KNOWLEDGE, ATTITUDE, PREVALENCE AND DETERMINANTS OF SPORTING ACTIVITIES AMONG MEDICAL STUDENTS IN THE UNIVERSITY OF BENIN, BENIN CITY.

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SEPTEMBER, 2025

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BEING A ONE YEAR PROJECT PRESENTED TO THE DEPARTMENT OF PUBLIC HEALTH AND COMMUNITY MEDICINE, SCHOOL OF MEDICINE, COLLEGE OF MEDICAL SCIENCES, UNIVERSITY OF BENIN, BENIN CITY EDO STATE, NIGERIA

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SEPTEMBER, 2025

DEDICATION

This study is dedicated above all to my Heavenly Father and Savior, Jesus Christ, whose steadfast strength and guidance have sustained me throughout this journey. I extend my heartfelt gratitude to my supervisors and teachers for their invaluable wisdom, guidance, and encouragement, which were instrumental to the success of this study. To my dear parents and siblings, I am deeply thankful for your unconditional love, prayers, and unwavering support that helped me overcome every challenge. I feel truly blessed to have each of you in my life.

CERTIFICATION

This is to certify that this research work titled " **KNOWLEDGE, ATTITUDE, PREVALENCE AND DETERMINANTS OF SPORTING ACTIVITIES AMONG MEDICAL STUDENTS IN THE UNIVERSITY OF BENIN, BENIN CITY**" was conducted by **ONAIWU PAUL NOSAYABA** with matriculation number **MED1706266** under supervision of **PROFESSOR OKOJIE i**n the department of Public Health and Community Medicine, College of Medicine, University of Benin as part of the requirements for the award of Bachelor of Medicine, Bachelor of Surgery (MBBS).

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DECLARATION

I hereby declare that this work was originally carried out by me, under the supervision of **PROFESSOR OKOJIE**. It is original, except otherwise stated and has never been submitted anywhere else for any purpose before

…………………………….

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Date………………………

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LIST OF ABBREVIATIONS

NIMSA: Nigerian Medical Students' Association

NETEGA: Nigeria Teachers Education Games Association

NUGA: Nigeria University Games Association

NIPOGA: Nigeria Polytechnic Games Association

WHO: World Health Organization

DEFINITION OF TERMS

Attitude: a predisposition or evaluation, either positive or negative, that individuals hold toward an object, person, group, or situation.

Determinants: factors or conditions that influence or determine the outcome of a particular event, behaviour, or phenomenon.

Leisure: time spent outside of work, study, or other obligations, during which individuals engage in activities of their choosing for relaxation, enjoyment, or personal development

Medical Students: individuals enrolled in medical educational programs, typically at the university level, focused on the study and practice of medicine.

Physical Activity: any bodily movement produced by skeletal muscles that requires energy expenditure.

Physical Inactivity: a lack of sufficient physical activity required to meet recommended health guidelines.

Sedentary Behaviour: activities that involve sitting, reclining, or lying down with low levels of energy expenditure.

Sports: organized physical activities or games that involve competition, skill development, and structured rules or regulations.

ABSTRACT

Background: Sporting activities are an essential component of undergraduate student life, providing not only opportunities for physical fitness but also benefits for mental health, social cohesion, and academic performance. Among medical students, who face demanding curricula and high levels of academic stress, regular participation in sports can reduce burnout, improve concentration, and promote resilience. Determinants of sporting activity among medical students are multifactorial. Structural determinants include the availability, accessibility, and safety of

sports facilities, along with institutional support such as organized competitions, club funding, and timetabled recreation periods. Individual determinants include gender, prior exposure to sports in secondary school, physical health, perceived self-efficacy, and competing responsibilities such as part-time work or family commitments. There are many studies on sporting activities worldwide, but few has been carried out specifically to determine its prevalence among medical students in tertiary health institutions particularly in Benin city.

Objectives: To assess the knowledge of benefits, attitude, level of participation and determinants of participation in sporting activities as well as to compare the observed benefits among participants.in the University of Benin college of medicine.

Methodology: A descriptive cross-sectional study design was used for this study. Three hundred and eighty-seven medical students in the University of Benin were selected for this study using a stratified sampling technique. Data was collected using self-administered pre-structured questionnaire adapted from the American Adult Knowledge of Exercise Recommendations Survey (AAKERS), International Physical Activity Questionnaire (IPAQ) and Self-Efficacy for Exercise Scale (SEES) and analyzed using the IBM SPSS version 27.0 software.

Data was categorized and analyzed using descriptive statistics, frequencies and percentage based on the total number of respondents. Univariate, bivariate, multivariate analysis were done. The level of significance was set at $p < 0.05$. The results were presented with tables, charts and prose

Results: A total of 387 medical students participated in the study. The mean age (SD) of respondents was 22.16 ± 3.33 years. A higher proportion of the respondents 53.5% (n = 207) were males and 21.4% (n = 83) of the respondents were in final year class. A larger proportion 238 (61.5%), lived in school hostels while 253 (65.4%) received more than ₦30,000 as monthly

allowance, Majority (92.2%) had heard about the benefits of sporting activities with internet being the most common source of information (61..6%). Over nine-tenth 365 (94.3%) of the medical students had adequate Knowledge of benefits of sporting activities and 81.1% positive attitude toward sporting activities. Sex and place of residence were found to be significantly associated with attitude toward sporting activities. Slightly above two-thirds (64.3%) of medical students reported having ever participated in sporting activities during medical school, while only about one-tenth (14.9%) engaged in sports on a daily basis. sex, level of study, place of residence, monthly allowance, lack of time, financial constraints, physical limitations or injuries and competing academic commitments were significant determinant of level of participation. The male students were 1.80 times more likely to participate in sports than females (95% CI: 1.035–3.139, p=0.037). Preclinical students were less likely to participate than clinical students (OR=0.413, 95% CI: 0.201–0.852, p=0.017). Students residing in school hostels were over three times more likely to participate compared to those living at home (OR=3.352, 95% CI: 1.116–10.069, p=0.031). Those with physical limitations or injuries were more likely to participate (OR=2.172, 95% CI: 1.229–3.837, p=0.008), while students with a negative attitude toward sports (OR=0.064, 95% CI: 0.030–0.138, p<0.001) and those perceiving sports facilities as too far (OR=0.498, 95% CI: 0.283–0.875, p=0.015) were less likely to participate. A majority (76.3%) of regular participants reported fewer absences from school due to illness, and (73.0%) hospitalization or bed rest for preventable conditions within the past year was less common compared to their counterparts who did not engage in sports

Conclusion: Over nine-tenths of the medical students in the University of Benin have adequate knowledge of the benefits of sporting activities. Over four-fifths of the medical

students in the University of Benin have positive attitude toward sporting activities. Only two-thirds of medical students at the University of Benin have participated in sporting activities

Keywords: Sport, Sporting Activities, Medical Students, University of Benin College of Medicine

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

Physical activities have long been recognized as a vital component of a healthy lifestyle, contributing to physical fitness, mental well-being, and social interaction.[1,2] Participation in sports can enhance cardiovascular health, build muscle strength, improve coordination, and foster emotional resilience.[2] For students, particularly those in rigorous academic environments, the benefits of engaging in regular physical activities are manifold.[3,4] Understanding the factors that influence participation in sports, as well as the attitudes and perceptions towards these activities, is essential for promoting health and well-being among this demographic.[5]

In 2018 World Health Organization (WHO) launched "More Active People for a Healthier World", a new Global Action Plan on Physical Activity 2018-2030 adopted to reduce global levels of physical inactivity by 15% by 2030. which outlines four policy action areas and 20 specific policy recommendations and actions for Member States, international partners and WHO, to increase physical activity worldwide.[2] The global action plan calls for countries, cities and communities to adopt a 'whole-of-system' response involving all sectors and stakeholders taking action at global, regional and local levels to provide the safe and supportive environments and more opportunities to help people increase their levels of physical activity.[2]

The WHO provides specific guidelines for physical activity that vary according to age groups, recognizing the distinct health needs and capabilities of different populations.[1] For adults aged 18–64 years, which includes the majority of medical students, the WHO recommends at least 150–300 minutes of moderate-intensity aerobic physical activity or at least 75–150 minutes of

vigorous-intensity aerobic physical activity per week.[1] An equivalent combination of moderate- and vigorous-intensity activity is also acceptable. Additionally, adults in this age group should engage in muscle-strengthening activities involving all major muscle groups on two or more days a week, as these exercises provide significant health benefits.[1]

Sporting activities encompass a wide range of physical exercises, from individual sports like running and swimming to team sports like basketball and soccer.[6] Participation in these activities can vary significantly based on demographic factors, including age, gender, socio-economic status, and educational background.[6–9] Regular engagement in sports is associated with numerous health benefits, including reduced risks of chronic diseases such as obesity, diabetes, and cardiovascular disorders. Additionally, sports participation can enhance mental health by reducing symptoms of anxiety and depression, improving mood, and boosting overall life satisfaction.[10–14]

In educational settings, particularly in higher education institutions, participation in sports can contribute to better academic performance.[15–17] Studies have shown that students who regularly engage in physical activities often exhibit improved concentration, memory, and cognitive function.[11–14,18,19] These benefits are crucial for medical students and other high-stress academic populations, where the demands of coursework and clinical training can be overwhelming.[3,17,20–23]

The determinants of participation in sporting activities are multifaceted and can be broadly categorized into individual, social, and environmental factors.[24,25] Individual or personal determinants may include personal motivation, health status, physical ability, and previous sports experience.[4,26,27] Social determinants involve influences from family, peers, and social networks, which can significantly impact an individual's decision to engage in sports. For instance, students

who have supportive friends or family members who prioritize physical activity are more likely to participate in sports.[7]

Environmental determinants encompass the availability and accessibility of sports facilities, safety of the environment, and institutional support.[28,29] Access to well-maintained sports facilities and safe environments can encourage more students to participate in physical activities. Institutional policies and programs that promote sports, such as providing flexible schedules for physical education classes or offering incentives for participation, also play a critical role.[14,30]

Attitudes towards sporting activities are shaped by a combination of individual beliefs, cultural values, and personal experiences.[21] Positive attitudes towards sports can lead to higher levels of participation, as individuals who perceive sports as enjoyable and beneficial are more likely to engage in them regularly.[4,9,26,31] Additionally, cultural norms regarding gender roles and physical activity can impact how different groups perceive and engage in sports. In many cultures, there are distinct differences in how sports participation is viewed for men and women, which can lead to disparities in participation rates.[27,32] Encouraging female participation in sports not only promotes physical health but also fosters confidence, resilience, and leadership skills, empowering women to challenge stereotypes and achieve greater social and economic inclusion.[32]

Sports development in Nigeria has been a dynamic journey marked by efforts to harness the country's vast athletic talent and promote physical activity across all levels of society. With the colonization of Nigeria by the British in the 19th century, British sports became popular in Nigeria, particularly in the coastal areas.[28,33] Football, as a sport, was introduced into Nigeria by the early European visitors and the missionaries The Nigerian government, through various

policies and initiatives, has aimed to improve sports infrastructure, increase funding, and provide training programs to nurture young athletes.[33]

In tertiary institutions, sports development is emphasized through the establishment of sports councils, the organization of intercollegiate competitions, and the inclusion of sports as a key component of student life, including the creation of Nigeria University Games Association (NUGA), Nigeria Polytechnic Games Association (NIPOGA), and Nigeria Teachers Education Games Association (NETEGA).[33,34] each regulated by specific guidelines and instruments to promote sports and physical activities within their respective educational sectors. Universities and colleges in Nigeria have made significant strides in creating avenues for sports, although these efforts are still insufficient to meet the growing needs and potential of their student populations. These efforts aim to not only enhance the physical health and well-being of students but also foster teamwork, leadership, and school spirit, contributing to the overall development of the educational system in Nigeria.[4,17,28,35]

For medical students, participation in sports is equally essential, although often challenged by the demanding rigors of medical education.[17] The biennial Nigerian Medical Students' Association (NIMSA) games were founded to address this need, specifically aiming to promote physical fitness and mental well-being among future healthcare professionals.[36] The NIMSA games provide a unique platform for medical students to engage in various sports, including football, basketball, volleyball, and athletics, despite their tight academic schedules. Participation in the NIMSA games is not only about physical activity; it underscores the importance of balancing academic responsibilities with physical health, preparing future doctors to advocate for healthy lifestyles in their professional practices.[36]

1.1 STATEMENT OF THE PROBLEM

Physical inactivity presents a significant public health challenge globally, contributing to approximately 3.2 million deaths annually, ranking it as the fourth highest risk factor for mortality worldwide, surpassing risks such as unsafe sex, undernutrition, and alcohol use.[1] The consequences of physical inactivity are dire, with over one-fourth of heart disease and diabetes deaths, as well as more than one-fifth of breast and colon cancer cases, attributed to insufficient physical activity levels.[1]

Globally, nearly one-third of adults fail to meet the recommended physical activity guidelines, with disparities between genders and income levels evident.[1] This trend is particularly alarming in low- and middle-income countries, which bear the brunt of physical inactivity-related mortality, accounting for 2.6 million deaths annually. Even in low-income countries, physical inactivity ranks among the top ten risk factors for death, highlighting the pervasive nature of this issue across all economic strata.[1]

The impact of physical inactivity extends beyond individual health outcomes, affecting health systems, environmental sustainability, economic development, community well-being, and overall quality of life.[23,35,37] Studies suggest that leisure-time inactivity, sedentary behaviours at work and home, and a surge in passive transportation methods contribute to declining physical activity levels worldwide.[6,37,38]

1.2 JUSTIFICATION OF STUDY

Participation in sporting activities is widely recognized as a crucial component of a healthy lifestyle, contributing significantly to physical, mental, and social well-being.[1,2] The benefits of engaging in regular physical activity are particularly pertinent for medical students, who are

often subjected to high levels of academic stress and demanding schedules.[39–41] Despite the well-documented advantages, there is a paucity of comprehensive data on the participation of medical students in sporting activities, especially within the context of Nigerian universities. This study aims to fill this gap by focusing on medical students at the University of Benin, Benin City, Edo State, Nigeria.

