بسم الله الرحمن الرحيم

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Student's Research Project in Public Health (Group One)

Attitude and Practice of Medical Students Towards Role of Physical Activity in Prevention of Non-communicable Diseases at Nile University, Khartoum, Sudan 2020-2021

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Dedication

This study is whole heartedly dedicated to our beloved parents, who have been the source of our inspiration. To our families and friends who had shared their words of advice and encouragement. We ask the most merciful to guide them in every phase of their life.

Acknowledgement

Firstly, we are grateful to the Almighty for sparing our lives up to this moment, for making this research possible with his assistance.

We are particularly grateful to Nile University administration, our colleagues and all students who participated in this research. We wish to thank both departments of community medicine and internal medicine for providing grounds and supervision for this research.

Abstract

Background: Non-communicable diseases are the leading cause of death and the main issue in modern and future public health worldwide. Non-communicable diseases are amenable to health promotion, prevention and medical interventions. Improved social conditions, quality of diet, body weight, smoking cessation, and increased physical activity can greatly reduce the burden of NCDs.

Methods: This study aims to assess the attitude and practice of medical students towards the role of physical activity in non-communicable diseases prevention in Nile University as perceived by students. An Observational-based analytical, cross-sectional study design. The study revealed the highest frequency of participants lies between the age group of 21-25 years (72.3%).

Result: The study samples were 81 males(43.1%) and 107 females(56.9%). From the studies, (51%) of student do not engage in physical activities and only (49%) of students participate in physical activities. The frequency of participation in physical activities are; Students who engage in physical activities daily were 14(7.4%) and 37 of the students (19.7%) engage weekly, while 40 students (21.3%) engage in physical activity monthly. Students that participate in planned physical activities for health benefits were 86(45.7%), and 4 students (2.1%) practice physical activities for social reasons, while a single student practice physical activities due to doctor's advice 1 (5%).

Conclusion: The study concluded that the majority (83%) of the students have knowledge towards the role of physical activities in prevention of major NCDs. However, they had low frequency of participation in physical activities.

Arabic Abstract

الأمراض غير المعدية (NCDs) هي السبب الرئيسي للوفاة والقضية الرئيسية في مجال الصحة العامة الحديثة والمستقبلية في جميع أنحاء العالم.

الأمراض غير المعدية قابلة لتعزيز الصحة والوقاية والتدخلات الطبية. تحسين الظروف الاجتماعية، ونوعية النظام الغذائي، ووزن الجسم، والإقلاع عن التدخين، وزيادة النشاط البدني يمكن أن تقلل إلى حد كبير من عبء الأمراض غير المعدية.

لتقييم موقف وممارسات طلاب الطب تجاه دور النشاط البدني في الوقاية من الأمراض غير المعدية في جامعة النيل كما يراها الطلاب.

تصميم دراسة تحليلية مقطعية قائمة على الملاحظة.

وكشفت الدراسة أن أعلى معدل تكرار للمشاركين في البحث يقع بين الفئة العمرية من 21-25 سنة (72.3٪) بلغت عينة الدراسة 81 ذكر (43.1٪) و 107 إناث (56.9٪).

من الدراسات، (51٪) من الطلاب لا يشاركون في الأنشطة البدنية و (49٪) فقط من الطلاب يشاركون في الأنشطة البدنية. فيما يتعلق بتكرار المشاركة في الأنشطة البدنية؛ كان عدد الطلاب الذين يمارسون الأنشطة البدنية يوميًا 14 (7.4٪) و 37 من الطلاب (19.7٪) أسبوعياً، بينما 40 طالبًا (21.3٪) يمارسون نشاطًا بدنيًا شهريًا. كان الطلاب الذين يشاركون في الأنشطة البدنية المخطط لها للحصول على مزايا صحية 86 (45.7٪)، و 4 طلاب (2.1٪) يمارسون الأنشطة البدنية لأسباب اجتماعية، بينما يمارس طالب واحد الأنشطة البدنية بناءً على نصيحة الطبيب 1 (5٪).

ولخصت الدراسة إلى أن غالبية الطلاب (83٪) لديهم معرفة بدور الأنشطة البدنية في الوقاية من الأمراض غير المعدية الرئيسية، وأن الطلاب لديهم موقف جيد للمشاركة في الأنشطة البدنية. لسوء الحظ، لم تكن ممارسة الطلاب تجاه مشاركة الأنشطة البدنية جيدة.

