

EXERCISE HABITS AS A DETERMINANT OF MENTAL HEALTH STATUS AMONG UNDERGRADUATE STUDENTS OF THE UNIVERSITY OF NIGERIA, NSUKKA

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Abstract

The study sought to investigate the relationship between exercise habits and mental health status among undergraduates at the University of Nigeria Nsukka. The study was guided by three specific objectives and corresponding research questions, and three hypotheses were tested at a 0.05 level of significance. It adopted a correlational research design. The population of the study was 39,139 undergraduate students at the University of Nigeria Nsukka. A convenience sampling technique was used to select 400 undergraduates. The instrument for data collection is the International Physical Activity Questionnaire (IPAQ-SF) and an adapted questionnaire of the Perceived Stress Scale (PSS). It was validated by three experts from the Department of Human Kinetics and Health Education University of Nigeria Nsukka. Data collected was analyzed using frequency percentages, and point biserial, while the null hypothesis was tested using chi-square at .05 level of significance. The result revealed that there is a significant relationship between intensity of exercise and mental health. The study recommended Enhancing mental health support services for undergraduate students by expanding counselling services and peer support programs to address stress promote overall mental well-being and make it easier for students to get help with stress and mental health by offering more support services on campus.

Keywords: Exercise, mental health, undergraduate, determinant

Introduction

Undergraduate students are the backbone of social and economic development in the future, and their growth and mental health have been the focus of public attention. With the quickening pace of society, pressure from all aspects increases, if there is no good anti-pressure, they will lead to depression and other psychological problems. Many students face stress, anxiety, and depression due to the pressures of academic life, social challenges, and the transition to higher education (Obilade, et al, 2024). Mental health is very essential for the development of young people. It is important at every stage of life even in adulthood. Taking into consideration the mental health of young people is very important to make sure they perform at optimum. Mental health problems have now become very prevalent in society among both the old and young with a large number of people suffering from one mental health problem or the other. Globally, it is estimated that 1 in 7 (14%) of 10–19-year-old people experience mental health conditions yet these remain largely unrecognized and untreated (WHO, 2021). In 2019, 1 in every 8 people, or 970 million people around the world were living with a mental disorder, with anxiety and depressive disorders being the most common (Global Health Data, 2022). In 2020, the number of people living with anxiety and depressive disorders rose significantly because of the COVID-19 pandemic. Initial estimates show a 26% and 28% increase respectively for anxiety and major depressive disorders in just one year (WHO, 2022). In Sub-Saharan Africa (SSA), approximately 23 per cent of adolescents experience mental health issues with some studies suggesting the prevalence could be as high as 27.3 per cent (Hart & Norris, 2024). The rate of mental health problems in Nigeria among adolescents and youth is quite alarming (WHO, 2022).

Nigeria, with its estimated population of over 200 million people, is often described as the “Giant of Africa.” It is a nation filled with vibrant youth who are the driving force behind the country’s growth and development. In low- and middle-income nations like Nigeria, mental diseases like depression and anxiety are quite common among the general population. According to a study, anhedonia (9.1%), suicidal thoughts (7.3%), hopelessness (6.9%), and psychomotor retardation (1.8%) were the most prevalent depressive symptoms among depressed patients in Nigeria (Adewuya et al, 2023). In addition to reports showing very low prevalence for depressive and anxiety disorders, there are no local, reliable data on the prevalence of mental illness in the Nigerian community. All of this ultimately led to the inability of this important issue to receive much attention at the local and international levels, and it has since grown more urgent, particularly during the COVID-19 pandemic (Adewuya et al., 2018).

Mental health problems are also reported among university students in Nigeria (Ayinde et al., 2021). In a study conducted in a Nigerian university, 58% of the student had depression, while 37.0%, 15.7%, 3.9% and 1.67% had mild, moderate, moderately-severe and severe depression, respectively (Oyeyemi et al., 2020). They also have detrimental educational, social, and economic implications, such as low academic performance and a higher risk of dropping out of university (Agnafor et al, 2021). Another similar research developed by Alonso et al. (2018), with first-year students from 19 universities in eight countries, shows that one in three (31.4%) students have suffered some mental disorder in the first year of university. In one in five (20.4%) cases, these disorders have affected their social, personal, work, and academic life, assuming severe disability. A research with Spanish university students from five universities exposes that around 10% of Spanish students declare to have had suicidal thoughts (Rodríguez-Romo, et al., 2022). From the above statistics, is quite obvious that the mental health of undergraduates is a serious matter that needs to be treated. Many scholars have defined mental health (MH) in various ways. The WHO (2022) defines mental health as a state of mental well-being that enables people to cope with the stresses of life realize their abilities, learn well and work well, and contribute to their community. The WHO (2022) also stated that mental health is not just the absence of mental illness or disorders, it also involves having positive sense of self-worth, self-esteem, and resilience in the face of adversity (WHO, 2022). Therefore, understanding the trends in exercise activity levels among young adults is crucial for promoting mental well-being and addressing the evolving mental health needs of this population.