This study will explore their perceptions and attitudes towards sporting activities, identifying any prevailing myths, misconceptions, or cultural barriers that might affect their willingness to participate. This research will provide valuable insights into how medical students manage their stress and well-being through physical activity, and it will identify barriers and facilitators that influence their participation in sports. By doing so, the study can inform the development of targeted interventions and support systems to enhance the overall health and well-being of medical students.

Additionally, there is growing evidence suggesting a positive correlation between physical activity and academic performance.[42–44] Medical students who participate in regular exercise may experience enhanced cognitive function, improved concentration, and better academic outcomes. Exploring the relationship between sports participation and academic performance among medical students can offer insights into the potential benefits of integrating physical activity into their daily routines.

Furthermore, as future healthcare providers, medical students' attitudes towards sporting activities can significantly impact their ability to advocate for healthy lifestyles among their patients. By investigating these determinants and attitudes, the study can contribute to the body of knowledge on lifestyle medicine and inform strategies to incorporate physical activity counseling into medical practice, ultimately promoting healthier communities.

This study will inform policy and program development, and contribute to the academic understanding of sports participation in higher education contexts. The findings will not only benefit the students at the University of Benin but also have broader implications for student health initiatives across Nigeria and beyond.

1.3 RESEARCH QUESTIONS

The study addressed the following research questions.

1. What is the knowledge of benefits of sporting activities among medical students of the University of Benin, Benin City, Edo State, Nigeria?
2. What is the attitude towards sporting activities among medical students of the University of Benin, Benin City, Edo State, Nigeria?
3. What is the level of participation in sporting activities among medical students of the University of Benin, Benin City, Edo State, Nigeria?
4. What are the determinants of participation in sporting activities among medical students of the University of Benin, Benin City, Edo State, Nigeria?
5. What are the differences in observed benefits between those who participate in sports and those who don't?

5.1 AIMS AND OBJECTIVES

5.1.1 GENERAL OBJECTIVE

To assess the participation in sporting activities and its determinants among medical students of the University of Benin, Benin City, Edo State, Nigeria to evaluate their engagement, provide recommendations for enhancing participation, and contribute to existing literature on student health and wellness.

5.1.2 SPECIFIC OBJECTIVES

1. To assess the knowledge of benefits of sporting activities among medical students of the University of Benin, Benin City, Edo State, Nigeria.
2. To examine medical students' attitude towards sporting activities at the University of Benin, Benin City, Edo State, Nigeria.
3. To assess the level of participation in sporting activities among medical students of the University of Benin, Benin City, Edo State, Nigeria.
4. To identify the determinants of participation in sporting activities among medical students of the University of Benin, Benin City, Edo State, Nigeria.
5. To ascertain and compare the observed benefits between those who participate and those who don't.

CHAPTER TWO

LITERATURE REVIEW

Regular participation in sporting activities plays acrucial role in maintaining a healthy physical and mental health. This literature review aims to provide an overview of studies published in reputable journals in the last ten years that examined the knowledge of benefits of sporting activities, attitude towards such activities and the level of participation in those activities amongst undergraduate medical students. This review will also highlight existing research that identified the determinants of participation in sports and compared the observed benefits between those who participate and those who don't. This review will also identify the strengths and weaknesses of existing research and the gaps in literature. The databases used for this review includes PubMed and SPORTDiscus.

2.1 Knowledge of Benefits of Sporting Activities Among Medical Students

A descriptive cross-sectional study was done in the United States in 2021 to assess the knowledge and habits of exercise in medical students. Data were collected using cross-sectional surveys to assess student's physical activity level, knowledge of exercise recommendations, and self-efficacy for exercise. Scripted questions were also used to explore exercise habits, sources of exercise knowledge, attitude toward exercise.[45] Sixty-six percent of participants identified as White, 21% as Asian, 6% as biracial, and 6% as Black or African American. Fifty-two percent of participants identified as female while 48% identified as male. The results of the quantitative survey assessed activity level, knowledge, and efficacy of the participants. IPAQ results demonstrated that 50% (n = 66) of participants have a high activity level, 40% (n = 53) are classified as moderate, and 10% (n = 13) as low. AAKERS showed a mean ± standard deviation

score of 16.23 ± 2.66 out of 20 possible points (n = 130) (81% correct). Responses from the qualitative, key-informant interviews addressed exercise habits, knowledge, and the role of the physician in exercise prescription.[45] Sixty percent (n = 12) of interview participants reported exercising 5 or more days per week, while 30% (n = 6) exercised 3 to 5 days a week and 10% (n = 2) exercised infrequently. Eighty percent (n = 16) of participants endorsed participating in cardiovascular exercise, while 75% (n = 15) stated they participated in strength training and 45% (n = 9) utilized lifestyle exercise. All indicated personal mental health benefits of exercise.[45] While this study incorporates different racial groups, it was not evenly distributed as 66% of the participants were white. Secondly, the participants are of high socioeconomic status with access to modern sporting infrastructure than this study's target population.

An observational, descriptive, cross-sectional study was conducted at the Faculty of Medicine, University of Khartoum, Sudan in December 2022. A total of 336 students were included using systematic random sampling. Data were collected using an online questionnaire that included the Global Physical Activity Questionnaire (GPAQ).[46] Results revealed that the Students had good knowledge about the cardiovascular and mental benefits of physical activity but not about its protective benefits against cancer. Only 19.4% knew the WHO-recommended levels of physical activity. The most common major barriers toward physical activity reported by the students were lack of time (43.8%), and lack of suitable facilities (31.3%) among others. More than half (59.5%) of the students were insufficiently active. Levels of physical activity were significantly associated with the participants' sex but not their knowledge of the recommended levels of physical activity.[46] This study reviewed was done in Sub-Saharan Africa, and has a target population of similar demography and socioeconomic status. However, it did not contrast between perceived benefits of those who did not participate and those who did.

A descriptive cross-sectional study was done to determine the knowledge of the health benefits of engaging in physical activities possessed by students in Nsukka Education Zones, Enugu State. The study utilized a survey research design. The sample for the study was 412 students, selected through random sampling without replacement technique. The instrument for data collection was structured by the researcher based on the literature on physical health benefits, psychological benefits and social benefits.[47] Majority 75.5% of the students possessed high knowledge of physical, psychological and social health benefits of engaging in physical activities. However, majority 66.3% of the respondents lacked knowledge of the WHO recommended physical activity guideline for health enhancement and well being. All the genders possessed high knowledge of the physical, psychological and social benefits of engaging in physical activities, though male adolescents possessed more knowledge of the recommended physical activity guidelines than females with 35.2% and 31.4% respectively.[47] While this study revealed the knowledge of benefits of participation in sports, it did not assess their attitudes towards sports.

2.2. Medical Students' Attitudes Towards Sporting Activities

A descriptive cross-sectional study was conducted in a tertiary care medical institute in Manipur, India between July 18, 2016, and August 16, 2016 to explore the attitude and motivation to be physically active by participating in sports among undergraduate medical students. Self-administered questionnaire was used for data collection. Data collected were analyzed in IBM SPSS version 21. The results were summarized in frequencies and proportions for categorical variables and in means and standard deviations for continuous variables. Chi-square test,

ANOVA, and Student's t-test were employed and P< 0.05 was considered statistically significant. The results showed that out of the 361 participants, 180 (49.9%) were females.[48] The mean age of the participants was 22.55 ± 2.08 years (range: 18–34 years). Body mass index of majority of the participants (59%) fell within the normal range. About 62.3% of the students were currently engaged in physical activity with the attitude of the students towards physical activity found to be favorable. Intrinsic motivation such as improved health and wellbeing were identified as the most important motive for being physically active, rather than extrinsic incentives like awards and public recognition. The participants displayed a favorable attitude toward physical activity with no difference in attitude compared to male and female students. Those who were active identified intrinsic motivation as the most important motive for being physically active.[48] This study explored both the prevalence of participation and attitude towards sports and provided detailed insight into the different types of motivating factors.

In 2023, a descriptive cross-sectional study using pre-designed questionnaire was conducted among first to final year medical students of Devdaha Medical College India to assess knowledge, attitude and practice of physical activities where 162 students were selected purposively and thus obtained data were analyzed using IBM SPSS version 24. Majority of the students had a good knowledge of physical activity and a positive attitude towards physical activities.[49] Most of them (97.67%) have performed physical activities in their life and majority of them (79.07%) were currently involved in physical activities. Cardio training was the most practiced physical activity followed by sports and yoga practices. Lack of company and lack of time were identified as factors abstaining physical activities among them who left practicing physical activities.[49]

In 2020, a study was conducted to assess the perceptions of physical activity among students in a University in the Western Cape, South Africa and to explore factors that lead to participation and

non-participation in sporting activities among university students, as well as their preferred activities. The study used a qualitative ethnographic design to purposefully collect data from nine (9) participants by means of semi-structured one-on-one interviews until data saturation was reached, which was reached after transcribing the first seven interviews and common themes and similarities in the interviews were identified.[50] Open coding was applied when analysing the transcribed data through the ATLAS.ti software programme. The findings revealed six themes: factors that lead to Physical Activity (PA) participation; factors that lead to non-participation in PA; environmental convenience for PA participation; a definition of PA; PA participation preference and benefits of PA.[50] The study recognized that since lifestyle changes during the university period are sustained into adulthood, students tend to engage in risky behaviour such as alcohol and tobacco use, and physical inactivity, which may have long-term negative implications for their health and lead to poor perceptions about their body structure.[50] One-on-one interviews was one of the methods of data collection. They may also have provided the reponse they felt to be appropriate, rather than accurate information about what they actually do leading to bias.

A descriptive cross-sectional study was done to assess the knowledge, attitude and practice of physical sports activities among undergraduate students of University of Nigeria, Nsukka. The population for the study consists of all the regular undergraduate students with and without disabilities of the University of Nigeria, Nsukka campus.[51] A sample of three hundred and twenty (320) students was used for the study which is approximately (2%) of the estimated population. The multi-stage sampling technique was adopted to select the sample. The instrument used for data collection was the close-ended questionnaire. The results of the study revealed that the knowledge possessed by the undergraduates is high with 66.34%. Many of the

students (66.34%) had correct knowledge that physical activities mean selected activities that promote well-being of an individual and also develop healthy soul in a healthy body. The finding revealed that the undergraduates had positive attitude towards physical activities participation. Most of the undergraduates believed that an individual who engages in physical activities will live longer.[51]

2.3 Level of Participation of Medical Students in Sporting Activities

In 2023, a descriptive cross-sectional study was done to determine the prevalence of sports activities and overall physical activity levels among undergraduate students at the College of Applied Medical Sciences, King Saud University, Riyadh, Saudi Arabia. Using the stratified sampling method, a questionnaire-based online survey study was conducted. Physical activity was assessed using the publicly available Global Physical Activity Questionnaire [GPAQ]. A total of 422 students were surveyed. The average age was 19.3 (SD = 1.28). Around 59.15% of the population were males (n = 223), and 40.85% of the population were females (n = 154). Walking was the most popular physical activity for about 42.70% of students, followed by gym or bodybuilding (37.80%), and football (11.60%).[52] The majority of the students engaged in VIA for an average of 1.5 hours per day, followed by 1.4 hours of vigorous-intensity sports, fitness, or leisure activities (VISFRA). Weight control was ranked first among students' goals (33%), then mood improvement (26.60%), and fitness (24.70%). Lack of time was cited by most students (51.40%), followed by an unwillingness to engage in physical activity (29.20%) and a lack of facilities (9.30%). More than half of the students (52.4%, n = 108) engaged in moderate-intensity sports, fitness, or recreational activities (MISFRA) for an average of 1.03 (SD = 0.63) hours each day, which resulted in significant increases in breathing or heart rate for at least 10 minutes

continuously.[52] Most students were physically active and engaged in walking for 10 uninterrupted minutes 5 days a week, followed by gym, bodybuilding, or football. The majority of students who were physically inactive attributed their lack of physical activity to a lack of time, followed by a lack of willingness and access to facilities.[52] A much higher number of male students were sampled, which might have skewed the result and is not adequately representative of female students.

A descriptive cross-sectional study was done to investigate the prevalence of sports/physical activities (PA) and factors influencing chosen activities among medical students in Southern Thailand, Thailand in 2016. The participants were medical students, 18 years old and above, from 3 campuses without disabilities or medical conditions which limited their ability to perform PA. The prevalence of the recommended levels of PA was measured using Global Physical Activity Questionnaire (GPAQ).[53] The association between the demographic data and the recommended PA levels were analyzed by univariate and multivariate analysis. Results showed that a total of 279 medical students participated in the study. Approximately half (49.5%) of the participants were physically active. The median total energy use was 540 metabolic equivalent-min/week (range 0–5640). Male and preclinical students were more likely to be physically active ($p<0.05$). Supportive factors included social support from friends and families. Study-related activities and overtime shift work were barriers. More than half of the medical students had insufficient PA because of study-related activities and overtime shift work.[53] This study duly highlighted the determining factors for participation in sporting activities.