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List of Abbreviations

BMI — Body Mass Index

CDC — Centers for Disease Control

CVD — Cardiovascular Disease

IPAQ — International physical Activity Questionnaire

MD — Doctor of Medicine

MPH — Master of Public Health

NCDs — Non-Communicable Disease

PA — Physical activity

PHD — Doctor of Philosophy

SPSS — Statistical Package of Social Science

WHO — World Health Organization

Chapter One: Introduction

1.1- Background

A non-communicable disease is a noninfectious health condition that cannot be spread from person to person. It also lasts for a long period of time. This is also known as a chronic disease.[1]

Four main diseases are generally considered to be dominant Non-communicable diseases mortality and morbidity: cardiovascular disease (includes heart disease and stroke), diabetes, cancer and chronic respiratory diseases (includes chronic obstructive pulmonary disease and asthma).[2]

Non communicable diseases, or NCDS, are by far the leading cause of death in the world. Representing 63% of normal deaths. Non communicable disease kills more than 36 million people each year. Some 80% of all NCD deaths occur in low –income countries.[5]

Risk factors such as person's background; lifestyles, and environment are known to increase the like of certain non-communicable disease. They includes age , gender, genetics, exposure to air pollution , and behaviors such as smoking , unhealthy diet and physical inactivity which can lead to hypertension and obesity, in turn leading to increased risk of many NCDS. Most NCDS are considered preventable because they are cause by modifiable risk factors.[1]

Risks factors of NCDS are grouped into non-modifiable which includes (age, gender, family history, ethnicity, prior stroke or heart attack) and modifiable (unhealthy diet, high blood pressure, high sugar levels, smoking, high cholesterols, physical inactivity, overweight, excessive alcohol and stress.[3]

An important way to prevent NCDS is to focus on reducing the risk factors associated with those diseases. Monitoring progress and trends of NCDS and their risk is important for guiding policy and priorities. Investing in better management of NCDS is critical. Management of NCDS includes detecting, screening and treating these diseases, and providing access to palliative care for people in need. High impact essential NCD intervention can be delivered through a primary health care approach to strengthen early detection and timely treatment.[4]

Evidence shows such interventions are excellent economic investments because, if provided early to patients, they can reduce the need for more expensive treatment. [4]

Non communicable diseases are chronic in nature and may not cure, however, existing evidence indicates that these disease are largely preventable by means of effective intervention that tackle their shared contributory risk factors and the underlying social determinants. In addition, early detection and proper management of such diseases can reduce morbidity and premature death and may improve the quality of life.[6]

1.2-Problem Statement:

Assessing the attitude and practice of physical activity and relation in preventing non-communicable disease in Nile University, because there are a lot of modifiable risk factors of NCDS that can be easily prevented by evaluating the behavior or attitudes of students towards exercise.

1.3-Rational:

To find out the attitude and practice of lack of physical activities among medical students in Nile university.

It is paramount to exercise to ensure that the student reassess their attitude towards exercise in prevention of NCD. Understanding the modifiable risk factors earlier will assist in early intervention and prevention of disease later.

1.4-General Objectives:

To assess the attitude and practice of medical students towards the role of physical activity in non-communicable diseases prevention in Nile University as perceived by students.

1.5-Specific Objectives:

- To determine the proportion of students who practice planned physical activities.
- To know the relation between physical activity and Non communicable diseases as perceived by students.
- To assess the attitude of students towards physical activity.

1.6-Study variable

Gender

Age

Lack of physical activity

Level of study

Barriers

a. Healthy related barriers
b. Academic load
c. Environmental barriers

Chapter Two: Literature review

2.1- At global level:

A study was done in Silesia, Poland, from Medical University of Silesia about "Evaluation of physical activity level in students of Medical University of Silesia in Poland and to focus on the role of physical therapist students in promoting physical activity" the result of which are; The final analysis included 300 students from the schools of physical therapy, midwifery, nursing, pharmacy, cosmetology, and medicine. The short form of the International Physical Activity Questionnaire (IPAQ) was used to evaluate physical activity level. Physical therapist students demonstrated the highest level of physical activity, with (46%) demonstrating a high level of physical activity, (54%) a moderate level of physical activity, and none a low level of physical activity. The largest group of students with a low level of physical activity comprised students from the school of medicine (26%). The number of respondents was relatively small. There was a large group of medical students who, despite being aware of the benefits of physical activity, did not meet the recommended level of physical activity. Physical therapist students are well trained and qualified to promote healthy habits and encourage individuals to undertake regular physical activity.[7]

Another research was conducted in the University of Malaysia Sabah in accordance with the National Health and Morbidity Survey 3 in 2008, about "Physical inactivity among Medical and Non-medical Students" the result of which are; a cross sectional study with a total participation of 300 University Malaysia Sabah's undergraduate students (100 medical students and 200 non-medical students) was done. 49% of medical students were physically inactive compared to 35% non-medical students, OR 1.79(95% CI 1.10,2.91) which was statistically significant. 44% and 30% of female and male students were physically inactive respectively. After adjusted for socio-demographic confounders, gender and year of study were found to be confounders that associated with physical inactivity. The prevalence of physical inactivity among medical students was higher compared to non-medical students and physical inactivity was found higher in female students.[8]