The term exercise is a sub- set of physical activity and in fact both have a number of common elements. For example, both movements are produced by skeletal muscles that expends energy and are measured by kilo caries, which ranges continuously, from low to high and are positively correlated with physical fitness as the intensity, duration and frequency of movements increase. Exercise however is not synonymous with physical activity. Knuttgen (2003) defined exercise as any activity involving the generation of force by activated muscles including activities of daily living, work, recreation and competitive sport. Physical exercise refers to any physical activity that promotes physical and mental development by means of physical movement (Zhang et al, 2022). People who engage in regular physical exercise have a high level of self-confidence and values, leading to greater satisfaction with life, and thus reduced anxiety and depression (Esmacilzadeh, 2018). In the context of this study the researcher describes exercise as a diverse range of physical activities intentionally performed to enhance or maintain physical fitness and overall well-being. This has to be carried out habitually.

Exercise is influenced by one's habit. A habit is a routine behaviour that is performed automatically, often without conscious thought (Collins, 2018). In other words the behaviour becomes ingrained on the individual over time. This can be achieved through repetition or reinforcement. An exercise habit in this study, is a regular and consistent pattern of physical activity that becomes an automatic part of one's daily routine. It involves engaging in physical activities such as walking, running, swimming, or strength training on a frequent basis, with the intention to improve health and/or athletic performance. Complete assessment of exercise habit irrespective of its type must include three components: Frequency, duration and intensity (AICR, 2015). Frequency describes the number of times that the activity is undertaken in a given period (e.g., two times per week). Duration informs about the total time spent in activity during the same period (e.g., 40mins per week). Intensity describes the amount of energy expenditure by a given person during the activity (Asogwa, 2017). Determinants are those factors that can facilitate or hinder behaviour such as participating in health promoting activity. A determinant, within the scope of this study refers to any factor or variable that plays a critical role in influencing or shaping the connection between exercise and mental health among undergraduate exercisers. These determinants encompass a broad array of elements which includes frequency, duration and intensity.

Frequency refers to how often physical activity is performed within a given time frame. According to the World Health Organization (WHO) Guidelines on Physical Activity and Sedentary Behavior, individuals should engage in regular physical activity on most days of the week (WHO, 2020). Intensity refers to the level of exertion during physical activity, which can vary from light to moderate to vigorous. The WHO Guidelines recommend a combination of moderate-intensity and vigorous-intensity aerobic activity to achieve optimal health benefits (WHO, 2020). Duration refers to the amount of time spent engaged in physical activity during each session. According to the WHO Guidelines, adults should aim for at least 150 minutes of moderate-intensity aerobic activity or 75 minutes of vigorous-intensity aerobic activity per week, spread across multiple sessions. Additionally, the WHO stated that muscle-strengthening activities should be performed on two or more days per week. Studies have been carried out across the world and Nigeria in general on how exercise activity determines or influences mental health and well-being and their relationships. Undergraduate students including those in Nsukka, often face significant academic, social and emotional challenges that can impact on their mental health. Regular exercise is a crucial aspect of a healthy lifestyle and has been shown to have a positive impact on mental health. Therefore, developing an exercise habit can have long term benefits for physical and mental well-being. The study will provide valuable insights into the specific needs and experiences of undergraduate students in Nsukka, which could inform policies and programmes to support students' mental health. This therefore, necessitated this study.

Purpose of the Study

The purpose of this study is to investigate exercise behaviour as a determinant of mental health among undergraduate students of University of Nigeria Nsukka specifically this study seeks to determine the:

1. exercise habits of undergraduate students of the University of Nigeria, Nsukka;
2. mental health status of undergraduates of University of Nigeria Nsukka;
3. relationships between exercise habits (regularity, type and intensity of exercise) and mental health status of undergraduate students of the University of Nigeria, Nsukka.