An observational, descriptive, cross-sectional study was conducted at the Faculty of Medicine, University of Khartoum, Sudan in 2022 to determine the prevalence of physical activity among medical students. A total of 336 students were included using systematic random sampling. Data

were collected using an online questionnaire that included the Global Physical Activity Questionnaire (GPAQ). Levels of physical activity were described and compared between males and females. Around 40.5% of the students achieved the recommended level of physical activity.[54] The mean level of vigorous-intensity physical activity was 50.9 minutes/week (SD= 125.7), the mean level of moderate-intensity physical activity was 156.5 minutes/week (SD= 316.1), the mean level of total physical activity was 207 minutes/week (SD= 356). Between males and females, there was a significant mean difference in the level of vigorous-intensity physical activity and total physical activity. The mean level of sedentary behavior was 7.61 hours/day (SD= 4.62) with no significant difference between males and females (p=0.127).[54] Students showed good knowledge about the cardiovascular and mental benefits of physical activity but not about its protective benefits against cancer. Only 19.4% knew the WHO-recommended levels of physical activity. The most common major barriers toward physical activity reported by the students were lack of time (43.8%), and lack of suitable facilities (31.3%) among others. More than half (59.5%) of the students were insufficiently active. Levels of physical activity were significantly associated with the participants' sex but not their knowledge of the recommended levels of physical activity. Males showed higher levels of physical activity. Lack of time was the most common barrier to exercise. More knowledge and education about physical activity should be provided as well as suitable facilities.[54] The target sample of this research has a similar demographic to that of this ongoing study and highlighted challenges in accessing sports facilities in resource-constrained environment.

A descriptive cross-sectional study was done at the University of Medical Sciences, Ondo, Ondo State, Nigeria in 2023 to assess the physical activity of undergraduate students in medicine and physiotherapy programmes. The participants in this study were 216 undergraduate students and

stratified sampling technique was used to recruit students from the department of Medicine and Physiotherapy. A proforma questionnaire was used to collect data on age, gender, level of study, department and other sociodemographic information of each student while International Physical Activity Questionnaire (IPAQ) was used to determine the physical activity level of each participant.[55] The findings showed that most of the students have moderate to high PA. Some factors have been attributed to contributing to low levels of physical activity and this included lack of time, access to safe and convenient places to be active and personal beliefs and attitudes towards physical activity. There was no significant difference in the physical activity of male and female students.[55] This study also included students from other courses, and would have provided a comparative perspective.

2.4. Determinants of Participation in Sporting Activities Among Medical Students

A descriptive cross-sectional study was carried out in 2020 to investigate the prevalence and factors influencing sports and physical activity among 2,452 medical students from the Western Balkan countries of Croatia, Serbia, Slovenia, North Macedonia and Bosnia and Herzegovina. The study was performed by convenience sampling of medical faculties and data were collected through an online survey. The study showed that university schedule, availability of sports centers and increased knowledge of health benefits have been associated with regular SA. Students who are more often involved in regular daily SA and have higher daily SA levels are more likely to be males whose household income is above average.[56] Higher level of PA of medical students is associated with higher knowledge and positive opinions towards healthy lifestyle. One of the major reasons for SA in a past few decades is predominantly the advancement in aesthetics and physical appearance as a way to achieve image of the perfect male

and female bodies. 1–3-year students more frequently did not engage in regular SA than 4–6-year students. Medical students whose household income was above average more often engaged in regular SA.[56] They also had higher level of SA in relation to medical students whose household income was average and below average. No significant difference between the level of SA and the medical students' smoking status. The result of the research also showed that the odds of having regular daily SA were 0.732 times lower for overweight or obese medical students compared to underweight and normal weight medical students. The year of study does not represent a significant predictor of the their SA status. Type of home settlement, whether urban or rural, was not a significant predictor of the level of SA of medical students. Gender, overweight or obesity, and household income are significantly associated with medical students' SA.[56] This study was done across five countries and surveyed 2,452 medical students which is a result with high precision.

A descriptive cross-sectional study done in Thailand to assess the multilevel factors associated with sports and physical activity participation among Thai university students aged 18 years or older with data retrieved from a cross-sectional online survey. Results showed that gender, academic year of study, BMI status, number of sports engaged in per week, sedentary time, fruit and vegetable consumption, commute type to/from university and availability of membership-only recreational facility within the university remained strongly associated with Thai university student sufficient PA.[57] When controlling for other factors, females had 13 % lower odds (OR = 0.87, $p < 0.001$) of having sufficient PA, compared with their male counterparts. The study also found that Thai university students who were in their second academic year were significantly more physically active than freshmen. Students who were underweight and overweight had 19 % (OR = 0.81, $p = 0.039$) and 26 % (OR = 0.74, $p = 0.040$), respectively, lower odds of having

sufficient PA, compared with those who had a normal weight.[57] Students engaging in 6 sports or less had greater probability of having sufficient PA, compared with those who played > 6 sports. Students who engaged in too many types of sports might spend a short duration playing each sport which overall might not contribute to achieving the PA guidelines. Students who engaged in >8 h of sedentary behavior had 70 % higher odds (OR = 1.70, $p < 0.001$) of having sufficient PA, compared to those who engaged in <4 h of sedentary behavior. Students who consumed adequate amounts of fruit and vegetables had 59 % higher odds (OR = 1.59, $p < 0.001$) of having sufficient PA, compared to their peers who consumed inadequate amounts of fruit and vegetables. Students from a university that provided private or membership-only recreational facilities within the university had 40 % greater odds (OR = 1.40, $p = 0.009$) of having sufficient PA, compared to those from a university with no such facilities.[57]

A descriptive cross-sectional study done to assess the personal attributes as determinants of sports participation among 2,610 undergraduates in selected Nigerian universities including University of Benin, University of Ibadan, Obafemi Awolowo University, Ahmadu Bello University and University of Nigeria, Nsukka. The instrument of the study was a validated questionnaire based on Likert scaling design with the use of simple random sampling technique.[58] The findings clearly show that age is an important variable which determines the participatory pattern of students in sport because advancement in age decreases one’s ability to endure environmental stress, working capacity, physical fitness, strength, endurance and oxygen up-take. Gender significantly determines sports participation among undergraduates in selected Nigerian universities with male students more participatory than the females. Marital status significantly dictated the zest of the students participating in sports. Most of the students who were involved in school sports, particularly competitive sport, were predominantly unmarried.[58]

This study spanned across five Nigerian universities and surveyed thousands of medical students which makes it fairly representative and the results dependable.

An institutional based descriptive cross-sectional study was conducted among 481 students drawn from Alex Ekwueme Federal University, Ikwo, and Ebonyi State University, Abakaliki, Ebonyi State to assess the psychological determinants of sports participation among athletes of tertiary institutions in Ebonyi State, Nigeria.[59] The findings showed that fear of injury and anxiety were determinants of sports participation in tertiary institutions in Ebonyi State. It was also found that there was significant difference in the mean response of male and female athletes on the sports participation. This finding implies that sports participation of athletes was determined by psychological factors.[59] This study provided a mental health perspective as a determinant of participation in sports, which is often neglected.

2.5 Differences in Observed Benefits Between Medical Students who Participate in Sports Activities and Those who don't

A descriptive cross-sectional study using online questionnaire was done in China to compare health behaviors, depression, and perceived health status between athlete and non-athlete students of Beijing Sport University, and explore the associations between health behaviors and health outcomes. An online questionnaire survey including Heath Habits Scale for five health-risk behaviors and five health-promoting behaviors, Patient Health Questionnaire-9 (PHQ-9), and 5-point scale for perceived health status was conducted in Beijing Sports University in 2021 among 372 athlete students and 252 non-athlete students aged from 18 to 22. Positive health behaviors, such as getting adequate sleep and participating in vigorous physical activity were

significantly associated with positive health outcomes of athlete students. In contrast, bad habits like overeating, smoking and sedentary lifestyles were associated with negative outcomes.[60] The study found that athlete students generally performed better in health behaviors and led a more active life, compared with non-athlete students and that athlete students ate junk foods less frequently than non-athlete students. The prevalence rate for depression of athlete students was lower than that of the non-athlete students (44.6% vs. 54.4%), the frequency of participating in vigorous physical activity was negatively associated with the presence of depression among both athlete and non-athlete students, and positively associated with perceived health status of athlete students. Compared with non-athlete university students, athlete students lead a healthier life.[60] The age range of the participants (18 to 22) is too narrow and may not be accurately representative of medical undergraduates.

A descriptive cross-sectional study was done at the Management and Science University, Shah Alam, Malaysia to investigate the impact of extracurricular sports activities on 200 medical undergraduates' academic performance as well as the enhancement of their interpersonal skills. The students were chosen via a systematic random sampling method and data was collected with objective structured questionnaire.[61] The results showed that participation in sporting extracurricular activities affected the students' academic moderately in a positive way with a mean ($M=2.3973$, $SD=0.7$). Besides, enhancement of interpersonal skills shows correlation coefficient (r) equals 0.0553, indicating a significant moderate positive relationship with value $p < 0.001$, indicates that the coefficient is significantly different. The correlation analysis indicates that the strength association between the undergraduates' extracurricular involvement and interpersonal skills has a significant moderate positive relationship ($r = 0.553$) and that the correlation coefficient is significantly different from zero ($P < 0.001$).[61]

A descriptive cross-sectional study was done to find out the perceived health benefits of sports participation among undergraduates in Afe Babalola University, Ado-Ekiti, Ekiti State, Nigeria. Self-structured modified questionnaire was used to elicit information from the respondents. The simple random sampling techniques was used to select the candidates from the target population which comprised of students of Afe Babalola University.[62] A total of two hundred and thirty-one (231) respondents participated in the study forming the sample size for the study. The result of the findings showed that all the variables tested were significant and that the university undergraduates who participated in sports activities significantly experienced the perceived health benefits of sports participation and also got involved in spite of their academic activities. The benefits of recreational participation recorded includes momentary relief or escape from the need to attend to daily affairs for the participating students. Others include an opportunity to develop and enhance their physical, mental, or emotional capacity, which non-participants may lack.[62] This study has similar demographic characteristics as the ongoing study, however the sample size is limited which makes the result less powerful.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 STUDY AREA

This research will be conducted at the University of Benin. The University of Benin is situated in Benin City which is the capital of Edo State. Edo State is one of Nigeria's 36 states, it is located within the South-South geopolitical zone of Nigeria. The state was established in 1991, emerging from the Northern segment of the former Bendel State. It encompasses an area of 19,743 square kilometers and is positioned between latitudes 6°23'55"N to 6°27'39"N and longitudes 5°36'18"E to 5°44'18"E. The state shares its borders with Ondo State to the west, Anambra State to the east, Kogi State to the northeast, and Delta State to the southeast. Edo State is home to diverse ethnic groups, including Benin, Esan, Etsako, Owan, and various smaller tribes. The state hosts a total of seven universities, comprising one Federal university, two State universities, and four privately owned institutions.[63]

Benin City, an ancient urban center, serves as the capital and administrative hub of Edo State. Its geographical coordinates span latitude 60 06'N to 60 30'N and longitude 50 30'E to 50 45'E, relative to the Greenwich meridian. Covering an area of 500 square kilometers, it's positioned 200 miles east of Lagos and 25 miles north of the Benin River. As of the 2006 census, the city had a population of 1,147,188, with a projected population of 1,782,000 for 2021. The

predominant ethnic group in Benin City is the Benin people, and their language is Benin. The city's economic activities primarily revolve around transportation and small-scale trading. Additionally, there are industrial establishments including brewing factories, a petroleum storage depot, a battery assembly factory, and several small-scale pharmaceutical production facilities. Benin City boasts several higher education institutions, including the University of Benin, Tayo Akpata University of Education, Benson Idahosa University, and Wellspring University. It's divided into four local government areas (LGAs) out of the 18 LGAs in Edo State – Egor, Oredo, Ikpoba-Okha, and Uhunmwunode.[63]

The University of Benin (UNIBEN), established in 1970, is a federal institution of higher education. Initially founded as a technology institute, it gained full university status on June 1, 1971, as approved by the National University Commission (NUC). Accredited by the NUC, UNIBEN offers diverse academic programs at diploma, undergraduate, and postgraduate levels. The activities going on in the university include both non-academic and academic activities. The University of Benin which commenced activity academic activities at the site of the Old Teachers' Training College on Ekehuan Road (which is now one of the campuses of the University – Ekehuan Campus) with 109 students, now has an estimated 60,000 student population who are spread across the campuses of the University. Presently, the total student enrolment stands at over 40,000 students made up of both full-time and part-time students including post-graduate programs; and about 4,000 academic staff. The campuses contain 15 faculties; 14 of the faculties are located at the Ugbowo Campus while 1 faculty is at the Ekenwan Campus. The current vice chancellor is Prof. Edoba Omoregie. The campus faculties in UNIBEN include Agriculture, Arts, Education, Engineering, Environmental Sciences, Law, Life Sciences, Management Sciences, Pharmacy, Physical Sciences, Social Sciences, Veterinary Medicine and

a College of Medical Sciences which composed of the School of Basic Medical Sciences, School of Medicine, Dentistry and Institute of Child Health.

The Faculty of Medicine at UNIBEN was established in 1973. The establishment of the medical school was a crucial step in addressing the growing need for medical professionals in Nigeria and the broader region.[64]

A crucial component of medical education is clinical training. UNIBEN's medical school established affiliations with reputable hospitals and healthcare institutions, notably the University of Benin Teaching Hospital (UBTH), to provide students with hands-on clinical experience. These affiliations allowed students to interact with patients, apply theoretical knowledge and hone practical skills under the mentorship of seasoned medical practitioners.