A mixed method study was conducted in the Grampian area of North-East of Scotland, by Amudha S Poobalan, in 2012 about "Physical activity attitudes, intentions and behaviors among 18-25year olds" the result of which are; only 28% of 18-25year olds achieved recommended levels of physical activity which decreased with age. Self-reported overweight/obesity prevalence was 22%, increasing with age, particularly in males. Based on the statistical modeling, positive attitudes toward physical activity were strong predictors of physical activity associated with being physically active and less sedentary. However, strong intentions of exercise, was not associated with actual behavior. Interactive discussions through focus groups unraveled attitude and barriers influencing physical activity behavior. Doing physical activity to feel good and to enjoy themselves was more important for young people than the common assumptions of 'winning' and 'pleasing others'. Further this age group saw traditional health promotion message as 'empty' and 'fear of future health' was not a motivating factor to change current behavior.[9]

2.2- At regional level:

A study was done in South Africa, from the University of the Western Cape, Cape Town, about "Physical Activity and Non-communicable Disease Risk Factors: Knowledge and Perceptions of Youth in a Low Resourced Community in the Western Cape" the result of which in the total of 22 female youth participated in the study. The majority of the participants were single (86%), unemployed (63.6%) and secondary schooling (72.7%) of the highest level of education. Results indicated that the participants had little knowledge about physical activity, but lacked sufficient knowledge with regards to NCDs. Time constraints, lack of interest, low self-esteem, lack of awareness, safety, and financial constraints, knowledge deficit, parental influence, peer pressure, and poverty were seen as a barrier to the physical activity and NCDs risk factor.[10]

Furthermore, another research was done in Eastern Uganda, by Temitope Tabitha Ojo, et al to "Explore the knowledge and attitudes toward non-communicable diseases among village health teams in Eastern Uganda". The study suggested that the participants ranged from 28 to 66(mean 43.6) years of age.

Approximately two-thirds were female and received secondary school education. Participants had worked as Village health teams for an average of 6.4 years and spent 19 hours per week doing village health team work. Nearly all participants (94.1%) knew that NCDs are not transmissible, and (82.4%) agreed/strongly agreed that NCDs are common in Uganda. The majority of participants claimed to know 'a little' about high blood pressure (70.6%), heart disease(61.8%), stroke (52.9%) and type II diabetes mellitus (63.2%) and nearly 90% thought that CVD is becoming more in Uganda. In addition, 77.9% responded that diabetes is caused by high blood sugar levels, and over half reported that diabetes can cause complications. Thirty-two participants (47.1%) thought diabetes was preventable. All participants thought smoking affected one's health and was harmful to the lungs. Approximately 80% thought smoking was harmful to the heart and reported talking to community members about the harms of smoking. Similar numbers of participants reported having advised community members about the harms of excessive alcohol use.[11]

2.3- At local level:

A study was conducted in Khartoum, Sudan, by Marwa Mohammed Yousif, Lamis Kaddam and Humeda Suekit Humeda, about the "Correlation between physical activity, eating behavior and obesity among Sudanese medical students". The total number of subjects who participated in this study was 216 students, 42% of them were males, and 58% were females. Their age ranged between 18 to 25 years and average was 19.99 ± 1.86 years. The participants were from first to fifth level. The prevalence of obesity among students was 6.5% and overweight was 22.2%. The study showed that 44.9% of medical students had low activity while 32% of students had moderate activity level and 23.1% had high physical activity level. There was no significant relationship between physical activity and body mass index (BMI) in this study. The common eating pattern among students was controlled eating (45.8%). There was significant relationship between eating behaviors and BMI (p=0.01) [12].

Chapter Three: Methods and Materials

3.1-study design:

An Observational-based analytical, cross sectional study design.

3.2-Study population:

Students studying medicine in Nile-university.

Medical students have more insight about the relationship between lack of physical activities and outcomes (major non communicable diseases).

3.2.1-Inclusion criteria:

Medical students in 3rd, 4th, and 5th year.

We choose these group of students who have better understanding on the topic in addition to being able to assist us in data collection for the research.

3.2.2-Exclusion criteria:

Students who did not consent to participate.

3.3-study area:

Nile university is an academic institution located on the East bank of the blue nile, East manshia bridge, Hai El Gamaa.

The university usually engages in physical activities such as: football and volley ball. They organize annual football competitions in which both students and staffs participate. The university is open for both national and international student.

3.4-Sample Design:

3.4.1 Sample size

$$n = \frac{NZ^2P(1-P)}{d^2(N-1)+Z^2P(1-P)}$$

n is the sample size.

N is the total population.

Z (1.96) is the value of normal curve corresponding to level of confidence 95%.

P is the probability of target group having the problem or prevalence rate.

1-P is the probability of target group not having the problem.

d is the desired margin of error.

n=? N=350(3^{rd}year=79, 4^{th}year=149, 5^{th}year=122)

Z=1.96

P=0.5

d=0.05

$$=\frac{350\times(1.96)^2\times0.5(1-0.5)}{(0.5)^2\times(350-1)+(1.96)^2\times0.5(1-0.5)}$$

$$=\frac{350\times3.8\times0.25}{0.0025\times349+3.8\times0.25}$$

$$=\frac{336.15}{0.87+0.96}$$

$$=\frac{336.15}{1.83}$$

n=184

10% = 10÷100×184= 18

n + 10%(18) (to guard against none response) = 184+18=202

Proportional allocation to each strata:

3^{rd} year= (79/350) × 202 = 46

4^{th} year= (149/350) × 202 = 86

5^{th} year= (122/350) × 202 = 70

3.4.2-Sampling Technique

Stratified sampling.

