using analysis of variance (ANOVA) at 0.05 alpha level of significance.

Results

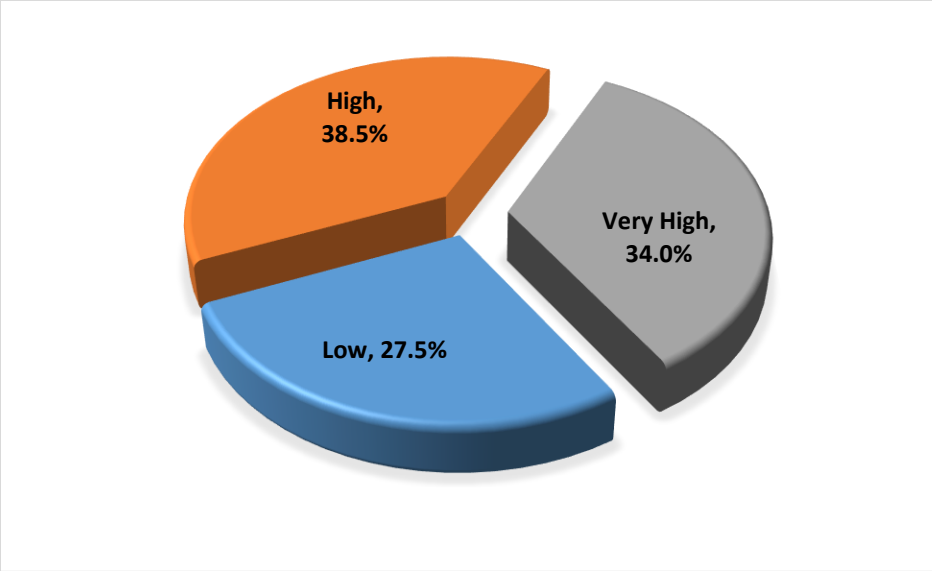

Figure 1: Frequency count on the level of awareness of cardiovascular fitness among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt.

Figure 1 presents the summary of frequency count on level of awareness of cardiovascular fitness among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt. The result shows that 27.5% of the respondents had low cardiovascular fitness awareness, 38.5% had high cardiovascular fitness awareness, and 34.0% had very high cardiovascular fitness awareness in the study area.

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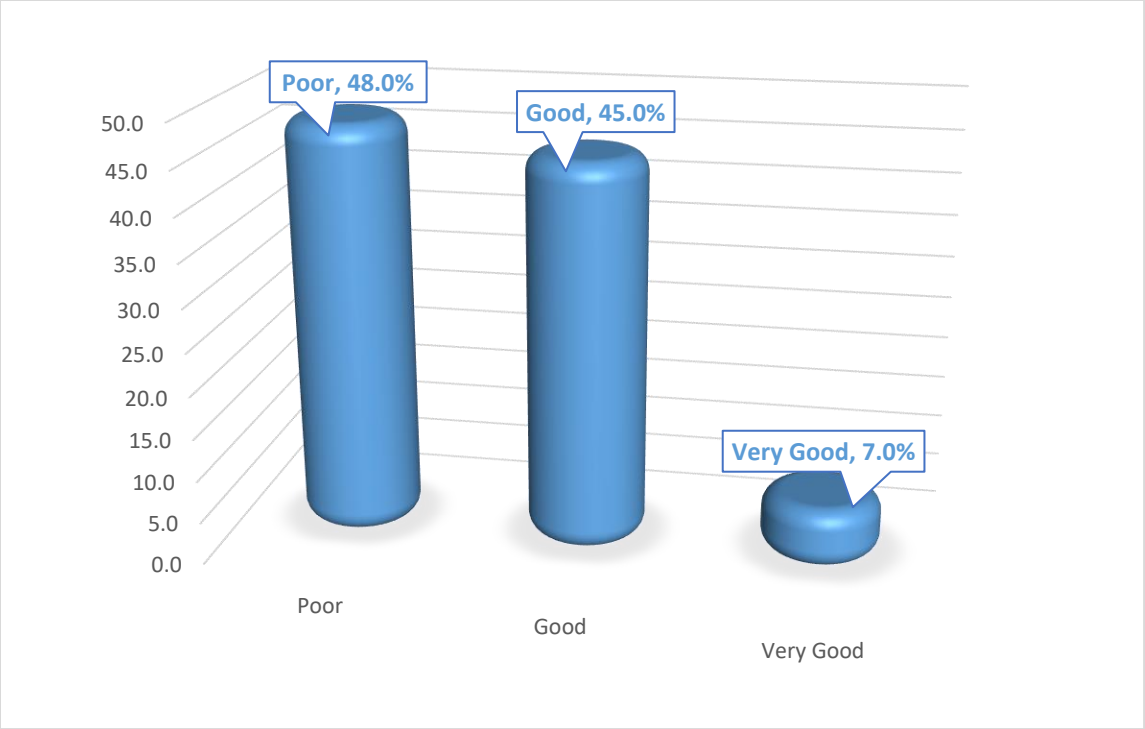

Figure 2: Frequency count on exercise habit among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt.