In Nigeria, medical doctors are trained for a period of 6 years, with each of the years regarded as a level. The first year (100 level) is the preliminary year, the second (200 level) and third (300 level) years are pre-clinical years, and the fourth to sixth years (400 level to 600 level) are regarded as clinical period of training. The university admits an average of 150 students each year.[64]

3.2 STUDY DESIGN

A descriptive cross-sectional study design will be used for this study.

3.3 STUDY DURATION

This study will be carried out between 2024 and 2025.

3.4 STUDY POPULATION

The study population will be comprised of medical students of the University of Benin, Benin City, Edo State.

3.5 SELECTION CRITERIA

3.5.1 Inclusion Criteria

i. Medical students of University of Benin from 200 to 600L who will be present at the time of the study.

ii. Those that give informed consent.

3.5.2 Exclusion Criteria

i. Medical students of University of Benin who will be on outside postings at the time of the study.

3.6 SAMPLE SIZE DETERMINATION

The minimum sample size (n) will be calculated using the Cochran formula for a cross-sectional study.[65]

$$n = \frac{Z^2pq}{d^2}$$

Where,

n = minimum sample size

Z = standard normal deviation set at 1.96 (at 95% confidence interval)

d = degree of precision set at 0.05

p = prevalence rate of a particular characteristics of the target population (a prevalence rate of 66.3% will be used. This is the percentage of students that participate in sports activities in a study done at University of Benin in 2024).[66]

Therefore,

$p = 66.3\%$

$= \frac{66.3}{100}$

$= 0.663$

$q = 1 – 0.663$

$= 0.337$

Hence:

$$\frac{(1.96)^2 \times 0.663 \times 0.337}{(0.05)^2}$$

$n = 343.33$

$n \approx 343 + 10\%$ room for attrition

$=343+34 = 377$

Thus, minimum sample size for this study is 377. However, for the purpose of this study a sample size of 380 will be used.

3.7 SAMPLING TECHNIQUE

The respondents for this study will be selected using a stratified sampling technique.

Computation of the number of students to be selected

Step one

A list of the population of undergraduate students at each level of study will be retrieved from the dean's office. The total population of students in each level of medical school will be calculated. A stratified sampling technique will be utilized to select the respondents based on the population of undergraduate students at each level of undergraduate study within the department which formed the basis of each stratum.

A sampling fraction will be obtained using the formula: minimum sample size (n) / population size (N).

$$sampling\ fraction = \frac{nf}{N}$$

$$Sampling\ fraction = \frac{350}{1{,}265}$$

$$Sampling\ fraction = 0.277$$

This sampling fraction will be used to determine the proportional allocation of respondents for each stratum. Then, in each stratum, respondents will be chosen to participate in the study.

A systematic sampling technique will be used to select students in each stratum. The sampling interval will be computed for each level.

Sampling interval = N/n

Where;

N = total number of students in each level

n = sample size allocated to each level

The class list for each level will serve as a sampling frame from which students will be selected using a systematic sampling technique. The first student will be selected by simple random sampling using a table of random numbers after which, a systematic sampling interval will be used to select subsequent students.

Step two

Respondents from each stratum (class) will be selected using simple random sampling by balloting.

3.8 DATA MANAGEMENT

3.8.1 DATA COLLECTION AND COLLATION

A structured self-administered questionnaire will be used for this study. The questionnaire was designed to contain both open-ended and closed-ended questions. The survey will assess student: knowledge of exercise via the American Adult Knowledge of Exercise Recommendations Survey (AAKERS), exercise habits through the International Physical Activity Questionnaire (IPAQ) Long Form, and exercise self-efficacy through the Self-Efficacy for Exercise Scale (SEES). The questions will be grouped into six sections as follows:

Section A: Sociodemographic Characteristics of respondents

This section will be designed to gather information regarding the respondent's sociodemographic characteristics. These characteristics will include age, sex, marital status, religion, ethnic group, class.

Section B: Knowledge of benefits of sporting activities

This section will assess the knowledge of medical students about benefits of sporting activities such as a athletics or football.

Section C: Attitudes of Medical Students toward sporting activities

This section will assess the attitude of Nigerian medical students to sports.

Section D: Level of Medical Students' participation in sporting activities

This section will assess the of Medical Students' participation in sporting activities.

Section E: Determinants of participation in sports

This section will be designed to identify the factors that determine the participation of Nigerian medical students in sports.

Section F: Compare the observed benefits between those who participate and those who do not.

METHOD OF DATA COLLECTION

The questionnaire will be self-administered because the study will be carried out among medical students who are educated people. However, the researchers will be around to clarify and assist the respondents where necessary.

3.8.2 DATA PRESENTATION

The results obtained will be presented using tables, charts and prose.

3.8.3 PRE-TESTING

Pre-testing will be carried out among Nursing students at Benson Idahosa University, Benin City.

Ten percent of the sample size (35 questionnaires) in the proportion will be used for pretesting. The aim is to identify errors, effect corrections and ensure validity and reliability of the questionnaire to aid appropriate collection of data. Appropriate corrections will be made where applicable to the questionnaire before commencement of this survey.

3.8.4 DATA ANALYSIS

The completed questionnaires will be collected and thoroughly checked for any inconsistencies. Data sorting and coding will be done. Data will be entered and analyzed with IBM Statistical Package for Social Sciences (SPSS) version 25.0 software.

Multivariate analysis using binary logistic regression will be carried out to further determine the significant predictors of outcome variable likelihood of going abroad for postgraduate study among medical students. Exploratory variables that were associated with the outcome variable in univariate analysis will be included in the initial logistic models of multivariable analysis. The crude and adjusted odds ratio together with their corresponding 95% confidence intervals will be computed. The level of significance for all statistical associations will be set at $p < 0.05$.

SCORING SYSTEM

KNOWLEDGE SCORE

A total of 23 responses addressing 4 knowledge domains. A score of 1 will be given for correct response and 0 for incorrect response giving a maximum achievable score of 23 and a minimum of 0. The scores will be converted to percentages and grouped as follows:

Adequate Knowledge: scores ≥ 60%

Inadequate Knowledge: scores < 60%

ATTITUDE TOWARDS SLEEP

A total of 10 questions using a 5-point Likert scale (from strongly agree = 5 to strongly disagree = 1). The total score ranged from 10 to 50. Participants who scored 30 (60% of the total score) or more will be categorized as having a positive attitude. In contrast, the participants whose scores were less than 30 will be categorized as having a negative attitude.

Scores will be converted to percentages and grouped as follows:

Positive attitude: Scores: > 60%

Negative attitude: < 60%

3.9 ETHICAL CONSIDERATION

Ethical approval will be sought and obtained from the University of Benin Teaching Hospital Ethics and Research Committee.

Participation will be voluntary and verbal informed consent will be obtained from the respondents before administering the questionnaires. Names and addresses will be omitted to ensure confidentiality. The respondents will be informed that they have the right to withdraw from the interview at any time and that withdrawal poses no loss or harm.

3.10 STUDY LIMITATIONS

This study will rely on information provided by the respondents and may therefore be limited by recall bias. It may also be limited by some errors made by the researchers during the course of the study.

CHAPTER FOUR

RESULTS

A total of 387 Medical students in the University of Benin, Benin City, Edo state, Nigeria participated in this study with a 100% response rate. The results are presented in line with the objectives as follows:

Section A: socio-demographic characteristics of respondents

Section B: knowledge of benefits of sporting activities

Section C: attitudes of medical students toward sporting activities

Section D: level of medical students' participation in sporting activities

Section E: determinants of participation in sports

Section F: Compare the observed benefits between those who participate and those who do not.

SECTION A: SOCIODEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Table 1: Sociodemographic Characteristics of respondents

Sociodemograpgh	Frequency (n=387)	Percent
Age (in years)		
< 20	89	23.0
20 -29	291	75.2
30 - 39	6	1.6
40 - 49	1	0.3
Mean ± SD	22.16 ± 3.33	
Sex		
Male	207	53.5
Female	180	46.5
Religion		
Christian	365	94.3
Muslim	20	5.2
African traditional religion	2	0.5
Ethnicity		
Benin	131	33.9
Igbo	60	15.5
Esan	54	14.0
Yoruba	38	9.8
Urhobo	27	7.0
Owan	19	4.9
Etsako	17	4.4
Ijaw	13	3.4
Hausa	7	1.8
Ibibio	5	1.3
Igala	4	1.0
Kwale	4	1.0
Ika	3	0.8
Idoma	2	0.5
Others	3	0.8
Level		
200	69	17.8
300	57	14.7
400	33	8.5
Path pharm	41	10.6
500	59	15.2
600	45	11.6
Final year	83	21.4

Others – Ogoni, Jukun, Igbanke

Table 1: Sociodemographic Characteristics of respondents…

Sociodemograpgh	Frequency (n=387)	Percent
Monthly allowance		
<5000	18	4.7
5000-9999	26	6.7
10,000-19,999	32	8.3
20,000-29,999	58	15.0
>30,000	253	65.4
Place of Residence		
School hostel	238	61.5
Off campus	127	32.8
Home	22	5.7

Among the 387 respondents, the majority were aged 20–29 years, accounting for 291 (75.2%), followed by those under 20 years at 89 (23.0%). A few were aged 30–39 years, 6 (1.6%), and just 1 (0.3%) was within the 40–49 age bracket. The mean age of the respondents was 22.16 ± 3.33 years. By sex, 207 (53.5%) were male and 180 (46.5%) were female. Regarding religion, 365 (94.3%) were Christians, 20 (5.2%) were Muslims, while only 2 (0.5%) identified with African traditional religion. In terms of ethnicity, the largest group were Benin with 131 (33.9%), followed by Igbo at 60 (15.5%), Esan at 54 (14.0%), Yoruba at 38 (9.8%), Urhobo at 27 (7.0%), Etsako at 17 (4.4%), Owan at 19 (4.9%), Ijaw at 13 (3.4%), Hausa at 7 (1.8%), and Ibibio at 5 (1.3%). Respondents who identified with other ethnic groups were 16 (4.1%).

Across academic levels, the highest representation was from final-year students with 83 (21.4%), followed by those in 200 level with 69 (17.8%), 500 level with 59 (15.2%), 300 level with 57 (14.7%), 600 level with 45 (11.6%), pathology/pharmacology level with 41 (10.6%), and 400 level with 33 (8.5%). With respect to monthly allowance, 253 (65.4%) received more than ₦30,000, while 58 (15.0%) earned ₦20,000–₦29,999, 32 (8.3%) earned ₦10,000–₦19,999, 26 (6.7%) earned ₦5,000–₦9,999, and only 18 (4.7%) received less than ₦5,000.

As for their place of residence, a greater proportion, 238 (61.5%), lived in school hostels, while 127 (32.8%) lived off-campus, and 22 (5.7%) stayed at home.

SECTION B: KNOWLEDGE OF BENEFITS OF SPORTING ACTIVITIES

Table 2: Awareness of the benefits of sporting activities

Variables	Frequency (n=387)	Percent
Heard of benefits of sporting activities		
Yes	357	92.2
No	30	7.8
Source of information (n=357)		
Internet	220	61.6
Friends	70	19.6
Television	41	11.5
School	12	3.4
Newspaper	6	1.7
Parents	4	1.1
Self-experience	3	0.8
Textbook	1	0.3

Out of the 387 respondents, 357 (92.2%) had heard about the benefits of sporting activities, while 30 (7.8%) had not. Among those who had heard (n=357), the most common source of information was the internet, reported by 220 (61.6%) respondents. This was followed by friends, cited by 70 (19.6%), and television, reported by 41 (11.5%). Fewer respondents mentioned school 12 (3.4%), newspapers 6 (1.7%), parents 4 (1.1%), self-experience 3 (0.8%), and textbooks 1 (0.3%) as their sources of information.

Table 3: Knowledge of the sporting facility in UNIBEN

Variables	Frequency (n=387)	Percent
Location of sports facilities		
Yes	361	93.3
No	26	6.7
Knowledge the opening and closing time of sport facilities		
Yes	151	39
No	236	61
Number of times you visited sports complex monthly		
0	178	46
1	64	16.5
2	43	11.1
3	31	8
4	27	7
5	25	6.5
>5	19	4.9

A majority of respondents, 361 (93.3%), reported that they knew the location of the sports facilities within the university, while only 26 (6.7%) did not. However, a lesser proportion, 151 (39.0%), had knowledge of the opening and closing times of the sports facilities, compared to 236 (61.0%) who did not.

Regarding the number of times students visited the sports complex in a month, 178 (46.0%) had not visited it at all. Meanwhile, 64 (16.5%) visited once monthly, 43 (11.1%) visited twice, 31 (8.0%) visited three times, 27 (7.0%) visited four times, 25 (6.5%) visited five times, and 19 (4.9%) visited more than five times in a month.