All strata are representative, and focuses on important sub-populations.

3.5-Data management

3.5.1-Data collection

Structured questionnaires with informed verbal consent.

3.5.2 Data analysis

Statistical package for social sciences (SPSS) was used for data analysis.

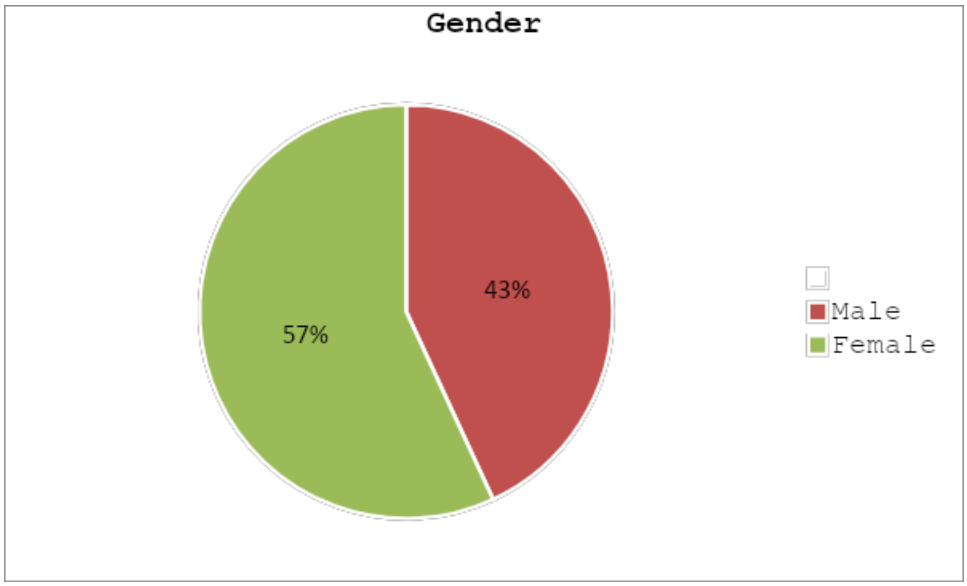
3.6 ethical considerations

We asked some questions, which would be beneficial to the research participants and us as researchers, to know their attitude, knowledge, and practice towards the role of physical activity in prevention of major non-communicable diseases. They were offered an option either to participate or not.

Verbal consent was used, and ethical clearance was obtained from relevant authorities.

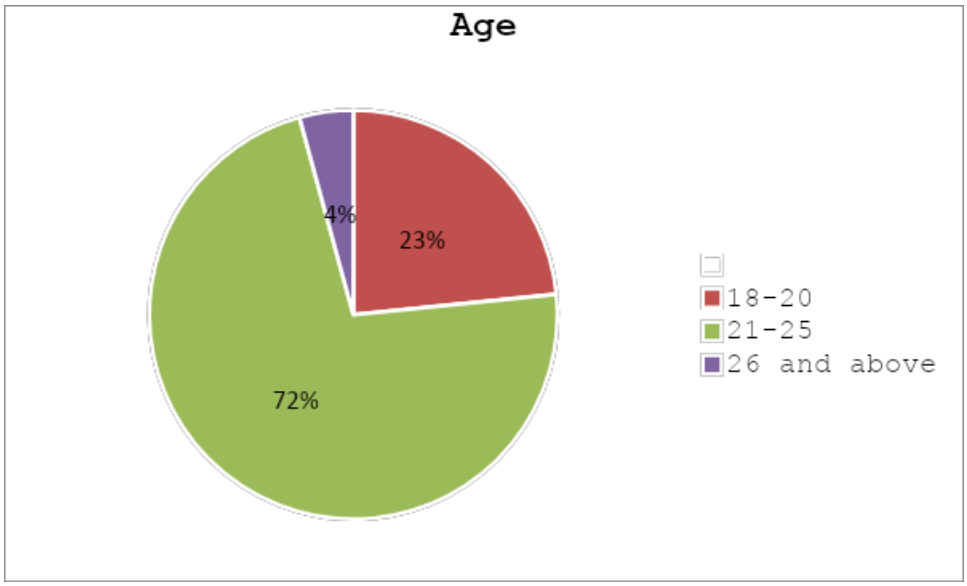
Chapter Four: Results

Figure (4.1): Distribution of study population according to student's gender.



The figure above shows that the sexes of participants were 43.1% male and 56.9% female.

Figure (4.2): Distribution of study population according to the student's age.



