

**KNOWLEDGE, PERCEPTION, ATTITUDE AND PRACTICE OF ACTIVE  
COMMUTING WITHIN CAMPUS AMONG UNDERGRADUATE STUDENTS OF THE  
UNIVERSITY OF IBADAN**

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**MATRIC NUMBER: 188693**

**MARCH, 2017**

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STUDENTS OF THE UNIVERSITY OF IBADAN**

**BY**

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**B. Sc ANATOMY (UNIVERSITY OF ILORIN)**

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**A PROJECT IN THE DEPARTMENT OF HEALTH PROMOTION AND  
EDUCATION SUBMITTED TO THE FACULTY OF PUBLIC HEALTH,  
COLLEGE OF MEDICINE IN PARTIAL FULFILLMENT OF  
THE REQUIREMENTS OF THE DECREE OF  
MASTERS OF PUBLIC HEALTH  
(HEALTH PROMOTION AND EDUCATION)  
OF THE  
UNIVERSITY OF IBADAN, NIGERIA.**

**MARCH, 2017**

## **DEDICATION**

This research work is dedicated to almighty God who in his infinite mercy brought me thus far.

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## **ACKNOWLEDGEMENTS**

AFRICA DIGITAL HEALTH REPOSITORY PROJECT

I give glory to the Almighty God, from whom all blessings flow, for His loving kindness, tender mercies, grace and support towards the completion of this study. I hereby express a deep appreciation to my amiable supervisor, Prof. Oyedunni Arulogun for her patience, intellectual guidance, prompt feedback, constructive and motherly advice in making sure this project is completed. I do appreciate all my lecturers in the Department of Health Promotion and Education; the Ag. Head of Department- Dr. F.O. Oshiname, Prof. O. Oladepo, Prof. A. Ajuwon, Dr. O.E. Oyewole, Dr. M.A Titiloye, Mr. I.O. Dipeolu, Mrs. Adeyimika Desmenu, Dr. Yetunde John-Akinola, Mr John Imaledo, for impacting knowledge and equipping me with adequate skills needed in the field of public health. My sincere appreciation also goes to Mrs. Mojisola Oluwasanu for her immeasurable contribution to the success of this project. Also to the non teaching staff of the department, I appreciate you all.

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**John Toba ADEKEYE**

## **ABSTRACT**

Physical inactivity is a major contributing factor to the burden of Non-communicable diseases especially among adolescent and young adult and active commuting has a potential to increase the physical activity (PA) levels of the adolescent and young adult population. There have been an extensive research on physical activity among adolescent and adult but Active Commuting (AC) especially in the area of measuring the attitude and prevalence in Nigeria's university settings are not fully explored. This study therefore aimed at investigating the knowledge, perception, attitude towards the Health benefit of AC and practice among undergraduate students of the University of Ibadan.

The study was a descriptive cross-sectional survey that involved 424 undergraduate students of the University of Ibadan that reside in the residential halls. A three stage sampling procedure was used to select eligible respondents from different blocks within the 10 halls of residence. Data was collected using a pretested questionnaire that contained 10-point knowledge scale on AC, 11-point perception and 11-point attitude scales. Practice was rated in three groups; active, semi-active and passive commuting. Knowledge score on AC of 1-3 were considered poor, >3-6 fair, and >6-10 good. Perception scores of  $> 5$  and  $\leq 5$  were categorized as favourable and unfavourable respectively. Attitudinal scores of  $> 5$  and  $\leq 5$  were categorized as positive and Negative respectively. Data were analyzed using descriptive statistics and chi-square test at  $p < 0.05$ .

The age of respondents was  $20.5 \pm 2.6$  years. Mean knowledge score was  $5.9 \pm 2.2$  with 46.7% of the respondents having fair knowledge of the health benefits of AC while 38.8% had good knowledge and only 14.5% had poor knowledge. Mean perception score was  $2.2 \pm 1.7$  and 96.2% had unfavourable perception about AC. Mean attitude score was  $1.8 \pm 1.6$  with 96.4% having negative attitude about AC. Level of practice showed that 61.7% of the respondents were active commuters, 17% were semi active commuters while 21.3% were passive commuters. Factors influencing non practice of AC included long distance between residence and lecture room (49.6%) and wanting to get to school faster (58.3%). An association was found between socio-demographic characteristics such as; gender, level of study, age, and residential Hall, and active commuting practices. Males are 0.55 times more likely to commute actively than the females. No association was found between respondents' monthly income and level of practice of active commuting.

Knowledge, perception and attitude in relation to ones environment can determine ones commuting practices. A sustainable health education program should be developed to enlighten student on University of Ibadan campus on the health benefit of active commuting.