Figure 2 presents the summary of frequency count on exercise habit among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt. The result shows that 48.0% of the respondents exhibited poor exercise habit, 45.0% exhibited good exercise habit, and 7.0% exhibited very good exercise habits in the study area.

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Table 1: Influence of Level of Study on Awareness of Cardiovascular Fitness among Undergraduate Students in Ignatius Ajuru University of Education

	Awareness of Cardiovascular Fitness					
	Low		High		Very High	
Level of Study	Freq.	Percent	Freq.	Percent	Freq.	Percent
100Level	40	72.7	5	9.1	10	18.2
200Level	27	20.6	43	32.8	61	46.6
300Level	10	22.2	30	66.7	5	11.1
400Level	25	17.9	65	46.4	50	35.7
Total	102	27.5	143	38.5	126	34.0

Table 1 presents the summary of frequency count on influence of level of study on awareness of cardiovascular fitness among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt. The result as presented shows that among respondents who were in 100Level, 72.7% exhibited low cardiovascular fitness awareness; among those in 200Level, 32.8% exhibited high level of awareness and 46.6% exhibited very high-level awareness of cardiovascular fitness; among those in 300Level, 22.2% exhibited low awareness while 66.7% exhibited high level of awareness; and among those in 400Level, 46.4% had high awareness and 35.7% had very high level of cardiovascular fitness awareness in the study area.

Table 2: Influence of Socio-Economic Status on Awareness of Cardiovascular Fitness among Undergraduate Students in Ignatius Ajuru University of Education

	Awareness of Cardiovascular Fitness					
	Low		High		Very High	
Socio-Economic Status	Freq.	Percent	Freq.	Percent	Freq.	Percent
Lower Class	35	76.1	0	0.0	11	23.9
Middle Class	11	22.9	5	10.4	32	66.7
Upper Class	56	20.2	138	49.8	83	30.0
Total	102	27.5	143	38.5	126	34.0

Table 2 presents the summary of frequent counts on influence of socio-economic status on awareness of cardiovascular fitness among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt. The result as presented revealed that among respondents in lower socio-economic class, 76.1% exhibited low cardiovascular fitness awareness and 23.9% exhibited very good cardiovascular fitness awareness; among those in middle class, 22.9% exhibited low cardiovascular fitness awareness while 66.7% exhibited very high cardiovascular fitness awareness; and among those in upper class of socio-economic status, 20.2% exhibited low level awareness, 49.8% exhibited high level awareness, and 30.0% exhibited very high level of cardiovascular fitness awareness in the study area.

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Table 3: Influence of Cardiovascular Fitness Awareness on Exercise Habits among Undergraduate Students in Ignatius Ajuru University of Education

	Exercise Habits					
	Poor		Good		Very Good	
Awareness of Cardiovascular Fitness	Freq.	Percent	Freq.	Percent	Freq.	Percent
Low	59	57.8	37	36.3	6	5.6
High	61	42.7	77	53.8	5	3.5
Very High	58	46.0	53	42.1	15	11.9
Total	178	48.0	167	45.0	26	7.0

Table 3 presents the summary of frequency counts on influence of cardiovascular fitness awareness on exercise habits among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt. The result as presented shows that among respondents with low cardiovascular awareness, 57.8% exhibited poor exercise habits, while 36.3% exhibited good exercise habits; among those with high cardiovascular fitness awareness, 42.7% exhibited poor exercise while 53.8% exhibited good exercise habits; and among those with very high cardiovascular awareness, 46.0% exhibited poor exercise habits, 42.1% exhibited good exercise habits while 11.9% exhibited very good exercise habits in the study area.

Table 4: ANOVA on Influence of Level of Study on Cardiovascular Fitness Awareness among Undergraduate Students of Ignatius Ajuru University of Education, Port Harcourt

	Sum of Squares	Df	Mean Square	F	p-value	Decision
Between Groups	28.655	3	9.552	17.723	0.000	Significant
Within Groups	197.792	367	0.539			
Total	226.447	370				

Table 4 presents the summary of inferential analysis on influence of level of study on cardiovascular fitness awareness among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt. The result as presented revealed that level of study (F= 17.723, p= 0.000) has significant influence on cardiovascular fitness awareness among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt. Therefore, the null hypothesis was rejected at 0.05 alpha level of significance.