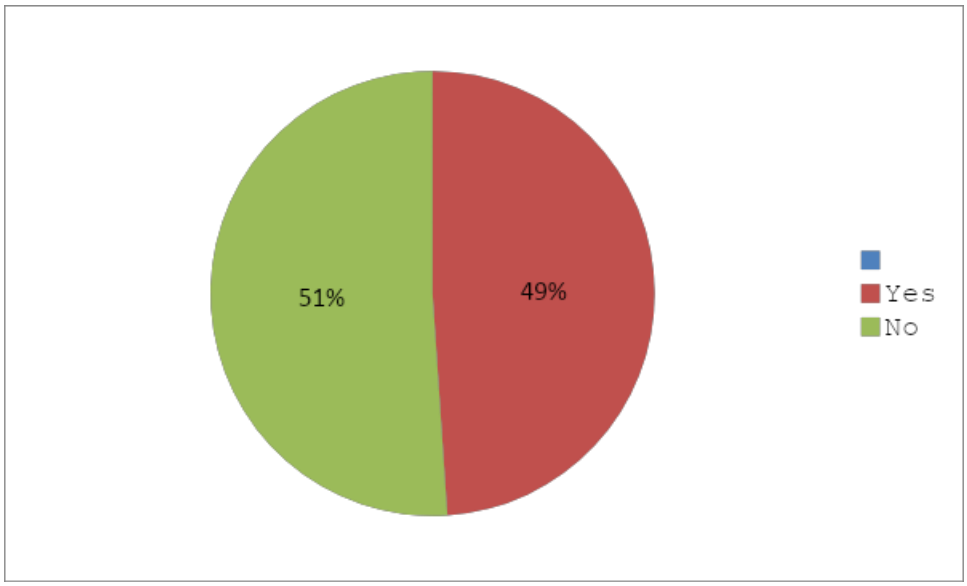
Majority (72.3%) of students were between 21-25 years who were 136 in number, while the minority (4.3%) were between 26 and above and were 8 in number. However (23.4%) of students were between 18-20 years who were 44 in number.

Table (4.1): Frequency of students according to level of study.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3rd year	44	23.4	23.4	23.4
	4th year	82	43.6	43.6	67.0
	5th year	62	33.0	33.0	100.0
	Total	188	100.0	100.0	

The participants were from 3rd, 4th and 5th year. Students from 3rd year were 44(23.4%), and 82 students (43.6%) were from 4th year, while 62 students (33%) were from 5th year students.

Figure (4.3): Distribution of students who engage in planned physical activity.



The figure above shows that (51%) of student do not engage in physical activity and only (49%) of students participate in physical activities.

Table (4.2): Frequency of planned physical activities performed by students.

	Frequency	Percent	Valid Percent	Cumulative Percent
Sports (Football, Basketball, Volleyball, swimming).	54	28.7	28.7	28.7
Physical exercise (jogging, gym etc.)	37	19.7	19.7	48.4
None	97	51.6	51.6	100.0
Total	188	100.0	100.0	

Students that were found to participate in sporting activities were 54(28.7%), while 37 students (19.7%) participate in physical exercise.

Table (4.3): Frequency of participation in physical activities.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Daily	14	7.4	7.4	7.4
	Weekly	37	19.7	19.7	27.1
	Monthly	40	21.3	21.3	48.4
	None	97	51.6	51.6	100.0
	Total	188	100.0	100.0	

Students who engage in physical activities daily were 14(7.4%) and 37 of the students (19.7%) engage weekly, while 40 students (21.3%) engage in physical activity monthly

Fig (4.4): Distribution of Average duration of participation in physical activities among students.