Keywords: Active commuting, Knowledge, perception, attitude, practice

Word count: 427

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## **CERTIFICATION**

I certify that this study titled "**Knowledge, Perception, Attitude and Practice of Active Commuting within Campus among Undergraduate Students of the University of Ibadan**" was carried out by ADEKEYE John Toba under my supervision in the Department of Health Promotion & Education, Faculty of Public Health, College of Medicine, University of Ibadan

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**TABLE OF CONTENT**

	<b>PAGE</b>
– Dedication	ii
– Acknowledgement	iii

–	Abstract	iv
–	Certification	vi
–	Table of contents	vii
–	Abbreviations / acronyms	xiv

## **CHAPTER ONE- INTRODUCTION**

1.1	Background	1
1.2	Statement of Problem	2
1.3	Justification	4
1.4	Research question	4
1.5	Objective Of The Study	5
1.5.1	General Objective	5
1.5.2	Specific objectives	5
1.5.3	Hypothesis	5

## **CHAPTER TWO- LITERATURE REVIEW**

2.1	Overview of Active commuting	6
2.2	Health benefit of Active commuting	7
2.3	Knowledge of Adolescent and Young Adult about Active commuting	7
2.4	Perception of Adolescent and Young Adult on Active commuting	8
2.5	Attitude of Adolescent and Young Adult towards Active commuting	10
2.6	Level of Practice of Active commuting among Adolescent and Young Adult	12
2.7	Reinforcing Factors (Laws and policies guiding Active commuting in institution)	13
2.8	Restraining Factors towards Active commuting in University community	14
2.9	Theoretical Frame Work	16
2.9.1	THE PRECEDE FRAMEWORK	17

## **CHAPTER THREE- RESEARCH METHODOLOGY**

3.1	Research design	18
3.2	Study area	18
3.3	University of Ibadan	18
3.4	Study population	19



3.5	Inclusion criteria	19
3.6	Exclusion criteria	19
3.7	Sample size Determination	20
3.8	Sampling technique	22
3.9	Research Instrument	22
3.10	Validity of instrument	23
3.11	Reliability of instrument	23
3.12	Procedure for data collection	23
3.13	Data Management, Analysis and Presentation	24
3.13.1	Data Management	24
3.13.2	Analysis	24
3.13.3	Categorization of respondent's knowledge on Health benefit of active commuting	25
3.13.4	Categorization of Perception	25
3.13.5	Categorization of Attitude	25
3.13.6	Categorization of level of practice	26
3.14	Ethical Consideration	26
3.14.1	Confidentiality	26
3.14.2	Beneficence to participants	26
3.14.3	Non-Maleficence to participants	27
3.14.4	Voluntariness	27
	<b>CHAPTER FOUR- RESULTS</b>	28
4.1	Socio-demographic characteristics	28
4.2	Knowledge of active commuting	31
4.3	Perception of the Undergraduate student towards active commuting	35
4.4	Attitude of the Undergraduate towards Active commuting	37
4.5	Practice of the Undergraduate towards active commuting	39
4.6.1	Test for Hypothesis 1	49
4.6.2	Test for Hypothesis 2	53
4.6.3	Test for Hypothesis 3	57
4.6.4	Test for Hypothesis 4	61

4.6.5	Test for Hypothesis 5	65
4.6.6	Test for Hypothesis 6	67
4.6.7	Test for Hypothesis 7	68
4.6.8	Test for Hypothesis 8	69
4.6.9	Test for Hypothesis 9	70
<b>CHAPTER FIVE - DISCUSSION, RECOMMENDATION AND CONCLUSION</b>		<b>71</b>
5.1	Discussion	71
5.1.1	Knowledge of respondents on the health benefit of active commuting	72
5.1.2	Perception of the respondents	73
5.1.3	Attitude of respondents	74
5.1.4	Practice of respondents on the health benefit of active commuting	75
5.2	Implications of findings for health promotion and education	78
5.2.1	Health education and public enlightenment	78
5.3	Recommendations	79
5.4	Conclusions	79
<b>REFERENCES</b>		<b>81</b>
<b>APPEDICES</b>		
APPENDIX 1- Inform consent form		92
APPENDIX 11 – Questionnaire		95
APPENDIX 111- ETHICAL APPROVAL LETTER		100