Table 4: Knowledge of benefits of sporting activities

Variables	True Freq (%)	False Freq (%)	I don't know Freq (%)
KNOWLEDGE OF PHYSICAL BENEFITS (n=357)			
Sporting activities help in weight management	337 (97.4)	8 (2.1)	2 (0.5)
Sporting activities reduce risks of chronic diseases like diabetes and hypertension	366 (94.6)	9 (2.3)	12 (3.1)
Sporting activities reduce sleep quality	33 (8.5)	324 (83.7)	30 (7.8)
Sporting activities enhance our physical strength and flexibility	380 (98.2)	5 (1.3)	2 (0.5)
Sporting activities suppress the immune system	19 (4.9)	347 (89.7)	21 (5.4)
KNOWLEDGE OF PSYCHOLOGICAL BENEFITS (n=357)			
Sporting activities reduce stress and anxiety	345 (89.1)	17 (4.4)	25 (6.5)
Sporting activities improve mood and reduce symptoms of depression	359 (92.8)	8 (2.1)	20 (5.2)
Sporting activities worsens the pparticipants' self-esteem	14 (3.6)	361 (93.3)	12 (3.1)
Sporting activities impairs focus and reduces concentration.	23 (5.9)	348 (89.9)	16 (4.1)
Sporting activities enhance emotional stability	316 (81.7)	24 (6.2)	47 (12.1)
KNOWLEDGE OF SOCIAL BENEFITS (n=357)			
Sporting activities improves social connections and relationships	341 (88.1)	19 (4.9)	27 (7.0)
Sporting activities enhance teamwork and communication skills	351 (90.7)	12 (3.1)	24 (6.2)
Sporting activities worsens leadership ability	14 (3.6)	359 (92..8)	14 (3.6)
KNOWLEDGE OF COGNITIVE BENEFITS (n=357)			
Sporting activities impairs memory function	31 (8.0)	33 (86.1)	23 (5.9)
Sporting activities enhance problem-solving and decision-making skills	312 (80.6)	23 (5.9)	52 (13.4)
Sporting activities improves academic performance	225 (58.1)	74 (19.1)	88 (22.7)
Sporting activities worsens spatial awareness and visual processing	42 (10.9)	303 (78.3)	42 (10.9)
Sporting activities increases the risk of age-related cognitive decline	48 (12.4)	304 (78.6)	35 (9.0)

The findings show that most respondents demonstrated a high level of knowledge of the benefits of sporting activities. A total of 337 (97.4%) correctly identified that sports aid weight management, 366 (94.6%) recognized that they reduce chronic disease risks, and 380 (98.2%) agreed that they enhance physical strength and flexibility. Similarly, 359 (92.8%) acknowledged mood improvement, 341 (88.1%) saw benefits for social connections, and 351 (90.7%) recognized teamwork and communication gains. Knowledge of emotional stability was reported by 316 (81.7%), while 312 (80.6%) identified problem-solving and decision-making benefits. Misconceptions about negative effects such as reduced sleep quality 33 (8.5%), immune suppression 19 (4.9%), impaired focus 23 (5.9%), or worsened leadership 14 (3.6%) were uncommon. However, knowledge was lower for academic performance, with 225 (58.1%) identifying it as a benefit and 88 (22.7%) unsure.

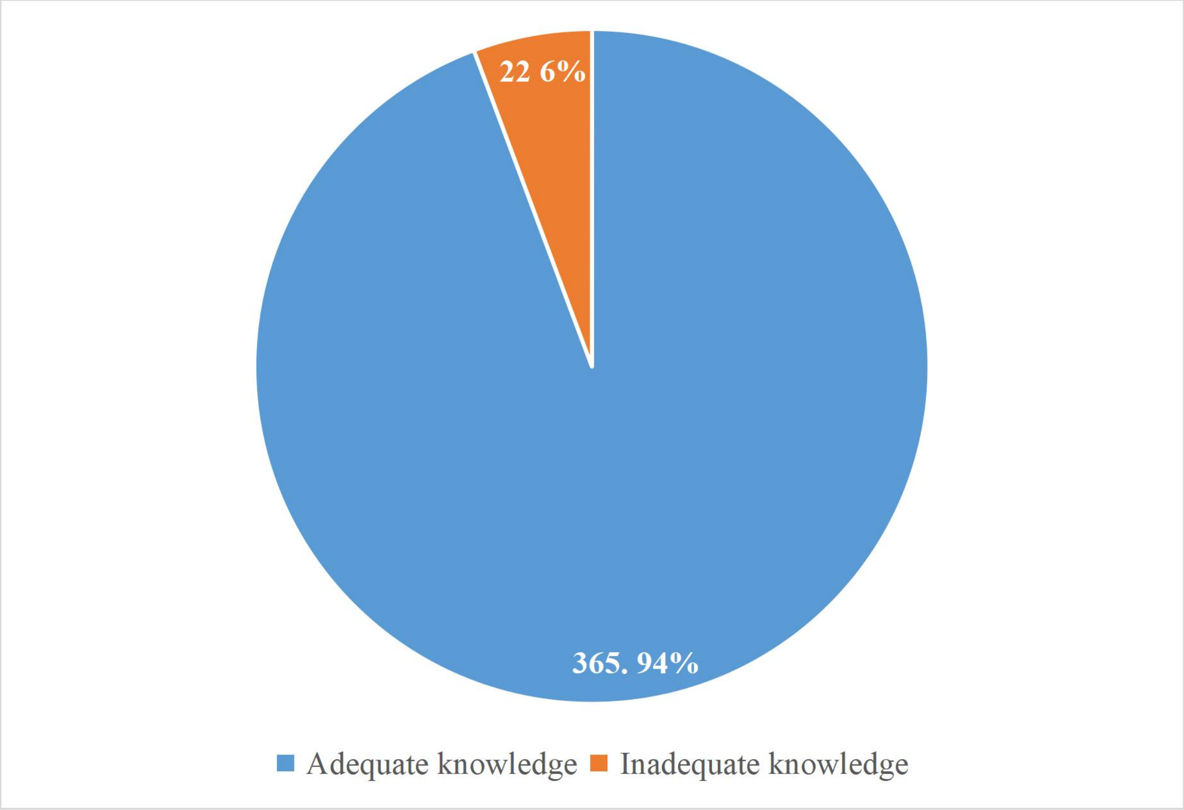

Fig 1: Knowledge of benefits of sporting activities

A majority of medical students, 365 (94.3%), had adequate knowledge of the benefits of sporting activities, while only 22 (5.7%) had inadequate knowledge.

Table 5: Sociodemographic factors associated with Knowledge of benefits of sporting activities

Variables	Knowledge		Test statistics	p-value
	Adequate Freq (%) n=365	**Inadequate Freq (%) n=22**		
Age (in years)			Fisher exact	
< 20	82 (92.1)	7 (7.9)	2.307	0.545
20 -29	276 (94.8)	15 (5.2)		
30 - 39	6 (100.0)	0 (0.0)		
40 - 49	1 (100.0)	0 (0.0)		
Sex			χ^2	
Male	198 (95.7)	9 (4.3)	1.484	0.273
Female	167 (92.8)	13 (7.2)		
Religion			Fisher exact	
Christian	345 (94.5)	20 (5.5)	7.372	0.129
Muslim	19 (95.0)	1 (5.0)		
African traditional religion	1 (50.0)	1 (50.0)		
Ethnicity			χ^2	
Edo Indigene	209 (94.6)	12 (5.4)	0.062	0.827
Non-Edo Indigene	156 (94.0)	10 (6.0)		
Level			χ^2	
Preclinical	116 (92.1)	10 (7.9)	1.767	0.240
Clinical	249 (95.4)	12 (4.6)		
Monthly allowance			Fisher exact	
<5000	17 (94.4)	1 (5.6)	2.107	0.702
5000-9999	24 (92.3)	2 (7.7)		
10,000-19,999	29 (90.6)	3 (9.4)		
20,000-29,999	56 (96.6)	2 (3.4)		
>30,000	239 (94.5)	14 (5.5)		
Place of Residence			χ^2	
School hostel	226 (95.0)	12 (5.0)	0.749	0.669
Off campus	119 (93.7)	8 (6.3)		
Home	20 (90.9)	2 (9.1)		

No statistically significant associations were observed between sociodemographic characteristics and knowledge of the benefits of sporting activities. Among respondents under 20 years old, 82 (92.1%) had adequate knowledge compared to 7 (7.9%) with inadequate knowledge. In the 20–29 years group, 276 (94.8%) had adequate knowledge and 15 (5.2%) inadequate, while all

respondents aged 30–39 years, 40–49 years had adequate knowledge (Fisher's exact test = 2.307, $p = 0.545$). Among males, 198 (95.7%) had adequate knowledge compared to 9 (4.3%) with inadequate knowledge, while for females the figures were 167 (92.8%) and 13 (7.2%) respectively ($\chi^2 = 1.484$, $p = 0.273$). For religion, 345 (94.5%) Christians, 19 (95.0%) Muslims, and 1 (50.0%) African traditional religion adherent had adequate knowledge (Fisher's exact test = 7.372, $p = 0.129$). By ethnicity, 209 (94.6%) Edo indigenes and 156 (94.0%) non-Edo indigenes had adequate knowledge ($\chi^2 = 0.062$, $p = 0.827$).

In terms of study level, 116 (92.1%) preclinical and 249 (95.4%) clinical students had adequate knowledge ($\chi^2 = 1.767$, $p = 0.240$). For monthly allowance, adequate knowledge was reported among 17 (94.4%) earning less than ₦5000, 24 (92.3%) earning ₦5000–₦9999, 29 (90.6%) earning ₦10,000–₦19,999, 56 (96.6%) earning ₦20,000–₦29,999, and 239 (94.5%) earning above ₦30,000 (Fisher's exact test = 2.107, $p = 0.702$). Regarding place of residence, adequate knowledge was recorded among 226 (95.0%) staying in school hostels, 119 (93.7%) off campus, and 20 (90.9%) living at home ($\chi^2 = 0.749$, $p = 0.669$).

Table 6: Predictors of Knowledge of benefits of sporting activities among Respondents

Variables	B (regression coefficient)	Odds Ratio	95% CI for OR		p-value
			Lower	Upper	
Age of respondent	-0.008	0.992	0.849	1.159	0.920
Sex					
Male	0.542	1.719	0.675	4.375	0.256
Female *		1			
Religion					
Christian	2.964	19.384	0.688	######	0.082
Muslim	3.176	23.946	0.468	######	0.114
African traditional religion		1			
Ethnicity					
Edo Indigene	0.105	1.110	0.446	2.767	0.822
Non-Edo Indigene		1			
Level					
Preclinical	-0.542	0.581	0.191	1.765	0.338
Clinical		1			
Monthly allowance					
<5000	0.679	1.971	0.170	22.832	0.587
5000-9999	0.020	1.020	0.199	5.242	0.981
10,000-19,999	-0.045	0.956	0.208	4.397	0.954
20,000-29,999	0.491	1.633	0.354	7.537	0.530
>30,000		1			
Place of Residence					
School hostel	0.825	2.282	0.421	12.381	0.339
Off campus	0.495	1.640	0.300	8.963	0.568
Home		1			

R^2= 20.0- 56.0%, CI= Confidence Interval, OR= Odd ratio, *- reference category

The model explained 20.0–56.0% of the variation in knowledge of the benefits of sporting activities, with no predictors reaching statistical significance. Males were 1.719 times more likely to have adequate knowledge than females, and age showed no effect. Compared to African traditional religion, Christians (OR = 19.384) and Muslims (OR = 23.946) had higher odds, though not significant. Edo indigenes (OR = 1.110) and clinical students (reference group) had

slightly higher knowledge than their counterparts. Monthly allowance and place of residence showed varying odds ratios, but none were significant.

SECTION C: ATTITUDES OF MEDICAL STUDENTS TOWARD SPORTING ACTIVITIES

Table 7: Attitudes of Medical Students toward sporting activities

Variables	Strongly Agree Freq (%)	Agree Freq (%)	Undecided Freq (%)	Disagree Freq (%)	Strongly disagree Freq (%)
I enjoy participating in Sporting activities.	156 (40.3)	153 (39.5)	54 (14)	18 (4.7)	6 (1.6)
Sports are an essential part of my university experience	105 (27.1)	128 (33.1)	85 (22)	48 (12.4)	21 (5.4)
I look forward to playing sports during my free time.	118 (30.5)	147 (38)	50 (12.9)	53 (13.7)	19 (4.9)
I like reading materials on Sporting activities.	70 (18.1)	117 (30.2)	94 (24.3)	78 (20.2)	28 (7.2)
Sporting activities are for everybody	145 (37.5)	155 (40.1)	50 (12.9)	30 (7.8)	7 (1.8)
I would participate in sports even if I were not in the university.	106 (27.4)	139 (35.9)	86 (22.2)	43 (11.1)	13 (3.4)
I prioritize sports over other extra-curricular activities	59 (15.2)	79 (20.4)	106 (27.4)	99 (25.6)	44 (11.4)
I feel comfortable discussing Sporting activities with my friends and siblings.	127 (32.8)	153 (39.5)	59 (15.2)	38 (9.8)	10 (2.6)
Sports is an important part of my identity.	87 (22.5)	95 (24.5)	90 (23.3)	79 (20.4)	36 (9.3)
I like associating with people that do participate in Sporting activities	117 (30.2)	170 (43.9)	71 (18.3)	25 (6.5)	4 (1.0)

A total of 309 (79.8%) enjoyed participating in sports, while 233 (60.2%) considered sports an essential part of their university experience. Similarly, 265 (68.5%) looked forward to playing

sports during their free time, and 300 (77.6%) agreed that sporting activities are for everybody. Reading about sports was less popular, with 187 (48.3%) in agreement.

More than half, 245 (63.3%), stated they would participate in sports even if not in university, while 138 (35.6%) prioritized sports over other extracurricular activities. A total of 280 (72.3%) felt comfortable discussing sporting activities with friends and siblings, and 212 (55.0%) considered sports an important part of their identity. Additionally, 287 (74.1%) liked associating with people who participate in sports.