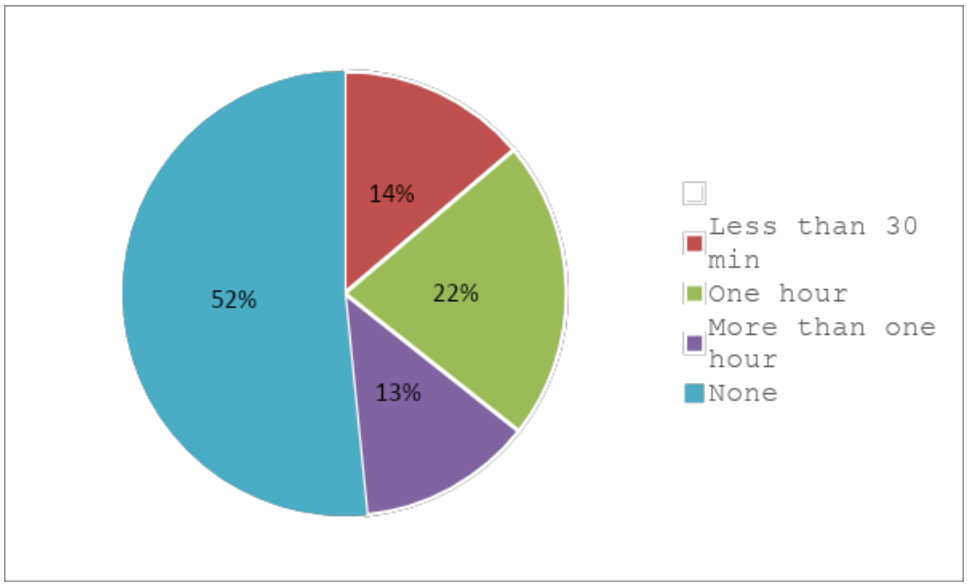


Table (4.4): Frequency of Primary interest in participation of physical activities among students.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	For health benefit	86	45.7	45.7	45.7
	For social reasons	4	2.1	2.1	47.9
	Doctor’s advice	1	.5	.5	48.4
	I do not participate in any physical activity.	97	51.6	51.6	100.0
	Total	188	100.0	100.0	

Students that participate in planned physical activies for health benefits were 86(45.7%), and 4 students (2.1%) practice physical activities for social reasons, while a single student practice physical activities due to doctor’s advice 1 (5%).

Figure (4.5): Distribution of interference of academic activities in the involvement of planned physical activities.

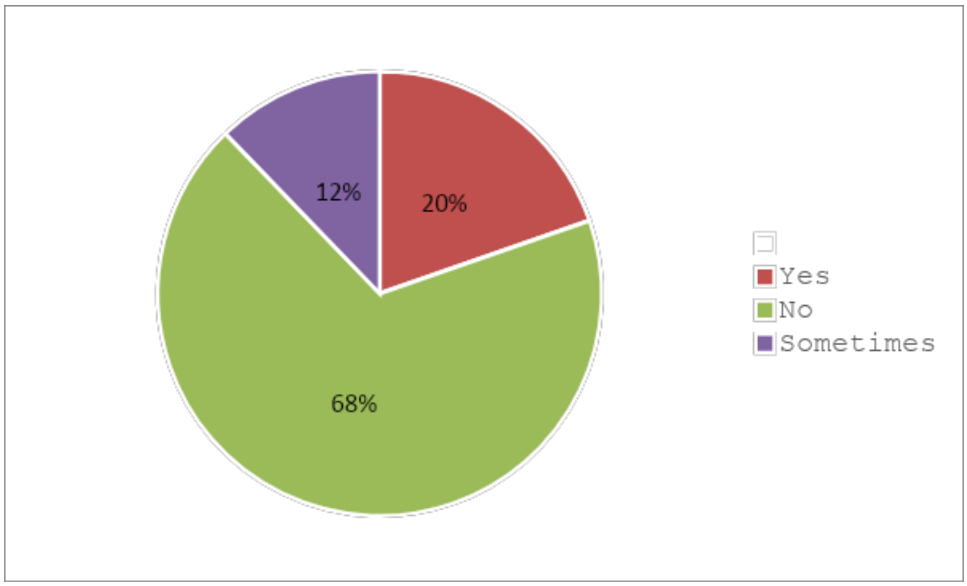


Table (4.5): Frequency of students that plan a free time or date to engage in physical exercise.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Regularly	51	27.1	27.1	27.1
	Rarely	40	21.3	21.3	48.4
	Never	97	51.6	51.6	100.0
	Total	188	100.0	100.0	

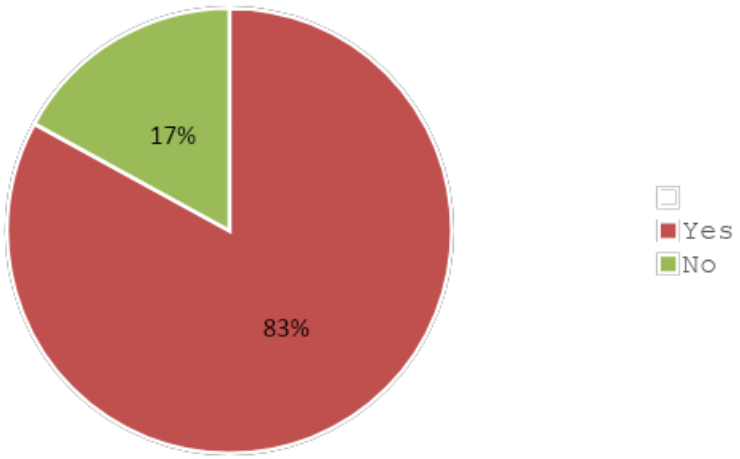
Students who often plan a free time or date to engage in physical activities regularly were 51(27.1%), in which 40 students (21.3%) plan rarely.

Table (4.6): Frequency of people in which students' advice to engage more in planned physical activity.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Family members	96	51.1	51.1	51.1
	Colleagues and friends	72	38.3	38.3	89.4
	No one	20	10.6	10.6	100.0
	Total	188	100.0	100.0	

Students who usually advice colleague/friends to participate in planned physical activities were 72(38.3%), while 96 students (51.1%) advice their family members.

