

**LEVELS OF PHYSICAL ACTIVITIES BEING PRACTICED BY LIRA UNIVERSITY
UNDERGRADUATE WEEKDAY STUDENTS AT LIRA UNIVERSITY, NORTHERN UGANDA.
A CROSS-SECTION STUDY.**

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Abstract

Background

Regular physical activity lowers the risks of many non-communicable diseases (NCDs) which is the primordial prevention of diseases. Therefore, this study aimed to determine the levels of physical activities being practiced by Lira University undergraduate weekday students at Lira University.

Methodology

A descriptive, cross-sectional study design employing quantitative data collection and analysis techniques was used in this study, stratified sampling technique was used in order to establish a sampling frame from each Faculty after which a probability simple random sampling technique was followed in the selection of the respondents. Data was entered for analysis by SPSS version 20.

Results

200 respondents participated in this study; males were (122) 61% more than females who were (78) 39%. More than half of participants 167(83.5%) leaving only 33(16.6%) who do not engage in PA at any level. The average prevalence level of engaging in very low, low, high, and very high levels of PA this study found is 23.73% and 29.82%, 20%, and 21.45% respectively. Participation in light ($\chi^2 = 23.39$, $df = 1$, $p = 0.000^*$), moderate ($\chi^2 = 10.609$, $df = 3$, $p = 0.014^*$), and heavy physical activities ($\chi^2 = 13.37$, $df = 1$, $p = 0.000^*$) all show significant differences.

Conclusion

The study found that the prevalence of participation in PA is generally at 83.5% but the levels of engagement in PA are categorized as very low, low, high, and very high at 23.73%, 29.82%, 20%, and 21.45% respectively.

Recommendations

Improving participation in physical activity among Lira University undergraduate weekday students should involve a multifaceted approach that addresses various barriers and motivations.

Key Words; Lira University, level of physical activity, prevalence of participation in physical activities.

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Background of the study

The World Health Organization (WHO) defines physical activity (PA) as any bodily movement caused by skeletal muscles that requires energy consumption (WHO, 2020b). PA includes all movements even during leisure time, for transport to go to and from places, or as a part of a person's work (Grujić et al., 2022). Both moderate- and vigorous-intensity PAs improve health mortality (park et al., 2020). WHO and Centers for Disease Control and Prevention (CDC) global recommendations for PA for the population aged 18 to 64 years emphasize that consistency in the frequency, duration, intensity, type, and total amount of

daily (regular) PA is necessary to reduce the risk for mass non-communicable diseases (NCD) (Saqib et al., 2020). That means: at least 150 to 300 min of moderate-intensity aerobic PA, at least 75 to 150 min of vigorous-intensity aerobic PA, or an equivalent combination of moderate-intensity (WHO, 2020a) PA and vigorous-intensity PA throughout the week About 81% of adolescents and 27.5% of adults do not meet the recommended levels of physical activity. Globally, 28% of adults aged 18 years and above were not active enough in 2016 (men 23% and women 32%) (WHO, 2020b). Participation in physical exercises such as; playing football, running, volleyball, netball, and jogging,

are of very great significance in the prevention of non-communicable diseases such as cardiovascular infections, obesity, chronic respiratory infections, and cancer and mental illness. According to the World Health Organization, non-communicable diseases (NCDs) kill 41 million people each year, equivalent to 74% of all deaths globally. Each year, 17 million people die from one of the NCDs before age 70 years, 86% of these premature deaths occur in low- and middle-income countries. Of all the NCD deaths, 77% are in low- and middle-income countries. In Africa, between 50% and 88% of deaths in seven countries, mostly small island nations, are due to non-communicable diseases (gichu et al., 2018).

In Uganda, 33% of total deaths are due to NCDs and for every Ugandan citizen, the probability of dying prematurely from one of the four main NCDs is 22% (meghani et al., 2021). Being physically active is associated with a lower risk of many non-communicable diseases (NCDs) (David et al., 2016). Regular physical activity helps prevent diseases by reducing the risk of stroke, heart disease, cancer, high blood pressure, and osteoporosis (Saqib et al., 2020).