Research Questions

The following research questions were formulated to guide the study:

1. What are the exercise habits of undergraduate students of the University of Nigeria, Nsukka?
2. What is the mental health status of undergraduate students of the University of Nigeria, Nsukka who engage in physical exercise?
3. What are the relationships between exercise habits (regularity, type and intensity of exercise) and the mental health status of undergraduate students of the University of Nigeria, Nsukka?

Hypotheses

The following null hypotheses have been postulated to guide the study and will be guided at 0.05 level of significance:

1. Regularity of exercise is not a significant determinant of mental health among undergraduate students of the University of Nigeria, Nsukka.
2. Type of exercise is not a significant determinant of mental health among undergraduate students of the University of Nigeria, Nsukka.
3. Intensity of exercise is not a significant determinant of mental health among undergraduate students of the University of Nigeria, Nsukka.

Methods

The study adopted a correlational research design. The study was conducted at the University of Nigeria, Nsukka, Enugu State. The choice of the university is due to observations that reveal varying levels of exercise behaviour among students, including intensity, duration, and frequency. Concerns arise regarding the potential impact of exercise behaviour on students' mental health, necessitating further investigation. It is chosen as the area of study because the researcher has observed a high prevalence of mental health problems among undergraduate students. This study also emphasizes the need to address the alarming trend of incessant suicide cases within the university community, underscoring the urgent need for comprehensive mental health support initiatives and suicide prevention programs. Therefore, there is a need to explore the relationship between exercise habit and mental health among university of Nigeria Nsukka, undergraduate students. The population of the study was 39,139 undergraduate students at the University of Nigeria Nsukka. The sample of the study consists of 400 undergraduate exercisers of the university of Nigeria Nsukka. This was arrived using the Taro Yamane formula. Convenience sampling was used to recruit participants from easily accessible locations within the university campus where undergraduate exercisers were likely to be. The instrument for data collection is the International Physical Activity Questionnaire (IPAQ-SF), which contains 7 questions and captures information about exercise activities in a typical week. This questionnaire provides information about the intensity (moderate and vigorous), frequency (days in a typical week), and duration (hours and minutes in a typical day) of PA performed across its three domains. An adapted questionnaire of the perceived stress scale (PSS) was used to assess MH. It is a self-administered screening instrument that aims to detect and assess the mental health status of undergraduate exercisers. The intensity of exercise was calculated and categorized into light intensity (1.5 – 2.9 MET), moderate intensity (3.0 -5.9 MET) and vigorous intensity (6.0 – 8.9 MET). While, mental health status was also calculated and categorized into low mental health status (0 -10), moderate mental health status (11 – 20), high mental health status (21 – 30) and

very high mental health status (31 – 40) in a 40 item scale questionnaire. The face validity of the instrument was done by three experts from the department of Human Kinetics and Health Education, University of Nigeria, Nsukka. The instrument was trial tested among exercisers at State University of Medical and Applied Sciences, Orba. The reliability index of 0.76 was obtained. Data collected was analyzed using frequency percentages, and point biserial, while the null hypothesis was tested using chi-square at .05 level of significance

Results

Research question 1: What are the exercise habits of undergraduate students of the University of Nigeria, Nsukka? Data answering this research question is presented in Table 1.

Table 1: Exercise habits of undergraduate students of the University of Nigeria, Nsukka (n = 346)

S/n	Exercise habits	F	%
	Regularity of engagement in exercise		
1	Daily	63	18.2
2	3–4 times a week	96	27.7
3	Once or twice a week	102	29.5
4	Rarely	51	14.7
5	Never	34	9.8
	On average, how long do you exercise each time?	F	%
6	Less than 15 minutes	43	12.4
7	15–30 minutes	88	25.4
8	30–60 minutes	111	32.1
9	More than 60 minutes	104	30.1
	What type(s) of exercise do you regularly engage in? (Select all that apply)	F	%
10	Aerobic exercises (e.g., running, walking, swimming)	311	89.9
11	Strength training (e.g., weightlifting, body-weight exercises)	87	25.1
12	Yoga or stretching exercises	98	28.3
13	Team sports (e.g., football, basketball)	155	44.8
14	Individual sports (e.g., tennis, badminton)	66	19.1
	Intensity of exercise	F	%
15	Light intensity	93	26.9
16	Moderate intensity	179	51.7
17	Vigorous intensity	74	21.4