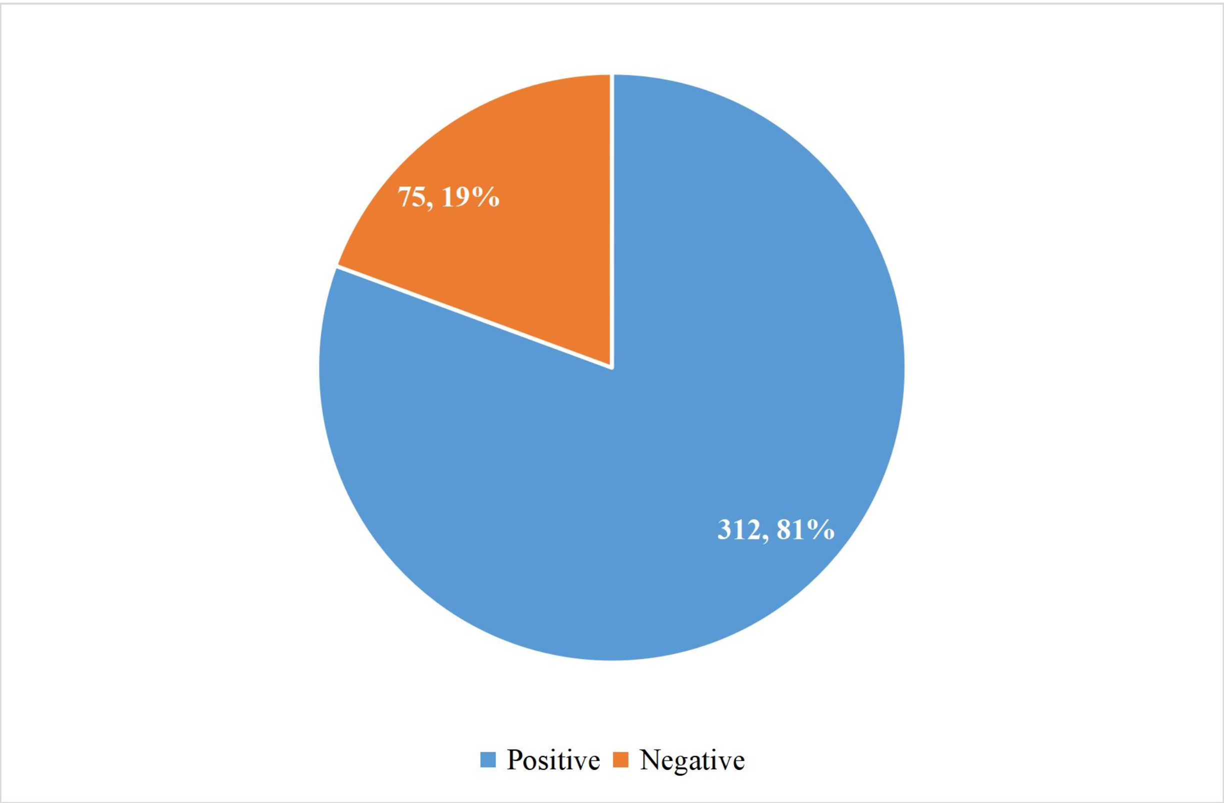

FIG 2: Attitudes of Medical Students toward sporting activities

A greater proportion of medical students, 322 (81.1%), had a positive attitude toward sporting activities, while 75 (18.9%) exhibited a negative attitude.

Table 8: Sociodemographic factors associated with Attitudes of Medical Students toward sporting activities

Variables	Attitude: Positive Freq (%) n=322	Attitude: Negative Freq (%) n=75	Test statistics	p-value
Age (in years)			Fisher exact	
< 20	71 (79.8)	18 (20.2)	1.360	0.768
20 -29	234 (80.4)	57 (19.6)		
30 - 39	6 (100.0)	0 (0.0)		
40 - 49	1 (100.0)	0 (0.0)		
Sex			χ^2	
Male	188 (90.8)	19 (9.2)	29.642	**<0.001**
Female	124 (68.9)	56 (31.1)		
Religion			Fisher exact	
Christian	294 (80.5)	71 (19.5)	1.771	0.440
Muslim	17 (85.0)	3 (15.0)		
African traditional religion	1 (50.0)	1 (50.0)		
Ethnicity			χ^2	
Edo Indigene	173 (78.3)	48 (21.7)	1.805	0.195
Non-Edo Indigene	139 (83.7)	27 (16.3)		
Level			χ^2	
Preclinical	102 (81.0)	24 (19.0)	0.013	>0.999
Clinical	210 (80.5)	51 (19.5)		
Monthly allowance			χ^2	
<5000	18 (100.0)	0 (0.0)	8.606	0.069
5000-9999	18 (69.2)	8 (30.8)		
10,000-19,999	23 (71.9)	9 (28.1)		
20,000-29,999	49 (84.5)	9 (15.5)		
>30,000	204 (80.6)	49 (19.4)		
Place of Residence			χ^2	
School hostel	181 (76.1)	57 (23.9)	8.410	**0.015**
Off campus	111 (87.4)	16 (12.6)		
Home	20 (90.9)	2 (9.1)		
Knowledge of benefits of sporting activities			χ^2	
Adequate knowledge	293 (80.3)	72 (19.7)	0.492	0.590
Inadequate knowledge	19 (86.4)	3 (13.6)		

Sex and place of residence were significantly associated with attitudes toward sporting activities. Among males, 188 (90.8%) had a positive attitude compared to 19 (9.2%) with a negative attitude, while among females, 124 (68.9%) had a positive attitude and 56 (31.1%) a negative attitude ($\chi^2 = 29.642$, $p < 0.001$). Regarding place of residence, positive attitudes were reported

by 181 (76.1%) living in school hostels, 111 (87.4%) living off campus, and 20 (90.9%) living at home ($\chi^2 = 8.410$, $p = 0.015$).

No significant associations were observed for age, religion, ethnicity, study level, monthly allowance, or knowledge of the benefits of sporting activities. For instance, in the <20 years group, 71 (79.8%) had a positive attitude compared to 18 (20.2%) with a negative attitude (Fisher's exact = 1.360, $p = 0.768$), and among Christians, 294 (80.5%) had a positive attitude compared to 71 (19.5%) negative (Fisher's exact = 1.771, $p = 0.440$).

Table 9: Predictors of Attitudes of Medical Students toward sporting activities

Variables	**B (regression coefficient)**	**Odds Ratio**	**95% CI for OR**		**p-value**
			Lower	Upper	
Age of respondent	0.073	1.076	0.942	1.228	0.282
Sex					
Male	1.322	3.750	2.077	6.771	**<0.001**
Female *		1			
Religion					
Christian	18.721	######	0.000		0.998
Muslim	18.830	######	0.000		0.998
African traditional religion		1			
Ethnicity					
Edo Indigene	-0.321	0.726	0.412	1.278	0.267
Non-Edo Indigene		1			
Level					
Preclinical	0.566	1.761	0.773	4.012	0.178
Clinical		1			
Monthly allowance					
<5000	33.102	######	0.000		0.998
5000-9999	-0.823	0.439	0.158	1.216	0.113
10,000-19,999	-0.157	0.855	0.328	2.226	0.748
20,000-29,999	0.315	1.370	0.600	3.127	0.454
>30,000		1			
Place of Residence					
School hostel	-0.950	0.387	0.074	2.017	0.260
Off campus	-0.454	0.635	0.115	3.500	0.602
Home		1			
Knowledge of benefits of sporting activities					
Adequate knowledge	0.620	1.859	0.504	6.852	0.352
Inadequate knowledge		1			

R^2= 12.1 – 19.4%, CI= Confidence Interval, OR= Odd ratio, *- reference category

The variables in the model accounted for between 12.1 – 19.4% of the variation observed in attitudes toward sporting activities among medical students. Male respondents were 3.750 (95%

CI = 2.077–6.771, p < 0.001) times more likely to have a positive attitude toward sporting activities compared to female respondents. Other variables, including age, religion, ethnicity, level in medical school, monthly allowance, place of residence, and knowledge of the benefits of sporting activities, were not statistically significant predictors of attitude.

Specifically, while preclinical students were 1.761 (95% CI = 0.773–4.012, p = 0.178) times more likely to have a positive attitude than clinical students, and students with adequate knowledge of the benefits of sporting activities were 1.859 (95% CI = 0.504–6.852, p = 0.352) times more likely to have a positive attitude than those with inadequate knowledge, these differences were not statistically significant. Religion and the lowest income category (<₦5000) showed extremely high odds ratios due to zero cell counts in reference categories, but their p-values were not significant (p = 0.998), making them unreliable predictors in this context.

SECTION D: LEVEL OF MEDICAL STUDENTS' PARTICIPATION IN SPORTING ACTIVITIES

Table 10: Level of Medical Students' participation in sporting activities

Variables	Frequency (n=387)	Percent
Ever participated in sporting activities in medical school		
Yes	249	64.3
No	138	35.7
Participate in sporting activities everyday (n=249)		
Yes	37	14.9
No	212	85.1
Participate only during your leisure time (n=249)		
Yes	186	74.7
No	63	25.3
Type of sports you participate in (n=249)		
Individual sports	39	15.7
Team sports	96	38.6
Both	114	45.8
Kind(s) of sports you play (n=249)		
Football	156	62.7
Running	72	28.9
Volleyball	46	18.5
Tennis	50	20.1
Weight-lifting	25	10.0
High/long jump	9	3.6
Swimming	23	9.2
Handball	13	5.2
Basketball	11	4.7
Use of sports and leisure facilities (n=249)		
Yes	198	79.5
No	51	20.5
Engagement in vigorous sports activities in the last 7 days (n=206)		
1 day	113	54.8
2 days	37	18.0
3 days	28	13.6
4 days	8	3.9
5 days	5	2.4
6 days	7	3.4
7 days	8	3.9
Duration spent in engaging in vigorous sports (n=206)		
1 hours	89	43.2
2 hours	60	29.1
3 hours	44	21.4
4 hours	9	4.4
5 hours	4	1.9

Table 10: Level of Medic al Students' participation in sporting activities ….

Variables	Frequency (n=387)	Percent
Engagement in moderate sports activities in the last 7 days (n=191)		
1 day	114	59.7
2 days	42	22.0
3 days	17	8.9
4 days	11	5.8
5 days	3	1.6
7 days	4	2.0
Duration spent in engaging in moderate sports (n=191)		
1 hour	86	45.0
2 hours	82	42.9
3 hours	20	10.5
5 hours	3	1.6
Duration spent sitting on a week day (n=387)		
< 1 hour	8	2.1
1 hour	43	11.1
2 hours	40	10.3
3 hours	47	12.1
4 hours	74	19.1
5 hours	132	34.1
>5 hours	43	11.1

Out of 387 medical students surveyed, 249 (64.3%) had participated in sporting activities during medical school, while 138 (35.7%) had not. Among those who had participated (n = 249), only 37 (14.9%) reported engaging in sports daily, whereas a majority of 212 (85.1%) did not. However, 186 (74.7%) of participants engaged in sporting activities during their leisure time, while 63 (25.3%) did not. Regarding the type of sporting activities, 39 (15.7%) engaged in individual sports, 96 (38.6%) took part in team sports, while the majority, 114 (45.8%), participated in both. The most common kind of sport played was football, reported by 156 (62.7%) students. This was followed by running (72; 28.9%), tennis (50; 20.1%), volleyball (46; 18.5%), and weight-lifting (25; 10.0%). Other forms of sports included swimming (23; 9.2%),

handball (13; 5.2%), basketball (11; 4.7%), and high/long jump (9; 3.6%). A total of 198 (79.5%) respondents reported using sports and leisure facilities, while 51 (20.5%) did not. Among 206 respondents who engaged in vigorous physical activity within the last 7 days, 113 (54.8%) did so for 1 day, 37 (18.0%) for 2 days, and 28 (13.6%) for 3 days. Fewer students engaged for 4–7 days: 8 (3.9%) on day 4, 5 (2.4%) on day 5, 7 (3.4%) on day 6, and 8 (3.9%) daily. In terms of time spent on vigorous activities (n = 206), 89 (43.2%) exercised for 1 hour, 60 (29.1%) for 2 hours, 44 (21.4%) for 3 hours, 9 (4.4%) for 4 hours, and 4 (1.9%) for 5 hours.

For moderate activity (n = 191), 114 (59.7%) reported participating on only 1 day in the past week, 42 (22.0%) on 2 days, and 17 (8.9%) on 3 days. Very few engaged on 4 or more days: 11 (5.8%) for 4 days, 3 (1.6%) for 5 days, and 4 (2.0%) daily. Regarding duration of moderate activity, 86 (45.0%) spent 1 hour, 82 (42.9%) spent 2 hours, 20 (10.5%) spent 3 hours, and 3 (1.6%) spent 5 hours. Finally, when asked about time spent sitting on a typical weekday (n = 387), 8 (2.1%) reported sitting for less than 1 hour, 43 (11.1%) for 1 hour, 40 (10.3%) for 2 hours, 47 (12.1%) for 3 hours, 74 (19.1%) for 4 hours, 132 (34.1%) for 5 hours, and 43 (11.1%) sat for more than 5 hours.

SECTION D: DETERMINANTS OF PARTICIPATION IN SPORTS ACTIVITIES

Table 11: Determinants of Participation in Sports Activities

Variables	True Freq (%)	False Freq (%)
Lack of time prevents me from participating in sports	290 (74.9)	97 (25.1)
Financial constraints limit my sports participation	153 (39.5)	234 (60.5)
Physical limitations or injuries hinder my participation	163 (42.1)	224 (57.9)
Academic commitments take priority over sports	339 (87.6)	48 (12.4)
The sports facilities are too far from my residence	186 (48.1)	201 (51.9)

Among the respondents, 290 (74.9%) reported that lack of time prevented them from participating in sports, compared to 97 (25.1%) who did not. A total of 153 (39.5%) stated that financial constraints limited their sports participation, while 234 (60.5%) disagreed. Physical limitations or injuries were cited as a hindrance by 163 (42.1%) respondents, whereas 224 (57.9%) disagreed. Academic commitments were considered a priority over sports by 339 (87.6%) respondents, compared to 48 (12.4%) who did not hold this view. Lastly, 186 (48.1%) indicated that sports facilities were too far from their residence, while 201 (51.9%) disagreed.