Figure (4.6): Distribution of students that think engaging in planned physical activities helps in preventing major chronic diseases (non communicable diseases).



Research participants that think physical activities help in prevention of major NCDs were (83%), while the rest of the students (17%), do not think that engaging in physical activities helps in the preventing major NCDs.

Table (4.7): Gender * Students that practice planed physical activity cross tabulation

Count

		Do you practice any planed physical activity in job or school?		
		Yes	No	Total
Gender	Male	52	29	81
	Female	40	67	107
Total		92	96	188

P value= 0.000

There is significant relationship.

Table (4.8): Students that practice planed physical activity * planned physical activities that student engage in Cross tabulation.

Count

		Which planned physical activity do you practice?			
		Sports (Football, Basketball, Volleyball, swimming).	Physical exercise (jogging, gym etc.)	None	Total
Do you practice any planed physical activity in job or school?	Yes	54	37	1	92
	No	0	0	96	96
Total		54	37	97	188

P value=0.000

There is significant relationship.

Table (4.9): Students that practice planed physical activity * students that often participate in physical activity cross tabulation.

Count

		How often do you participate in physical activity ?				
		Daily	Weekly	Monthly	None	Total
Do you practice any planed physical activity in job or school?	Yes	14	37	40	1	92
	No	0	0	0	96	96
Total		14	37	40	97	188

P value = 0.00

There is significant relationship

Table (4.10): Students that practice planed physical activity * average time which students use to participate in physical activity cross tabulation

Count

		How many hours on average do you participate in physical activity?				
		Less than 30 min	One hour	More than one hour	None	Total
Do you practice any planed physical activity in job or school?	Yes	26	41	24	1	92
	No	0	0	0	96	96
Total		26	41	24	97	188

P value =0 .00

There is significant relationship

Table (4.11): Students that practice planed physical activity * Reason students participate in planned physical activity cross tabulation

Count

		Why do you participate in planned physical activity?				
		For health benefit	For social reasons	Doctor's advice	I do not participate in any physical activity.	Total
Do you practice any planed physical activity in job or school?	Yes	86	4	1	1	92
	No	0	0	0	96	96
Total		86	4	1	97	188

P value=0.00

There is significant relationship

Table (4.12): Students that practice planed physical activity * interference of students' academic activities with their involvement in physical activity cross tabulation.

Count

		Do academic activities interfere with your involvement in physical activity?			
		Yes	No	Sometimes	Total
Do you practice any planed physical activity in job or school?	Yes	37	32	23	92
	No	0	96	0	96
Total		37	128	23	188

P value=0.063

There is no significant relationship

Table (4.13): Students that practice planed physical activity * students who often plan free time to engage in physical exercise cross tabulation.

Count

		How often do you plan a free time or date to engage in physical exercise?			
		Regularly	Rarely	Never	Total
Do you practice any planed physical activity in job or school?	Yes	51	40	1	92
	No	0	0	96	96
Total		51	40	97	188

P value= 0.00

There is significant relationship

Table (4.14): Students that practice planed physical activity * students who advice people to engage more in planned physical activity Cross tabulation.

Count

		Who do you usually advice to engage more in planned physical activity?			
		Family members	Colleagues and friends	No one	Total
Do you practice any planed physical activity in job or school?	Yes	50	35	7	92
	No	46	37	13	96
Total		96	72	20	188

P value = 0.210

There is no significant relationship

Table (4.15): Students that practice planed physical activity * knowledge of student about prevention of non-communicable diseases Cross tabulation.

Count

		Do you think engaging in planned physical activities helps in preventing major chronic diseases (especially non communicable diseases)?		
		Yes	No	Total
Do you practice any planed physical activity in job or school?	Yes	82	10	92
	No	74	22	96
Total		156	32	188

P value=0.028

There is significant relationship

Table (4.16): Students that practice planed physical activity * the barriers that prevent students from participating in physical activity Cross tabulation.

Count

		What are the barriers that prevent you from participating in physical activity?				
		Healthy related barriers	Academic load	Environmental barriers	No barriers	Total
Do you practice any planed physical activity in job or school?	Yes	0	7	3	82	92
	No	10	50	36	0	96
Total		10	57	39	82	188

Chapter Five: Discussion, Conclusions and Recommendations

5.1. Discussion:

Findings of this study showed that majority of participants were female comprising of 107(57%), most of the student's age (72%) were between 21-25 years old.

Most of students that participated in this study were from 4th year as shown in table (4.1). Studies showed that medical students had low physical activities just like in a study conducted in the University of Malaysia Sabah in accordance with national health and morbidity survey 3 in 2008. [8]

We found that more than half of the students that participate in physical activities engage in sporting activities (football, basketball, volleyball, swimming)as shown in table (4.2).

Despite the fact that the students are adequately and well informed about the benefits of physical exercise, we found that more than half of the students (51.6%) do not participate in any physical activity as shown in table (4.3). This study was similar to the research that was done in Silesia, Poland, from Medical University of Silesia.[7]

Furthermore, the studies showed that most of the students(68.1%) reported that physical activities do not interfere with their academic performance as shown in fig. (4.5).