Findings in Table 1 indicates that 102 (29.5 %) of the respondents engaged in exercise once or twice in a week, while 96 (27.7 %) engaged in exercise three to four times in a week. On the duration of exercise, the table shows that 111 (32.1 %) of the respondents engaged in exercise for 30 to 60 minutes each time they exercised. This is followed by 104 (30.1 %) that engaged in exercise for over 60 minutes. On the types of exercises engaged in by the undergraduate students, 311 (89.9 %) engaged in aerobic exercises like running, walking and swimming. This is followed by 155 (44.8 %) that engaged in team sports such as football, basketball, handball, etc. Key findings in Table 1 also indicates that 179 (51.7%) of undergraduate exercisers are moderate intensity exercisers. This is followed by 93 (26.9%) and vigorous intensity exercise 74 (21.4%)

Research question 2: What is the mental health status of undergraduate students of the University of Nigeria, Nsukka who engage in physical exercise? Data answering this research question is presented in Table 2.

Table 2: Mental health status of undergraduate exercisers in the University of Nigeria Nsukka who engage in physical exercise (n=346)

S/n	Mental Health Status	f	%
1	Low mental health status	59	17.1
2	Moderate mental health status	129	37.3
3	High mental health status	110	31.8
4	Very high mental status	48	13.9

Key findings in Table 2 above indicate that 129 (37.3%) of undergraduate students of the University of Nigeria Nsukka, possess moderate mental health status. This is followed by high mental health status 110 (31.8%), followed by low mental health status 59 (17.1%) and very high mental health status 48 (13.9%).

Research question 3: What are the relationships between exercise habits and mental health status of undergraduate students of the University of Nigeria, Nsukka? Data answering this research question is presented in Table 3.

Table 3: Point Biserial Correlation (rbp) showing relationship between exercise habit and mental health status of undergraduates of University of Nigeria, Nsukka (n = 346)

S/n	Items	1	2	3	4	5
1	Mental health status	1.00				
2	Regularity of engagement in exercise	0.047	1.00			
3	Duration of engagement in exercise	0.001	0.013	1.00		
4	Type of exercise	0.011	0.017	0.027	1.00	
5	Intensity of exercise	0.281	0.290	0.202	0.313	1.00

Key :

± 0.00 to ± 0.29 = No relationship/Weak relationship

± 0.30 to ± 0.59 = Moderate relationship

± 0.60 to ± 0.99 = Strong relationship

± 1.00 = Perfect relationship

Source: Nwagu and Agbaje (2017)

Data in Table 3 shows that there is weak positive relationship between mental health status and exercise habits of regularity in exercise engagement (rbp = 0.047), duration of engagement in exercise (rbp = 0.001), type of exercise (0.011) and intensity of exercise (rbp = 0.281). this result suggests that there is a relationship between intensity of exercise and mental health status.

Hypothesis 1: Regularity of exercise is not a significant determinant of mental health among undergraduate students of the University of Nigeria, Nsukka.

Table 4: Summary of Chi-square statistics testing the hypothesis that regularity of exercise is not a significant determinant of mental health of undergraduate students of the University of Nigeria, Nsukka (n=346)

Regularity of engagement in exercise	f	%	χ^2	p-value
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1	Daily	63	18.2	42.732	0.061
2	3–4 times a week	96	27.7		
3	Once or twice a week	102	29.5		
4	Rarely	51	14.7		
5	Never	34	9.8		

Result in Table 4 shows that the p-value of .061 for regularity of exercise is not a significant determinant of mental health of undergraduate students of university of Nigeria Nsukka is higher than 0.05 level of significance. The researcher therefore, did not reject the hypothesis. This implies that regularity of exercise is not a significant determinant of mental health of undergraduate students of University of Nigeria, Nsukka.

Hypothesis 2

Type of exercise is not a significant determinant of mental health among undergraduate students of the University of Nigeria, Nsukka.

Table 5: Summary of Chi-square statistics testing the hypothesis that type of exercise is not a significant determinant of mental health of undergraduate students of the University of Nigeria, Nsukka (n=346)

	Type of exercise	f	%	χ^2	p-value
1	Aerobic exercises (e.g., running, walking, swimming)	311	89.9	67.53	0.77
2	Strength training (e.g., weightlifting, body-weight exercises)	87	25.1		
3	Yoga or stretching exercises	98	28.3		
4	Team sports (e.g., football, basketball)	155	44.8		
5	Individual sports (e.g., tennis, badminton)	66	19.1		

Results in Table 5 indicate that the p-value of .770 for a type of exercise is not a significant determinant of the mental health of undergraduate students of the University of Nigeria Nsukka is higher than 0.05 level of significance. The researcher, therefore, did not reject the hypothesis, implying that type of exercise is not a significant determinant of mental health of undergraduate students of University of Nigeria, Nsukka.