Table 12: Sociodemographic factors associated with Medical Students' participation in sporting activities

Variables	Participation in sporting activities		Test statistics	p-value
	Yes Freq (%) n=249	No Freq (%) n=138		
Age (in years)			Fisher exact	
< 20	48 (53.9)	41 (46.1)	6.271	0.063
20 -29	195 (67.0)	96 (33.0)		
30 - 39	5 (83.3)	1 (16.7)		
40 - 49	1 (100.0)	0 (0.0)		
Sex			χ^2	
Male	157 (75.8)	50 (24.2)	25.673	**<0.001**
Female	92 (51.1)	88 (48.9)		
Religion			χ^2	
Christian	234 (64.1)	131 (35.9)	3.959	0.123
Muslim	15 (75.0)	5 (25.0)		
African traditional religion	0 (0.0)	2 (100.0)		
Ethnicity			χ^2	
Edo Indigene	139 (62.9)	82 (37.1)	0.469	0.521
Non-Edo Indigene	110 (66.3)	56 (33.7)		
Level			χ^2	
Preclinical	64 (50.8)	62 (49.2)	14.945	**<0.001**
Clinical	185 (70.9)	76 (29.1)		
Monthly allowance			χ^2	
<5000	11 (61.1)	7 (38.9)	17.075	**0.002**
5000-9999	10 (38.5)	16 (61.5)		
10,000-19,999	14 (43.8)	18 (56.3)		
20,000-29,999	37 (63.8)	21 (36.2)		
>30,000	177 (70.0)	76 (30.0)		
Place of Residence			χ^2	
School hostel	151 (63.4)	87 (36.6)	3.015	0.234
Off campus	87 (68.5)	40 (31.5)		
Home	11 (50.0)	11 (50.0)		
Knowledge of benefits of sporting activities			χ^2	
Adequate knowledge	236 (64.7)	129 (35.3)	0.280	0.649
Inadequate knowledge	13 (59.1)	9 (40.9)		
Attitudes of Medical Students toward sporting activities			χ^2	
Positive	236 (75.6)	76 (24.4)	89.598	**<0.001**
Negative	13 (17.3)	62 (82.7)		
Lack of time prevents me from participating in sports			χ^2	
True	208 (71.7)	82 (28.3)	27.489	**<0.001**
False	41 (42.3)	56 (57.7)		
Financial constraints limit my sports participation			χ^2	
True	109 (71.2)	44 (28.8)	5.252	**0.023**
False	140 (59.8)	94 (40.2)		
Physical limitations or injuries hinder my participation			χ^2	
True	124 (76.1)	39 (23.9)	16.896	**<0.001**
False	125 (55.8)	99 (44.2)		
Academic commitments take priority over sports			χ^2	
True	228 (67.3)	111 (32.7)	10.126	**0.002**
False	21 (43.8)	27 (56.3)		
The sports facilities are too far from my residence			χ^2	
True	114 (61.3)	72 (38.7)	1.453	0.244
False	135 (67.2)	66 (32.8)		

Among the significant factors associated with participation in sporting activities, a higher proportion of males 157 (75.8%) participated compared to females 92 (51.1%) ($\chi^2 = 25.673$, $p < 0.001$). Clinical students 185 (70.9%) were more involved than preclinical students 64 (50.8%) ($\chi^2 = 14.945$, $p < 0.001$). Participation increased significantly with higher monthly allowances ($\chi^2 = 17.075$, $p = 0.002$). Students with positive attitudes 236 (75.6%) were far more likely to participate than those with negative attitudes 13 (17.3%) ($\chi^2 = 89.598$, $p < 0.001$). Those who cited lack of time 208 (71.7%) participated more than those who did not 41 (42.3%) ($\chi^2 = 27.489$, $p < 0.001$). Students acknowledging financial constraints 109 (71.2%) participated more than those without 140 (59.8%) ($\chi^2 = 5.252$, $p = 0.023$). Those with physical limitations or injuries 124 (76.1%) were more involved than those without 125 (55.8%) ($\chi^2 = 16.896$, $p < 0.001$). Finally, students who prioritized academic commitments 228 (67.3%) participated more than those who did not 21 (43.8%) ($\chi^2 = 10.126$, $p = 0.002$).

Table 13: Predictors of Medical Students' participation in sporting activities

Variables	B (regression coefficient)	Odds Ratio	95% CI for OR		p-value
			Lower	Upper	
Age of respondent	0.027	1.027	0.926	1.139	0.615
Sex					
Male	0.589	1.803	1.035	3.139	**0.037**
Female *		1			
Religion					
Christian	21.323	######	0.000		0.999
Muslim	21.820	######	0.000		0.999
African traditional religion*		1			
Ethnicity					
Edo Indigene	0.033	1.034	0.599	1.785	0.905
Non-Edo Indigene*		1			
Level					
Preclinical	-0.883	0.413	0.201	0.852	**0.017**
Clinical*		1			
Monthly allowance					
<5000	-0.366	0.694	0.200	2.410	0.565
5000-9999	-0.895	0.409	0.141	1.183	0.099
10,000-19,999	-0.736	0.479	0.179	1.285	0.144
20,000-29,999	-0.463	0.629	0.299	1.323	0.222
>30,000*		1			
Place of Residence					
School hostel	1.209	3.352	1.116	10.069	**0.031**
Off campus	1.017	2.766	0.908	8.431	0.074
Home*		1			
Knowledge of benefits of sporting activities					
Adequate knowledge	0.321	1.378	0.431	4.410	0.589
Inadequate knowledge*		1			
Attitudes of Medical Students toward sporting activities					
Positive*		1			
Negative	-2.742	0.064	0.030	0.138	**<0.001**
Lack of time prevents me from participating in sports					
True	0.677	1.968	0.996	3.889	0.051
False*		1			
Financial constraints limit my sports participation					
True	0.196	1.216	0.666	2.222	0.525
False*		1			
Physical limitations or injuries hinder my participation					
True	0.775	2.172	1.229	3.837	**0.008**
False*		1			
Academic commitments take priority over sports					
True	0.339	1.404	0.583	3.380	0.449
False*		1			
The sports facilities are too far from my residence					
True	-0.697	0.498	0.283	0.875	**0.015**
False*		1			

R^2= 32.7 – 44.9%, CI= Confidence Interval, OR= Odd ratio, *- reference category

The variables in the model accounted for between 32.7 – 44.9% of the variation observed in participation in sporting activities among medical students.

The male students were 1.80 times more likely to participate in sports than females (95% CI: 1.035–3.139, $p=0.037$). Preclinical students were less likely to participate than clinical students (OR=0.413, 95% CI: 0.201–0.852, $p=0.017$). Students residing in school hostels were over three times more likely to participate compared to those living at home (OR=3.352, 95% CI: 1.116–10.069, $p=0.031$). Those with physical limitations or injuries were more likely to participate (OR=2.172, 95% CI: 1.229–3.837, $p=0.008$), while students with a negative attitude toward sports (OR=0.064, 95% CI: 0.030–0.138, $p<0.001$) and those perceiving sports facilities as too far (OR=0.498, 95% CI: 0.283–0.875, $p=0.015$) were less likely to participate.

SECTION F: COMPARE THE OBSERVED BENEFITS BETWEEN THOSE WHO PARTICIPATE AND THOSE WHO DO NOT

Table 14: Observed Benefits between Those Who Participate and Those Who Do Not

Variables	Participation in sporting activities		Test statistics	p-value
	Yes Freq (%) n=249	No Freq (%) n=138		
In the past academic year, how many times were you absent from school due to illness			Fisher exact	
None	232 (76.3)	72 (23.7)	89.772	**<0.001**
1-2	17 (22.1)	60 (77.9)		
3-5	0 (0.0)	6 (100.0)		
> 5	0 (0.0)	0 (0.0)		
Ever been hospitalized or placed on bed rest due to preventable illness in the past year			χ^2	
Yes	14 (21.5)	51 (78.5)	62.381	**<0.001**
No	235 (73.0)	87 (27.0)		
Ever repeated a class or academic year in medical school			χ^2	
Yes	43 (75.4)	14 (24.6)	3.588	0.072
No	206 (62.4)	124 (37.6)		
Ever failed a professional exam or continuous assessment			χ^2	
Yes	44 (64.7)	24 (35.3)	0.005	>0.999
No	205 (64.3)	114 (35.7)		
Ever experienced burnout or academic stress that affect your performance			χ^2	
Yes	114 (65.5)	60 (34.5)	0.191	0.671
No	135 (63.4)	78 (36.6)		

Among the observed benefits, only two variables showed statistically significant differences between participants and non-participants in sporting activities. Absence from school due to illness was less frequent among participants, with 232 (76.3%) reporting no absences compared

to 72 (23.7%) of non-participants ($p < 0.001$). Likewise, hospitalization or bed rest due to preventable illness in the past year was reported by only 14 (21.5%) of participants versus 51 (78.5%) of non-participants ($p < 0.001$).

CHAPTER FIVE

DISCUSSION

The findings from this study revealed a mean (SD) age of 22.16 (3.33) years. This is expected given the long duration of medical training and the fact that some students may have enrolled in other programs before gaining admission into medicine. A similar mean age was reported in a descriptive cross-sectional study conducted among medical students in Manipur, India, where the mean age was 22.5 years [48].

Over half of the respondents were males, a higher proportion were of Benin origin, and most were Christians. This is likely because Edo State, located in the South-South geopolitical zone, has a predominance of Christianity. Sociocultural expectations and gender roes often prioritize education of males, while females may be encourages toward early marriage, childbearing anf less demanding profession considered female-friendly. In addition, medicine is perceived as highly demanding, time-intensive and prestigious profession which families may feel is more suitable for males, since women are traditionally expectected to balance career and domestic responsibilities. This finding contrasts with a study conducted in the United States on the knowledge and habits of exercise among medical students, where females constituted the higher proportion of respondents [45].

Over nine-tenth of the respondents were aware of the benefits of sporting activities, with the internet and friends emerging as the major sources of information. A probable reason for this high level of awareness could be that medical students are generally exposed to health-related concepts during their academic training, and the idea of sporting activities as a form of physical exercise is already widely promoted in society. The internet being the predominant source of

information is not surprising, as medical students tend to rely heavily on digital platforms for both academic and non-academic knowledge, given the ease of accessibility and the widespread use of smartphones and social media among young adults. This finding is in tandem with a study that assessed baseline knowledge and attitudes towards advising patients about physical activities, which similarly reported the internet as a leading source of information [67]. Likewise, the fact that a majority of the respondents had adequate knowledge of the benefits of sporting activities may be attributed to their medical background, which places emphasis on the importance of healthy lifestyles. This is in keeping with studies done in Sudan and Nigeria [46, 68], where students had good knowledge about the cardiovascular and mental benefits of physical activity. The factors found to influence the overall knowledge of respondents were curriculum and level however these were not statistically significant in this study. Since university years are a formative period, awareness of the role of physical activity in boosting immunity, enhancing mental health, and improving productivity can encourage sustainable lifestyle practices. This not only protects them against the health risks associated with sedentary living during medical training but also ensures a healthier workforce in the long run, reducing burnout and premature morbidity among doctors.

In this study, about four-fifths of respondents demonstrated a positive attitude towards sporting activities. This favorable disposition can be largely explained by their adequate knowledge of the benefits of physical activity, which is reinforced through medical training. Medical students are continuously exposed to the importance of exercise in preventing chronic conditions such as hypertension, diabetes, and obesity, as well as its role in enhancing mental wellbeing. In the Nigerian setting, where sports like football and athletics are not only culturally celebrated but also widely practiced, this medical knowledge further strengthens their inclination to value sporting activities. Consequently, the combination of cultural exposure and professional

knowledge appears to account for the positive attitudes reported among the respondents. These positive attitudes align with the trend seen in other Nigerian medical schools, where students often recognize the value of sports despite heavy academic workloads. This is similar to studies done in India and Nsukka, Nigeria where medical students had favorable attitude toward physical activity [48, 51]. Given the heavy academic workload and stress inherent in medical training, maintaining a positive outlook on sports serves as a vital coping mechanism for stress relief, mental health promotion, and enhanced productivity. More importantly, as future healthcare providers, medical students' attitudes towards physical activity will strongly influence how they counsel patients on lifestyle modification and health promotion.

With respect to factors associated with attitude towards sporting activities, this study revealed that sex and place of residence were significant determinants. Male respondents were 3.7 times more likely to exhibit a positive attitude towards sporting activities compared to their female counterparts. This may reflect the cultural context in Nigeria, where males are often more encouraged and socially supported to participate in sports than females. Place of residence was also found to be significant, as students residing in hostels showed a more positive attitude towards sports compared to those living off campus. This could be attributed to easier access to the university sports Centre, as well as the peer influence and group participation that hostel life fosters. Interestingly, this finding contrasts with a study in India, where no significant differences in attitudes were observed between male and female students[48]. Encouraging female participation through gender-sensitive strategies can reduce disparities, while improving access to facilities for off-campus students can foster more positive attitudes. Addressing these gaps will promote equity in physical activity engagement and contribute to reducing the future burden of lifestyle-related diseases.

Despite the high level of knowledge and generally positive attitudes, actual participation in sporting activities among respondents was only moderate. Slightly above two-thirds of medical students at the University of Benin reported having ever participated in sporting activities during medical school, while only about one-tenth engaged in sports on a daily basis. The moderate level of participation in this study may be attributed to the heavy academic workload typical of medical training, which leaves limited time for extracurricular engagement. This indicates a gap between knowledge, attitude, and level of participation in sporting activities. A similar pattern was observed in a study conducted in Thailand, where approximately half of the participants were physically active [53]. Further underscoring that awareness and favourable attitudes do not necessarily translate into consistent participation. Physical inactivity predisposes medical students to non-communicable diseases such as hypertension, diabetes, and obesity. This risk is further heightened by their predominantly sedentary lifestyle and poor dietary habits, which are often consequences of tight academic schedules. In addition, lack of regular physical activity contributes to stress, anxiety, and burnout, which are already common among medical trainees.