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Table 5: ANOVA on Influence Socio-Economic Status on Cardiovascular Fitness Awareness among Undergraduate Students of Ignatius Ajuru University of Education, Port Harcourt

	Sum of Squares	Df	Mean Square	F	p-value	Decision
Between Groups	22.788	2	11.394	20.589	0.000	Significant
Within Groups	203.659	368	0.553			
Total	226.447	370				

Table 5 presents the summary of inferential analysis on influence of socio-economic status on cardiovascular fitness awareness among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt. The result revealed that socio-economic status (F= 20.589, p= 0.000) has significant influence on cardiovascular fitness awareness among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt. Therefore, the null hypothesis was rejected at 0.05 alpha level of significance.

Table 6: ANOVA on Influence of Cardiovascular Fitness Awareness on Exercise Habits among Undergraduate Students of Ignatius Ajuru University of Education, Port Harcourt

	Sum of Squares	Df	Mean Square	F	p-value	Decision
Between Groups	1.869	2	0.934	2.459	0.087	Not Significant
Within Groups	139.856	368	0.380			
Total	141.725	370				

Table 6 presents the summary of inferential analysis on influence cardiovascular fitness awareness on exercise habits among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt. The result as presented revealed that cardiovascular fitness awareness (F= 2.459, p= 0.087) has no significant influence on exercise habits among undergraduate students of Ignatius Ajuru University of Education, Port Harcourt. Therefore, the null hypothesis was accepted at 0.05 alpha level of significance.

Discussion of Findings

On the level of awareness of cardiovascular fitness among undergraduate students, the findings showed that about one fifth of respondents reported low cardiovascular fitness awareness, while one third reported very high awareness. These findings suggest that the majority of students possess a commendable level of understanding of cardiovascular fitness, indicating increasing health consciousness and exposure to fitness-related information. However, more than one-quarter of those with low awareness highlights the need for intensified educational interventions to bridge the knowledge gap and promote healthier lifestyles among undergraduates. The result further implies that awareness level significantly influences students' engagement in cardiovascular health-promoting behaviours, such as regular exercise, balanced diet, and avoidance of sedentary habits. This finding supports Odunaiya et al. (2021), who observed that enhanced knowledge of cardiovascular disease risk factors among young adults fosters preventive health behaviour and lifestyle modifications. Similarly, Olufayo et al. (2022) reported that health awareness interventions among Nigerian university students effectively reduce clustering of cardiovascular risk factors. Furthermore, Enoh et

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al. (2025) noted that despite growing awareness, African university students remain vulnerable to lifestyle-related cardiovascular risks due to limited translation of knowledge into sustained behavioural change. Thus, sustained efforts through structured health education, peer-led campaigns, and accessible fitness initiatives are necessary to improve awareness, sustain behavioural change, and promote long-term cardiovascular wellness among students (Brown et al., 2024).

The study findings on Figure 2 revealed that almost half (48.0%) of respondents exhibited poor exercise habits, while 45.0% demonstrated good exercise habits, and only 7.0% showed very good exercise habits. These results indicate that nearly half of the students maintain inadequate physical activity levels, while fewer than one-tenth exhibit optimal exercise behaviour. This pattern suggests a worrying trend of sedentary lifestyle among young adults, which poses long-term health risks such as obesity, hypertension, and cardiovascular diseases. The relatively high proportion of respondents with poor exercise habits underscores the need for institutional strategies to promote active living and fitness participation among students. The findings support Odunaiya et al. (2021), who reported that despite reasonable awareness of cardiovascular risks, many Nigerian youths fail to engage in regular physical exercise and this, he argued was mostly due to lack of motivation, time constraints, and limited access to recreational facilities. Similarly, it was observed that an inadequate exercise culture among university students contributes to increased prevalence of physical inactivity and early signs of metabolic disorders (Adewoyin & Ayo-Ajayi, 2025). In addition, Enoh et al. (2025) emphasised that lifestyle transitions and increasing academic demands have reduced active behaviours among African undergraduates, underscoring the need for institution-based health promotion policies. Overall, the findings highlight the urgent need for structured fitness programmes, awareness campaigns, and provision of accessible sporting facilities to improve students' exercise habits and overall wellness.

Findings on Table 1 reveal that among respondents in 100 Level, nearly three quarters (72.7%) exhibited low cardiovascular fitness awareness. Among those in 200 Level, approximately one-third (32.8%) exhibited high and almost half (46.6%) exhibited very high awareness. Similarly, among 300 Level students, just over one fifth (22.2%) had low awareness while two-thirds (66.7%) had high awareness, and among 400 Level students, 46.4% had high and 35.7% had very high cardiovascular fitness awareness. This pattern shows a progressive improvement in awareness across academic levels, suggesting that exposure to higher-level courses, institutional health campaigns, and maturity contribute to increased understanding of cardiovascular fitness. The inferential result ($F = 17.723$; $p = 0.000$) further indicates that level of study significantly influences cardiovascular fitness awareness among the respondents. These findings align with Odunaiya et al. (2021), who noted that cardiovascular health awareness tends to increase with educational exposure and academic experience. Students in advanced levels of study often engage more in fitness-related activities due to accumulated health knowledge and improved self-regulation (Calestine et al., 2017). In addition, Enoh et al. (2025) observed that higher educational attainment among African youths correlates with greater awareness of lifestyle-related diseases and preventive health behaviours. Hence, these findings underscore the need to promote cardiovascular fitness awareness across all academic levels, especially among first-year students in order inculcate healthy habits early and sustain them through university life.