Majority of participants (45.7%) engage in physical activities mainly for health benefit as shown in table (4.4) in contrast to a research done in Grampian area of North-East of Scotland which they found their research participants practice P.A to feel good and to enjoy themselves.[9]

Regarding knowledge of the students about P.A in prevention of major NCDs as shown in fig. (4.6), almost all the students (83%) were aware that participating in P.A helps in prevention of major NCDs which is similar to a study done in Eastern Uganda. However, out of those who agree (156), only 52% of them participate in physical activities as shown in table (4.15). P value (0.028), which was statistically significant.

Regarding students who participate in planned P.A, of those who said yes (92), 56% were males and 44% were females as shown in table (4.7). P value (0.000), which was statistically significant.

Out of those who practice planned P.A(92), 28% practice for less than 30 min, 45% practice for one hour, where 26% of them practice for more than one hour, as shown in table(4.10).P value (0.00), which was statistically significant.

Furthermore, out of those who practice planned P.A (92), 40% said yes to interference of academic activities with their involvement in P.A, and 35% said no, while 25% reported sometimes, as shown in table (4.12). P value (0.063), which was not statistically significant.

Majority of students mentioned that there were no barriers. Of those who had barriers, most of them mentioned it was academic barriers, as shown in table (4.16).

5.2. Conclusion:

Majority of the students have good knowledge about the role of deferent physical activities in prevention of major NCDs, however, there is significant lack of actual practice of despite being aware of its benefits.

Most of students do not appear to have apparent barriers preventing them from participating in physical activities, though some admitted to having some barriers related to thier academic load.

5.3. Recommendations:

Arrangement of sport days by learning institutions would help improve student's participation in physical activities, as well as provision of facilities and adequate environment.

Organization of education programs to help students organize and coordinate their participation in physical activities with any potential barriers including academic load.

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Appendices

Annex 1: Questionnaire

TARGET RESPONDENTS: To be completed by the University's medical students in 3rd, 4th and 5th year.

The information is required for scientific reasons only; your contribution to fill this questionnaire is highly appreciated by the research team. You are kindly requested to answer all questions;

PLEASE TICK ONLY ONE OPTION

1. SEX:

A] MALE B] FEMALE

2. AGE:

A] 15-17

B] 18-20

C] 21-25

D] 26 and above

3. LEVEL OF STUDY:

A] 3rd

B] 4th

C] 5th

4. Do you practice any planned physical activity (not including job or school)?

A] YES

B] NO

5. Which planned physical activity do you participate in?

A] Sports (Football, Basketball, Volleyball, swimming).

B] Physical exercise (jogging, gyming, etc.)

C] none

7. How often do you participate in physical activities?

A] Daily B] Weekly C] Monthly
D] none

8. How many hours on average do you participate in physical activities?

A] 30 minutes B] 1 hour C] 2 hours
D] more than 2 hours

9. Why do you participate in planned physical activity?

A] For health benefit

B] For social reasons

C] Doctor’s advice

D] I do not participate in any physical activity.

10.Does academic activities interfere with your involvement in planned physical activity?

A] Yes B] No C] Sometimes

11. How often do you plan a free time or date to engage in physical exercise?

A] regularly B] rarely C] never

12. Who do you usually advice to engage more in planned physical activity?

A] Family members

B] Colleagues and friends

C] No one

13. Do you think engaging in planned physical activities helps in preventing chronic diseases (especially non-communicable diseases)?

A] YES B] NO

Annex 2: Informed consent

We are the researchers (Abdikarim Abdi Mohamed, Abdulqadir Surajo Muhammad, Ahmad Al-Mujtaba Esam Eldeen, Ahmad Mahmud Alhaj, Ahmad Abdullahi Bulama) fifth year students in Nile university, from the faculty of Medicine. We have a research regarding attitude and practices of students towards the role of physical activity in prevention of non-communicable diseases in Nile University. We ask you to participate, if you wish, by filling out this questionnaire, and the purpose is to gain information regarding the prevention of non-communicable diseases. All in information obtained will be handled without breach of confidentially.

Informed consent in Arabic:

السلام عليكم ورحمة الله وبركاته

نحن الباحثون (عبد القادر محمد سراجو وعبدالكريم عبدي وأحمد محمود وأحمد بلامة وأحمد المجتبى عصام الدين) ، طلاب في السنة الخامسة بكليةالطب والجراحة جامعة النيل, لدينا بحث يتعلق بي

اتجاه وممارسة الطلاب لدور النشاط البدني في الوقاية من الأمراض غير المعدية بجامعة النيل

ونرجو منكم التعاون في ملى هذا الاستبيان والغرض من ذالك تقيم وتحسين الوضع الصحي في المجتمع ولكم حرية الاختيار في حال رغبتكم قي المشاركة ولكم منا جزيل الشكر والتقدير