Football was the most popular activity, followed by jogging and indoor games like table tennis. The popularity of football among medical students may be explained by its cultural relevance in Nigeria, where it is the most celebrated and widely played sport. Football also requires minimal equipment, can be played in groups, and serves as a social bonding activity, which makes it particularly attractive in a university setting. Another probable reason why football is the most common sporting activity among medical students is the easy accessibility of a football field located within the hostel which make student naturally gravitate towards it compared to other sports that might need specialized courts and equipment. This finding contrasts with a study done in Saudi Arabia, where walking was the most popular physical activity for students, followed by

gym or bodybuilding and football [52]. Reliance on football as the predominant form of exercise may inadvertently exclude students who prefer individualized activities and may also limit participation among females, who are often less encouraged or provided with equal opportunities in competitive team sports. This underscores the importance of universities diversifying sporting opportunities by strengthening facilities for jogging, gym workouts, aerobics, and indoor games, thereby ensuring that all students, regardless of sex or personal preference, can actively participate in physical activity and enjoy its health benefits.

Sociodemographic factors associated with the level of participation in this study included sex, level of study, place of residence, and monthly allowance. Male respondents were 1.8 times more likely to participate in sports than females, while preclinical students were less likely to participate compared to their clinical counterparts. Furthermore, students residing in school hostels were over three times more likely to engage in sporting activities than those living at home. The greater participation among clinical students could be linked to their increased awareness of the health benefits of physical activity as they progress through medical training, as well as more flexible scheduling compared to the rigorous demands of preclinical coursework. These findings are consistent with studies conducted in Saudi Arabia, Sudan, Thailand, and Nigeria [52, 54, 53 & 55], which similarly reported higher levels of participation among males and preclinical students in sporting activities. However, this contrasts with a study conducted in Nigerian universities, which identified age and marital status, rather than sex or level of study, as the significant predictors of sports participation [58]

The main factors contributing to low levels of participation in this study were lack of time, financial constraints, physical limitations or injuries, and competing academic commitments. Interestingly, our findings showed that students with physical limitations or injuries were 2.1

times more likely to participate in sports, suggesting that some individuals may use physical activity as a means of rehabilitation or coping. These barriers, however, were consistently emphasized by respondents and reflect the demanding nature of medical training. Similar results were reported in a study from Saudi Arabia, where lack of time, limited willingness, and inadequate access to facilities were significant determinants of low participation in sporting activities [52]. Nigerian literature has also highlighted lack of time, the absence of safe and convenient spaces, and personal beliefs or attitudes towards physical activity as important contributors to inactivity [55]. In contrast, a study conducted in Ebonyi State, Nigeria identified fear of injury and anxiety as the major determinants of sports participation[59]. The persistence of these barriers is particularly worrisome given recent reports of sudden deaths among young doctors at their duty posts, often related to undiagnosed cardiovascular or metabolic conditions. The combination of heavy workloads, sedentary lifestyles, and limited engagement in physical activity places medical students and doctors at higher risk of such outcomes. Coupled with the ongoing brain drain that further stretches the remaining workforce, neglecting student participation in sports may have long-term consequences for both individual health and the resilience of the healthcare system. Encouraging physical activity within medical schools therefore goes beyond personal fitness; it is a preventive health strategy that can reduce future morbidity and mortality among doctors while ensuring a healthier, more sustainable workforce.

This study revealed important health benefits associated with participation in sporting activities. A majority of regular participants reported fewer absences from school due to illness, and hospitalization or bed rest for preventable conditions within the past year was less common compared to their counterparts who did not engage in sports. The observed benefits of sporting activities may be due to improved immunity, reduced risk of preventable illnesses, and better

mental health associated with regular exercise. By enhancing resilience and serving as a coping mechanism against stress, sports help reduce absenteeism and hospitalization among medical students. These findings are consistent with a study conducted in Beijing, which showed that the prevalence of depression was lower among athlete students than non-athletes, and that frequent participation in vigorous physical activity was negatively associated with depression while being positively associated with perceived health status [60]. By actively engaging in sports, medical students not only safeguard their own health and academic performance but also embody the principles of preventive medicine. As future doctors, their lifestyle choices carry influence beyond the classroom; students who embrace physical activity are better positioned to inspire patients and communities to adopt healthier habits. In the long run, this translates into a ripple effect that promotes a healthier society, reduces the burden of lifestyle-related diseases, and strengthens public health outcomes.

CONCLUSION

- Over nine-tenths of the medical students in the University of Benin have adequate knowledge of the benefits of sporting activities
- Over four-fifths of the medical students in the University of Benin have positive attitude toward sporting activities.
- Only two-thirds of medical students at the University of Benin have participated in sporting activities, while only about one-tenth engaged in sports on a daily basis.
- The determinants of participation in sporting activities among medical students in the University of Benin included sex, level of study, place of residence, lack of time, financial constraints, physical limitations or injuries and competing academic commitments
- Students who participated in sporting activities reported notable health benefits compared to their counterparts, including fewer absences from school due to illness and reduced hospitalization or bed rest for preventable conditions.

RECOMMENDATION

To the Government

1. The government should strengthen health promotion campaigns highlighting the importance of sporting activities in maintaining physical and mental well-being among young adults, particularly university students.
2. Policies should be instituted within the medical school curriculum to formally incorporate sporting activities into the academic workload, thereby positioning physical activity as a vital element of professional training and long-term health promotion..
3. The government should continue to support national inter-university sporting programs that encourage participation and foster a culture of fitness among students..

To University Management

1. Sports facilities within the campus and hostels should be expanded and properly maintained to make them more accessible to students regardless of residence.
2. Incorporate structured sports and physical activity programs into the medical school curriculum to ensure regular participation despite academic demands.
3. Organize periodic sensitization and awareness campaigns on the importance of regular exercise for both physical and mental wellbeing.

To Medical Students

1. Form peer-support groups or sports clubs to encourage collective participation and sustain motivation despite tight academic schedules.

2. Adopt balanced lifestyles that combine academic excellence with regular physical activity, thereby serving as role models for future patients and the wider society.

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APPENDIX I

QUESTIONNAIRE

Dear respondent, I am Onaiwu Paul Nosayaba, a 600 level student at the School of Medicine, University of Benin, Benin City. I am researching to assess the **PREVALENCE, DETERMINANTS AND ATTITUDES OF MEDICAL STUDENTS TOWARDS SPORTING ACTIVITIES IN THE UNIVERSITY OF BENIN, BENIN CITY**, Edo State, Nigeria. This questionnaire will serve as a tool for data collection in this research. Your sincere response will be helpful and the information given here will be appreciated and treated with confidentiality.

SECTION A: SOCIODEMOGRAPHIC CHARACTERISTICS

1. Age in years as at last birthday ___________________
2. Sex: Male ( ) Female ( )
3. Religion: Christian ( ) Islam ( ) ATR ( ) Others ( )
4. Ethnicity: Benin ( ) Esan ( ) Owan ( ) Igbo ( ) Yoruba ( ) Hausa ( ) Others…
5. Level : 200 ( ) 300 ( ) 400 ( ) PathPharm ( ) 500 ( ) 600 ( ) Final year ( )
6. How much is your monthly allowance? < N 5000 ( ) N 5000 - N 9,999 ( )N 10,000 – 19,999( ) N 20,000 - N 29,999( )> N 30, 000( )
7. Place of Residence: School Hostel ( ) Off-Campus ( ) Home ( )

SECTION B: KNOWLEDGE OF BENEFITS OF SPORTING ACTIVITIES

8. Have you heard of benefits of sporting activities? Yes[ ] No[ ]
9. If Yes, where did you hear about it? Television [ ] Newspaper [ ] Friends [ ] Internet [ ] Others specify ________
10. Do you know the location of the sports facilities in the university? Yes[ ] No[ ]
11. Do you know their opening and closing time? Yes[ ] No[ ]
12. How many times do you visit the sports complex in a month? a)0[ ] b)1[ ] c)2[ ] d)3[ ] e)4[ ] f)5 [ ] others__________

B (i) KNOWLEDGE OF PHYSICAL BENEFITS

13. Sporting activities help in weight management. True [ ] False [ ] I don’t know [ ]

14. Sporting activities reduce risks of chronic diseases like diabetes and hypertension True [ ] False [ ] I don’t know [ ]

15. Sporting activities reduce sleep quality. True [ ] False [ ] I don’t know [ ]

16. Sporting activities enhance our physical strength and flexibility. True [ ] False [ ] I don’t know [ ]

17. Sporting activities suppress the immune system. True [ ] False [ ] I don’t know [ ]

B (ii) KNOWLEDGE OF PSYCHOLOGICAL BENEFITS

Sporting activities…

18. Reduce stress and anxiety. True [ ] False [ ] I don't know [ ]

19. Improve mood and reduce symptoms of depression. True [ ] False [ ] I don't know [ ]

20. Worsens the participants' self-esteem . True [ ] False [ ] I don't know [ ]

21. Impairs focus and reduces concentration. . True [ ] False [ ] I don't know [ ]

22. Enhance emotional stability. True [ ] False [ ] I don't know [ ]

B (iii) KNOWLEDGE OF SOCIAL BENEFITS

23. Improves social connections and relationships . True [ ] False [ ] I don't know [ ]

24. Enhance teamwork and communication skills. True [ ] False [ ] I don't know [ ]

25. Worsens leadership ability. True [ ] False [ ] I don't know [ ]

B (iii) KNOWLEDGE OF COGNITIVE BENEFITS

26. Impairs memory function. True [ ] False [ ] I don't know [ ]

27. Enhance problem-solving and decision-making skills . True [ ] False [ ] I don't know [ ]

28. Improves academic performance True [ ] False [ ] I don't know [ ]

29. Worsens spatial awareness and visual processing True [ ] False [ ] I don't know [ ]

30. Increases the risk of age-related cognitive decline True [ ] False [ ] I don't know [ ]

SECTION C: ATTITUDE OF UNDERGRADUATES TOWARDS SPORTING ACTIVITIES

S/N	ITEMS	Strongly Agree	Agree	Undecided	Disagree	Strongly disagree
31.	I enjoy participating in Sporting activities.					
32.	Sports are an essential part of my university experience					
33.	I look forward to playing sports during my free time.					
34.	I like reading materials on Sporting activities.					
35.	Sporting activities are for everybody					
36.	I would participate in sports even if I were not in the university.					
37.	I prioritize sports over other extra-curricular activities					

38.	I feel comfortable discussing Sporting activities with my friends and siblings.					
39.	Sports is an important part of my identity.					
40.	I like associating with people that do participate in Sporting activities					

SECTION C: LEVEL OF PARTICIPATION IN SPORTS ACTIVITIES

42. Have you ever participated in sporting activities in medical school? Yes[ ] No[ ]

43. Do you participate in sporting activities everyday? Yes[ ] No[ ]

44. Do you participate only during your leisure time? Yes[ ] No[ ]

45. What type of sports do you participate in? Individual sports[ ] Team sports[ ] Both [ ]

46. Which sports do you play? Football[ ] Running[ ] Volleyball[ ] Tennis[ ] Weight lifting [ ] High/Long jump[ ] Swimming[ ] Handball[ ] None[ ] Others[ ]

47. Do you make use of sports and leisure facilities? Yes[ ] No[ ]

48. During the last 7 days, on how many days did you do vigorous sports activities like heavy volleyball, aerobics, football or fast bicycling? a)1 day b)2 days c)3 days d)4 days e)5 days f)6 days g) 7days

If No vigorous sports activities, Skip to question 50

49. How many hours per day did you spend doing vigorous sports activities on one of those days?

1 [ ] 2[ ] 3[ ] 4[ ] 5[ ] others[ ]

50. During the last 7 days, on how many days did you do moderate sporting activities like bicycling at a regular pace, or doubles tennis? Do not include walking

a)1 day b)2 days c)3 days d)4 days e)5 days f)6 days g) 7days

If No moderate physical activities, Skip to question 52

51. How many hours per day did you spend doing moderate sports activities on one of those days?

1 [ ] 2[ ] 3[ ] 4[ ] 5[ ] others[ ]

52. During the last 7 days, how many hours per day did you spend sitting on a week day?

1 [ ] 2[ ] 3[ ] 4[ ] 5[ ] others[ ]

SECTION D: DETERMINANTS OF PARTICIPATION IN SPORTS ACTIVITIES

53. Lack of time prevents me from participating in sports True [ ] False [ ]

54. Financial constraints limit my sports participation True [ ] False [ ]

55. Physical limitations or injuries hinder my participation True [ ] False [ ]

56. Academic commitments take priority over sports True [ ] False [ ]

57. The sports facilities are too far from my residence True [ ] False [ ]

Section F: Compare the observed benefits between those who participate and those who do not.

58. In the past academic year, how many times were you absent from school due to illness

None ( ) 1 -2 ( ) 3 – 5 ( ) greater than 5 ( )

59. Have you ever been hospitalized or placed on bed rest due to preventable illness in the past year? Yes ( ) No ( )

60. Have you ever repeated a class or academic year in medical school? Yes ( ) No ( )

61. Have you ever failed a professional exam or continuous assessment? Yes ( ) No ( )

62. Have you ever experienced burnout or academic stress that affect your performance? Yes ( ) No ( )