Insufficient physical activity is the 4th leading risk factor for mortality (park et al., 2020). People who are insufficiently physically active have a 20% to 30% increased risk of all-cause mortality compared to those who engage in at least 30 minutes of moderate-intensity physical activity most days of the week (gichu et al., 2018). A person's physical activity level (pal) is defined as that person's total energy use over 24 hours divided by his or her basal metabolic rate (violenholz et al., 2020). Physical activity is any bodily movement produced by skeletal muscles that requires energy expenditure (World Health Organization, 2020a). About 81% of adolescents and 27.5% of adults do not meet the recommended levels of physical activity despite the WHO-issued guidelines on physical activity participation in 2020 (WHO, 2020).

Physical activity levels are measured through means such as; self-report questionnaires which are the most common method of PA assessment and rely on participants. Others include; recall ability, self-report activity diaries/logs, direct observation, and devices (accelerometers, pedometers, heart-rate monitors, armbands) (Dalene & Ekelund, 2023). Regular physical activity is a key protective factor for the prevention and management of non-communicable diseases (NCDs) such as cardiovascular disease, type-2 diabetes, and several cancers (WHO, 2020a). According to the World Health Organization, adults aged 18–64 years should do at least 150–300 minutes of moderate-intensity aerobic physical activity or at least 75–150 minutes of vigorous-intensity aerobic physical activity; or an equivalent combination of moderate- and vigorous-intensity activity throughout the week.

About 2.1% of global disability-adjusted life years are attributable to insufficient physical activity (Vos et al., 2020). A study conducted in Britain to find out how physical inactivity is associated with severe COVID-19 shows that COVID-19 patients who were physically inactive had a 95% chance of hospitalization (Cristina, 2020).

Patients who consistently met the physical activity guidelines had a lower rate of death than those who did not meet physical PA recommendations.

A recent meta-analysis of prospective studies concluded that achieving the WHO-recommended physical activity levels was associated with a 17% lower risk of cardiovascular events and 26% lower incidence of type 2 (Angelina, 2016). Overall, physical inactivity is associated with a 24% higher risk of coronary heart disease, a 16% enhanced risk of stroke, and a 42% higher risk of diabetes. According to the World Health Organization, 31% of individuals 15 years or older are physically inactive and approximately 3.2 million deaths per year are attributed to this unhealthy lifestyle (WHO, 2020). Physical inactivity conservatively cost healthcare systems around the world 53.8 billion dollars in 2013 (ding, 2016). At the current trajectory, it is reported that the goal of reducing insufficient physical activity by 10% by the year 2025 will not be met (Gut Hold et al., 2018). By 19th Oct 2022, WHO reported that more than 80% of adolescents and 27% of adults do not meet the recommended levels of physical activity. This means they do not meet the global recommended levels of physical activity.

The WHO issued guidelines on physical activity participation in 2020 but still 81% of adolescents and 27.5% of adults do not meet the recommended levels of physical activity (WHO, 2020). Among people with physical disabilities, participation in sport, exercise, and other forms of leisure time physical activity has been shown to yield numerous health benefits in Uganda. It is estimated that 85 % of worldwide deaths associated with NCD occur in low- and middle-income countries of which Uganda is inclusive (Peter, 2020). It is projected that NCD cases will overtake infectious diseases by 2030 in sub-Saharan Africa. (isabirye, 2022). A study conducted at Kyambogo University to determine the pattern of physical activity among female students indicates that; lack of time, laziness, limited facilities, financial cost, safety, cultural appropriateness, peer support, and embarrassment are some of the factors that affect physical activity participation (Nannyonjo et al., 2013). About 14.5% of university students are physically inactive (Verma et al., 2022).