Study findings on Table 2 suggest that socioeconomic status plays a significant role in cardiovascular fitness awareness, as a large number of those in the lower socio-economic class, exhibited low cardiovascular fitness awareness whereas those in the upper socio-economic class, reported high cardiovascular fitness awareness. The inferential result ($F = 20.589$; $p = 0.000$) further confirms that socio-economic status significantly influences cardiovascular fitness awareness among the respondents. This finding supports Odunaiya et al. (2021), who found that individuals from higher socio-economic backgrounds are more likely to engage in health-promoting activities due to better access to health information and facilities. Similarly, Oluwasanu et al. (2021) observed that socio-economic disparities affect physical activity participation and health awareness among Nigerian students. Furthermore, Enoh et al. (2025) noted that socio-economic status remains a key determinant of lifestyle-related health literacy among African youths, as those possessing greater financial and educational resources demonstrate higher levels of awareness and more proactive preventive behaviours. Thus, addressing socio-economic disparities through affordable health programmes, peer education, and subsidised gym access can promote equitable cardiovascular health awareness across student groups (Karran et al., 2023; Cacciatore et al., 2025).

Findings from the study further revealed that among respondents with low cardiovascular fitness awareness, more than half exhibited poor exercise habits whereas those who reported high cardiovascular fitness awareness exhibited good exercise habits. This pattern indicates a general improvement in exercise habits with increasing cardiovascular fitness awareness, though a considerable proportion of students with high or very high awareness still engage in poor exercise behaviours. The inferential analysis ($F = 2.459$; $p = 0.087$) suggests that cardiovascular fitness awareness has

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no statistically significant influence on exercise habits among undergraduate students in the study area. This finding is at variance with Odunaiya et al. (2021), who reported that knowledge of cardiovascular health positively affects physical activity engagement among Nigerian youths and Umeifekwem (2011) who found that awareness of the health benefits of exercise is associated with higher levels of physical activity participation among university students. Students with a better understanding of the consequences of physical inactivity were more inclined to adopt regular exercise routines. However, Hendel et al. (2024) posited that awareness alone may not be sufficient to trigger behavioural change in the absence of institutional support and sustained motivation. Therefore, universities should complement awareness campaign with structured exercise programmes, provision of facilities and social support systems essential to translate awareness to sustained positive exercise habits (Huang & Wu, 2024; Jeftic et al., 2023).

Conclusion

Based on the major findings, it was concluded that a fair proportion of students demonstrated high cardiovascular fitness awareness however, a significant percentage still exhibited low awareness and poor exercise habits, particularly among lower-level students and those from lower socio-economic backgrounds. Students' academic level and socio-economic background significantly affect their awareness and participation in cardiovascular fitness activities, underscoring the need for health education programs that promote active lifestyles across all levels.

Recommendations

Based on the findings of the study, the following recommendations were made;

1. University Administration should incorporate cardiovascular health and fitness education into general studies or physical education courses for all levels, especially for 100-level students who showed the lowest awareness and poorest exercise habits. This will help build foundational knowledge early in their academic journey.
2. Human Kinetics/Sports Departments in tertiary institutions should take the lead in conducting workshops, fitness fairs, and awareness campaigns on the importance of cardiovascular fitness and regular exercise. These programs should target students from lower socio-economic backgrounds and those in the lower levels (100–200) who exhibited lower awareness and poorer exercise habits.
3. The University Sports Unit should design and implement structured, level-appropriate exercise programs and inter-level fitness challenges. Participation incentives (such as certificates or health points) can encourage regular engagement among students, particularly those with poor exercise habits as identified in the study.
4. The Student Union Government (SUG) should collaborate with the Sports Unit, Human Kinetics/Sports and Health Education Departments to create and promote peer-led fitness clubs. These clubs can organize weekly exercise sessions, jogging groups, and social fitness events, helping to foster a supportive environment for sustained exercise habits among all socio-economic groups.
5. The University Health Services should implement routine cardiovascular health screenings and counselling services for students. Emphasis should be placed on early detection and lifestyle modification advice, especially for students in the lower socio-economic class, who demonstrated lower fitness awareness and poorer exercise behaviour.

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Cite this article as:
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