Hypothesis 3

Intensity of exercise is not a significant determinant of mental health of undergraduate students of university of Nigeria Nsukka. Data answering this test of hypothesis is presented in Table 6.

Table 6: Summary of chi-square statistics testing the hypothesis that intensity of exercise is not a significant determinant of mental health of undergraduate students of University of Nigeria, Nsukka (n=346)

	Intensity of exercise	f	%	χ^2	p-value
1	Light	93	26.9	327.2	0.00
2	Moderate	179	51.7		
3	Vigorous	74	21.4		

Finding in Table 6 showed that the the p-value of .000 for intensity of exercise is not a significant determinant of mental health of undergraduate students of university of Nigeria Nsukka is less than 0.05 level of significance. To this effect, the researcher did not accept the

hypothesis. This implies that intensity of exercise is a significant determinant of mental health of undergraduate students of University of Nigeria, Nsukka.

Discussions

Findings indicate that 29.5 per cent of the respondents engaged in exercise once or twice in a week, while 27.7 per cent engaged in exercise three to four times in a week. On the duration of exercise, 32.1 per cent of the respondents engaged in exercise for 30 to 60 minutes each time they exercised, followed by 30.1 per cent that engaged in exercise for over 60 minutes. On the types of exercises engaged in by the undergraduate students, the majority engaged in aerobic exercises like running, walking and swimming, followed by team sports such as football, basketball, handball, etc. Key findings also indicate that the majority of the undergraduates engaged in moderate-intensity exercise, followed by light-intensity and vigorous intensity exercise. This finding is expected as this can be attributed to the fact that firstly, moderate-intensity exercise, such as brisk walking, cycling, or swimming, is often perceived as more accessible and feasible for individuals with varying fitness levels and time constraints. Moreover, moderate-intensity activities are generally less strenuous than vigorous-intensity exercises, making them more sustainable for regular participation among a diverse population of undergraduate students. This finding agrees with that of Samarkandi (2022) who reported that the most common type of physical activity was walking.

Findings of the study further revealed that 37.3 per cent of undergraduate students of university of Nigeria Nsukka, possess moderate mental health status, 31.8 per cent have high mental health status 17.1 per cent low mental health status 13.9 per cent and very high mental health status. This result is surprising. This could be influenced by various factors, including the stressors associated with academic demands, social pressures, and personal challenges that students may face during their university experience. The above finding confirms that of Qureshi, et al., (2019), who found in a sample of undergraduate students from Pakistan that a large number of the students (42.6%) had mild depression. The study revealed that there is a weak positive relationship between mental health status and exercise habits of regularity in exercise engagement, duration of engagement in exercise, type of exercise and intensity of exercise. This result suggests that there is a relationship between intensity of exercise and mental health status. However, the hypotheses testing revealed that type and regularity of exercise are not significant determinants of mental health of undergraduate students of the University of Nigeria, Nsukka, while intensity of exercise is a significant determinant of mental health of undergraduate students of the University of Nigeria, Nsukka. This is not surprising, because exercise has been shown to have positive effects on mental health, including stress reduction and mood enhancement. This is in line with Rodríguez-Romo, et al., (2022) who reported the presence of relationships between PA and MH in undergraduate students. The prevalence of moderate mental health status among this population suggests that additional support and interventions may be needed to address underlying mental health concerns. The implications of this finding suggest a need for universities to offer accessible mental health support services, including counselling and peer support groups. integrating mental health promotion into existing wellness programs, reducing stigma surrounding mental health issues, and implementing preventive strategies can help create a supportive campus environment that prioritizes students' overall mental well-being.

Conclusion

Based on the findings of this study it was concluded that majority of undergraduate students in university of Nigeria Nsukka, participate more in moderate intensity exercise. Majority of them have moderate mental health status. Undergraduate exercisers in first year and third year had moderate mental health status while, those in second year and other years had high mental health status.

Recommendations

Based on the findings, discussions and conclusion of the study, the researchers recommends the following:

1. Undergraduate students should maintain consistent exercise habits by aiming for at least 2–3 exercise sessions per week, each lasting 30 minutes or more.
2. They should develop a personalized routine that is sustainable and enjoyable.
3. Undergraduate students should focus on moderate-intensity exercises by prioritizing activities like brisk walking, cycling, swimming, or dancing, which are linked to better mental health outcomes.
4. The university administration should integrate physical activity into academic schedules by offering short physical activity breaks during long lectures or study sessions.

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