The cabinet for the Republic of Uganda approved the new physical activity and sports bill on Monday, 14th November 2022 (Isabirye, 2022) but 23.3% of Ugandans still do not meet the recommended physical activity levels. According to Lira University sports statistics, only 230 out of 1478 students turned up for the inter-faculty sports gala organized by the games union in 2022. In May 2023, the Lira University public health students' association organized a public health run and only 340 students representing 22.6% participated. This study therefore intended to determine the levels of physical activities being practiced by lira university undergraduate weekday students at Lira University.

Methodology

Research Design

The study employed a cross-sectional research design using quantitative data collection and analysis methods.

Study Area and Settings

The study was conducted at Lira University located in Ayere cell. Lira University is located between 2.2510° N, and 32.8210° E in a global positioning system. It is found in Lira City East Division, Lira City in Northern Uganda, East Africa. Lira city has a distance of 342 km from Kampala the Capital City of Uganda. Lira City is almost surrounded by Lira District which is bordered by Pader District to the north, Otuke District to the northeast, Alebtong District to the east, Dokolo District to the southeast, Apac District to the southwest, and Kole District to the west. The university trains students in both health science, management science, and education programs. Lira University has a total of 714 undergraduate weekday students across all faculties.

Study population

All Lira University undergraduate weekday students.

Study procedure

Ethical clearance was obtained from the Lira University Research Ethics Committee upon the approval for the commencement of the data collection by the faculty of public health. The questionnaire was designed and pretested with the representatives of the targeted study group and with relevant authorities from local leaders before actual use in the data collection. The researcher also recruited a few research assistants to assist in the process of data collection. Training on administering the questionnaire and other ethical issues including keeping confidentiality was given to them before any field visit. During the data collection, respondents were briefed, issued a data collection tool and they filled in by themselves. After completing the filling, the research assistants checked for completeness in answering the questions, and those who had not completed were requested to complete thereafter which the data collection tool was picked back by the research assistant. The researchers cooperated and maximized the respondents' time by first explaining the intent of the study and reassuring them about the confidentiality of their feedback. A report for the findings was written and disseminated for utilization and improvement within Lira University.

Eligibility criteria

Inclusion criteria

Only Lira University undergraduate weekday students were eligible to participate in the study and have consented to take part.

Exclusion Criteria

Very sick persons
Those who are drunk

Those not interested in participating in the study

Sample size determination

The sample size is determined using the Slovene formula, $n = N / (1 + Ne^2)$ where n is the sample size, N is the population of the study area and e is the margin of error at 6%.

For $N = 714$,

This implies, $n = N / (1 + Ne^2)$

$$n = 714 / (1 + 714 * 0.06^2).$$

$$n = 199.98$$

$$n = 200$$

Sampling techniques

A stratified sampling technique was used to establish a sampling frame from each Faculty after which a probability simple random sampling technique followed in the selection of the respondents. Respondents were selected from all the faculties within the University. The Researcher used focal research assistants from each faculty to help identify those who can be eligible to participate in the study. The population of undergraduate weekday students from each faculty was obtained from the faculty register and used to establish the sample frame for each faculty. After the establishment of the sample frame, systemic probability sampling was then employed to choose the study participants.

Data collection instrument

Data was collected by the principal investigator (PI) using pretested semi-structured self-administered questionnaires. The tool was developed by reviewing the literature on similar studies where some of the questions that were used in these studies have been adapted and included in this data collection instrument. (I & T, 2018). Each questionnaire consisted of three parts, the Sections included the social-demographic data of the participants and levels of physical activity among participants. Levels of participation in PA were assessed using a four (4) point Likert scale with the scale ratings included; very low, low, high, very high, and the factors that affect participation in physical activity among participants.

Data collection method and procedure

Before data collection, permission was sought from the school administration by the researcher then the participants were identified by simple random sampling from the different strata by the researcher. Each participant who met the inclusion criteria was given, read, and explained, the consent form which they signed to acknowledge their participation in the study. However, participants who declined to consent were not considered for the study. The questionnaires were administered to the students by the researcher to read through the questions and fill in their responses individually.

Data quality control

Validity

Validity is the degree to which results obtained from the analysis of data represent the phenomenon under study (Mugenda & Mugenda, 1999). In this study, a pretest was done to ensure that the instrument was valid for the study. The tools were all checked by an assigned supervisor who is an expert in research to find out whether the questionnaire covers the conceptual domains of the research. The recommendations and suggestions made by the supervisor were all corrected to improve the instruments to ensure that maximum validity is achieved. The tool was pretested among 16 selected samples of respondents, 2 from each faculty at the University except the faculty of Nursing and Midwifery and Faculty of Education pretesting was done with 4 selected participants because of their larger number. Content validity was checked to ensure that the items in the study are fairly representative of the entire domain the test seeks to measure. For construct validity, questions were made precise, clear, and with instructions to guide the respondent. Lastly, face validity was done by a subjective and superficial assessment of whether the measurement procedure used in the study appears to be a valid measure of a given variable or construct.

Reliability

To ensure that the data collected was reliable, a comprehensive item analysis was conducted to ascertain the clarity, completeness, and authenticity of the questionnaire to make sure that they were not ambiguous and were appreciated by the study participants. Conchbacs test was performed on the data sample collected from the pretest and a reliability coefficient of $r=0.8$ and above was considered.

Data management

Data was entered into the Statistical Package for Social Sciences (SPSS 20), Data cleaning was done using Informatica Data Cloud quality to identify missing data and then analyzed.

Data analysis

Descriptive statistical analysis was conducted to assess the levels of participation in physical activity and the associated factors. Different proportions for categorical data were generated and presented in frequency tables, pie charts, and bar graphs. In bivariate analysis the strength of association between independent and dependent variables was tested using Pearson's correlation and P values less than 0.005 were considered significant. A bivariate logistic regression analysis was done to determine the relationship each independent variable has with the dependent variables. Variables that show the level of significance with a P value less than 0.005 were then discussed in Chapter Five.

Study variables

Dependent variable.

Levels of participation in PA. Pearson correlation was formed to assess the relationship between the different dependent variables and levels of participation in different forms of PA.

Independent variables

The independent variables included individual factors such as; age, health status, income level, knowledge of PA, occupation type, and time availability. Socio-demographic factors included; sex, age, religion, marital status, faculty and year of study, residential status, employment status motivation, barriers, and time.

Ethical considerations

Approval

The proposal was presented before the Research and Ethics Committee for the Faculty of Public Health of Lira University for approval. An approval letter was issued and then taken to the respective authorities for permission to be granted to conduct the study.

Informed Consent

Written informed consent was obtained from all the participants after sharing with them the objectives of the study, possible benefits and risks, and the length of time it is expected to take. No personal data was able to leak out during the entire process of this study.

Privacy

Interviews were conducted in places deemed private enough by the interviewer and respondent.

Confidentiality

The researcher did not use identifiers like names, or actual places of residence, in questionnaires or any publications. The data was kept under lock and key and was always only accessible by the Principal Investigator. The information got in the field was coded and fed into a computer with passwords. In times of publication, information was only brought by faculty names and the gender as males and females.

Results

Social demographic characteristics of the study participants. (n=200)

The questionnaires were administered to the 200 participants and 200 questionnaires were obtained answered to completeness hence ensuring a response rate of 100%. The mean age of the participants was 24.15 years, the age range of participants was (19- 46) years while the age interval with the highest number of participants was 18-30 years (167) 83.5% followed by an age interval of 31-45 years (21)10.5% and least age interval was 46-60 years at

(12) 6% years and above. Males were (122) 61% more than females who were (78) 39%. The majority of the participants (134) 67% were in the age category 18-30 years and the least was in the age category 46-60 years at (9) 4.5. On a religious basis. Those from the Christian faith formed the bigger percentage of the respondent (154) 77% followed by the Islamic faith (41) 20.5% and the other denominations constituted (5) 2.5%.

79.5% (159) of the respondents were single people, 20% (40) were married already and only 0.5% (1) had divorced. More than half of the respondents (113) 56.5% were just students without any form of employment while those who were employed were (87) 43.5% of which (17) 8% worked in public service, (30) 15% in private sector, and (40) 20% were self-employed.

Levels of Physical Activity

Almost more than a third of the participants (167) 83.5% said that they participate in physical activity leaving only (33) 16.5% of participants who said they do not participate in any form of physical activity. Only less than half of the participants (74) 37% said they engage in physical activity for five days or more a week while (58) 29%, (66) 33%, and (2) 1% said they engage in physical activity between 3-4 days, 1-2 days, and 0 days respectively. Seven (7) 3.5% of respondents reported not participating in any physical activity in the last seven days while only two (2) 1% reported participating in physical activity six times in the last seven days. 17% (34), 35.5% (71), 26% (52), 12.5% (25), and 4.5% (9) reported that they participated in physical activity once, twice, thrice, four times, and five times respectively. Additionally, engagement in physical activity for 0 days, 1-2 days, 3-4 days, and 5-7 days were considered as not participating in physical activity at all, seldom participation, participating for some time, and as more frequent participation in physical activity respectively.

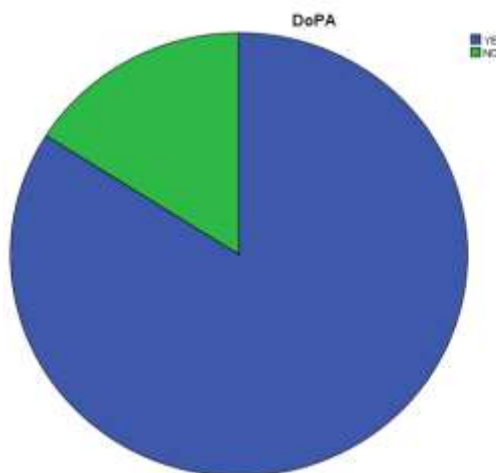


Fig. 1. Pie chart showing prevalence level of participation in PA

Table 1: Levels of different forms of physical activity.

Type of Activity	How many days per week (Tick one ONLY)			
	Very low (0days) 23.73%	Low (1-2 Days) 29.82%	High (3-4 Days) 20%	Very high (5-7 Days) 21.45%
Do you participate in sitting activities such as; reading books, group discussions, or doing artwork, coursework	(3) 1.5%	(54) 27%	(62) 31%	(81) 40.5%
Do you walk outside for fun such as; walking around the compound, or playing with dogs?	(30)s 15%	(55) 27.5%	(54) 27%	(61)30.5%
Do you engage in light activities such as; bowling, fishing, playing cards, and golf with a cart?	(84) 42%	(93) 46%	(20) 10%	(3) 1.5%
Do you engage in physical activities such as; double tennis, dancing, skating, or hiking	(64) 32%	(90) 45%	(29) 14.5%	(17) 8.5%
Do you engage in strenuous activities such as swimming, jogging, cycling, climbing stairs for exercise	(42) 21%	(77) 38.5%	(46) 23%	(35) 17.5%
Do you do any exercise to increase muscle strength or endurance such as lifting weights, pushups, pull-ups, or chin-ups	(56) 28%	(74) 37%	(32) 16%	(38) 19%
Do you engage in flexibility activities such as; stretching, yoga, chair yoga, or tai chi	(73) 36.5%	(62) 31%	(47) 23.5%	(18) 9%
Do you do any housework such as dusting, washing dishes, mopping the floor, ironing, or office work	(30) 15%	(44) 22%	(48) 24%	(78) 39%
Do you do any moderate household activities such as washing windows, scrubbing floors, or moderate manual labor?	(29) 14.5%	(70) 35%	(36) 18%	(65) 32.5%
Do you do any heavy household work such as home repair, painting, moving furniture, or heavy manual work	(57) 28.5%	(59) 29.5%	(53) 26.5%	(31) 15.5%
How many days in a week do you do vigorous physical activities such as; heavy lifting, digging, aerobics, fast cycling	(54) 27%	(63) 31.5%	(43) 21.5%	(40) 20%
Average percentage of PA levels	23.73	29.82	20	21.45

Source; primary data 2024.

Table 2: Univariate Analysis of Socio-Demographic Factors Associated with Physical Activity Levels.

Variable	Category	Frequency	Percentage (%)
Age interval	18-30	134	67
	31-45	57	28.5
	46-60	9	4.5
Gender	Male	122	61
	Female	78	39
Marital status	Single	159	79.5
	Married	40	20
	Divorced	1	0.5
Religion	Christian	154	77
	Islam	41	20.5
	Others	5	2.5
Faculty	Public health	25	12.5
	Nursing and Midwifery	30	15
	Education	44	22
	Computing	25	12.5
	Management Science	50	25
Year of Study	Medicine	26	13
	First-year	62	31

	Second year	63	31.5
	Third year	68	34
	Fourth-year	7	3.5
Employment status	Public service	16	8
	Self-employed	40	20
	Private sector	30	15
	Student	113	56.5
	Other	1	0.5
Times of Participation in Physical Activity	Less than 30 minutes	75	37.5
	30-60 minutes	75	37.5
	60-90 minutes	31	15.5
	90+ minutes	19	9.5
Why participate in physical activity	Physical health benefits	63	31.5
	Stress relief	86	43
	Weight management	38	19
	Socializing with friends	13	6.5
The barrier to participation in physical activity.	Lack of time	52	26
	Lack of motivation	40	20
	Cost of facilities	32	16
	Feeling too tired	31	15.5
	Academic workload	45	22.5
Rating availability of physical activity facilities.	Excellent	15	7.5
	Good	45	22.5
	Fair	64	32
	Poor	73	36.5
	Very poor	3	1.5
Fitness tracking device	Yes	21	10.5
	No	178	89
	Not aware of its availability	1	0.5
Social support	Very supportive	49	24.5
	Somewhat supportive	63	31.5
	Neutral	49	24.5
	Not supportive at all	39	19.5
Type of physical activity.	Walking/running	69	34.5
	Cycling	52	26
	Team sports e.g. football, volleyball, netball	46	23
	Dancing	33	16.5

Source; primary data, 2024.

Bivariate analysis of levels of physical activities.

Do light physical activities

Yes 119(71.00) 88(52.40)

No 48(29.00) 79(47.60)

Do moderate activities

Yes 108(64.80) 59(33.20)

No 47(27.90) 120(42.90)

Do heavy physical activities.

Yes 65(38.90) 143(85.70)

No 115(69.1) 24(14.30)

Source; Primary data 2024.

Discussion

Prevalence of Physical Activity Levels.

In this study, the prevalence of participation in physical activity was 167(83.5%) leaving only 33(16.6%) who do not engage in PA at any level. Comparing it with the study done

by Maja Grujicic and colleagues which found that only about 25-40% of University students globally engage in PA (Grujicic et al, 2022). The design and layout of campus infrastructure can either promote or discourage physical activity and thus can be a reason for these differences (Anne et al., 2024). According to the results of the study by (Galas et al., 2023) which was conducted in Poland, more than 80% of students engage in regular PA. The same study shows that university schedules, availability of sports centers, and increased knowledge of health benefits have been associated with regular PA (Jaesung et al., 2017). The above differences can be attributed to the geographical differences in the locations as well as settings for PA facilities. However, we are interested in knowing to what extent undergraduate weekday students of Lira University engage in PA. From the results of bivariate analysis, we conclude that the year of study, employment status of students, and marital status are the significant variables to participation in PA as described below; while age, religion, and faculty were not significant at all. This is different from the study conducted in Poland that indicates most medical students do not engage in any form of PA compared to other faculties, stating the lack of time due to faculty obligations to be the main excuse to engage in PA (Biddle et al., 2017; Kerr et al., 2018). Differences in curriculum settings and timetables can contribute to these differences. Students from all different faculties, different religions, and different ages have almost equal chances of engaging in PA.

Marital Status and Physical Activity levels.

Marital status significantly influences physical activity participation ($\chi^2 = 20.005$, $df = 4$, $p < 0.000$). Single students are more likely to engage in physical activities (88.7%) compared to married students (76.9%) and divorced students, who showed no participation in physical activity (0%). This study was similar to the study that was done in Western Thailand, where 78% of single students engage in several PAs than their married counterparts (Kotepui et al., 2019). This could be attributed to different lifestyle commitments and social responsibilities.

The year of study significantly affects physical activity participation ($\chi^2 = 20.005$, $df = 6$, $p = 0.003$). First-year students (79.1%) are more active compared to second-year (67.0%), third-year (40.1%), and fourth-year students (31.0%). No available data has been found about the relationship between the year of study and participation in PA.

Employment status shows a significant impact on physical activity levels ($\chi^2 = 33.420$, $df = 2$, $p < 0.000$). Public service employees (24.3%) and self-employed individuals (75.0%) are more likely to participate in physical activities compared to those in private employment (8.7%). This contradicts with the study done by (Alkhaldeh et al., 2024) which indicates that physical activity levels among university students are generally lower than recommended guidelines. This may relate to different job demands and time availability for physical activities. Levels of participation in PA are classified as very low level, low level, high level, and

lastly very high level. Out of the 200 participants who were interviewed, 167 (83.5%) said yes to participation in PA leaving only 33(16.5%) who do not engage in any form of PA. The average prevalence level of engaging in very low, low, high, and very high levels of PA this study found is 23.73% and 29.82%, 20%, and 21.45% respectively. These findings therefore indicate that many of them do not meet the WHO recommended levels of 150 minutes per week per person and for at least 30 minutes a day. Participation in light ($\chi^2 = 23.39$, $df = 1$, $p = 0.000^*$), moderate ($\chi^2 = 10.609$, $df = 3$, $p = 0.014^*$), and heavy physical activities ($\chi^2 = 13.37$, $df = 1$, $p = 0.000^*$) all show significant differences. This indicates that the levels of physical activities performed by students vary significantly, with light and heavy activities being more prevalent.

Conclusion

The study found that the prevalence of participation in PA is generally at 83.5% but the levels of engagement in PA are categorized as very low, low, high, and very high at 23.73%, 29.82%, 20%, and 21.45% respectively. Lack of time is seen as the most significant barrier to participation in PA. Other factors include academic workload, feeling tired, lack of motivation, and lack of accessibility to PA facilities.

Recommendation

Improving participation in physical activity among Lira University undergraduate weekday students should involve a multifaceted approach that addresses various barriers and motivations.

Acknowledgment

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List of Abbreviations.

AFSRHS:	Adolescent-friendly sexual reproductive health services
AIDS:	Acquired immune deficiency syndrome
HIV:	Human immunodeficiency virus
STI:	Sexually transmitted infections
WHO:	World Health Organization
UNFPA:	United Nations Fund for Population Activities
NCD:	Non-Communicable Diseases.
DALYs:	Disability Adjusted Life Years.
PI:	Physical Inactivity.

PI: Principal investigator.
 PA: Physical Activity
 ASE: Attitude, social influence, and self-efficacy
 PAD: Physical Activity for People with a Disability.
 SB: Spina Bifida
 PAL: Physical Activity Levels.
 SES: Social Economic Status.
 DoPA: Do physical Activity.

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Conflict of interest

The author declares no conflict of interest.

Author Biography

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