## LIST OF TABLES

**CONTENT**

**PAGE**

Table 3.1	Undergraduate halls and students allocation for the 2015/2016 session	<b>20</b>
Table 3.2	Showing the proportionate sampling calculation	<b>21</b>
Table 4.1a	Socio-demographic characteristics of the respondents (N=424)	<b>29</b>
Table 4.1b	Socio-demographic characteristics of the respondents (N=424)	<b>30</b>
Table 4.2a	Frequency distribution of Knowledge of the respondents	<b>32</b>
Table 4.2b	Frequency distribution of Knowledge of the respondents	<b>33</b>
Table 4.3	Perception of the Undergraduate towards active commuting	<b>36</b>
Table 4.4	Attitude of the Undergraduate towards active commuting	<b>38</b>
Table 4.5	Mode of transport among respondents in the last one month	<b>41</b>
Table 4.6	Reasons why respondents chose to walk or cycle	<b>44</b>
Table 4.7	Reasons why respondents do not walk or cycle	<b>45</b>
Table 4.8	Active commuting practices among Respondents	<b>46</b>
Table 4.9a	Association between socio demographic characteristics and Knowledge of respondents on active commuting.	<b>51</b>
Table 4.9b	Association between socio demographic characteristics and Knowledge of respondents on active commuting.	<b>52</b>
Table 4.10a	Association between socio demographic characteristics and perception of respondents towards active commuting.	<b>55</b>
Table 4.10b	Association between socio demographic characteristics and perception of respondents towards active commuting.	<b>56</b>
Table 4.11a	Association between socio demographic characteristics and attitude of respondents towards active commuting.	<b>59</b>
Table 4.11b	Association between socio demographic characteristics and attitude of respondents towards active commuting.	<b>60</b>
Table 4.12a	Association between socio-demographic characteristics of the respondents and most frequently used means of transportation	<b>63</b>
Table 4.12b	Association between socio-demographic characteristics of the respondents and most frequently used means of transportation	<b>64</b>
Table 4.13	Association between respondents' knowledge score and most frequently used means of transportation.	<b>66</b>

Table 4.14	Association between knowledge of respondents and level of commuting practices.	67
Table 4.15	Association between perception of respondents and level of commuting practices.	68
Table 4.16	Association between attitude of respondents and level of commuting practices.	69
Table 4.17	Association between sex and active commuting practices using (logistic regression and chi-square analysis)	70

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## LIST OF FIGURE

**CONTENT**

**PAGE**

Figure 2.1	The PRECEDE Model Adapted to suit the study	17
Figure 4.1	Frequency distribution of the respondents Knowledge on the benefits of active commuting	34
Figure 4.2	Respondent's most frequently used transport means from residential hall to lecture room in the last one month.	42
Figure 4.3	Number of days been spent by the respondents using their most frequent means of transportation from their residential halls to their lecture room.	43
Figure 4.4	Respondents level of cycling as a form of active commuting	47
Figure 4.5	Respondents practice as regards Riding bicycle from their residential hall to their lecture room	48

#### **ABBREVIATIONS / ACRONYMS**

NCDs - Non communicable diseases

AC- Active commuting

WHO- World Health Organization

PBV-Public vehicle

PRV- Private vehicle

W- Walking

C- Cycling

M – Motor cycle(Okada)

T- Tricycle (Keke Napep)

C-WMO Combination of Walking, Moto cycle and Tricycle

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## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background

Active commuting involve both cycling and walking as a means of transporting, leisure, and exercise (or form of physical activity) which can provide substantial net health benefits, irrespective of geographical context (Natalie Mueller et al, 2015). Decades of research in the developed world have shown that much of the burden of chronic diseases is attributable to environmental and lifestyle factors, including tobacco consumption and decreased physical activity.

Physical activity is any bodily movement produced by the skeletal muscles that uses energy. This includes sports, exercise and other activities such as playing, walking, doing household chores, gardening, and dancing (WHO, 2010). Physical activity occurs in several domains and the SLOTH (sleep, leisure-time, occupation, transportation, and home-based activities) model expounds this (Pratt, et al 2004). For example, leisure-time activities as a means of physical activity are more mentioned in developed countries while occupational, household, and transport-related activities are the most common in low-income and middle-income countries (Macniven, et al, 2012). The intensity of different forms of physical activity varies between people depending on an individual's relative level of fitness (WHO, 2010).

Physical inactivity is the fourth leading risk factor for global mortality, globally, 6% of deaths are attributed to physical inactivity. This follows high blood pressure (13%), tobacco use (9%) and is equal to high blood glucose (6%). Moreover, physical inactivity is the main cause for approximately 21–25% of breast and colon cancers, 27% of diabetes and 30% of ischemic heart disease burden (WHO, 2010).

Non-communicable diseases (NCD) contribute to the major burden of disease in Sub Saharan African. The Global Burden of Disease Study conducted in 2001, showed that 20% of deaths in sub-Saharan Africa were caused by non-communicable diseases (Lopez et al, 2006). In low- and

middle-income countries, 53.8% of all deaths are attributed to NCDs and 36.4% to communicable diseases (Lopez et al.2006).In Nigeria, the impact of NCDs is enormous and glaring. About 5 million Nigerian may die of NCDs by the year 2015, Chronic NCDs are noted to stagnate or rather retard economic development. They cause billion of dollars in losses of national income, and they push million people below the poverty line (WHO, 2011).For example, it is estimated that China, Russia, India and Nigeria will lose around 558, 303, 237 and 7.6 billion dollars respectively from 2005 to 2015 as result of the burden of NCDs (WHO, 2005 cited in WHO, 2008).The economic cost of NCDs in Nigeria in 2005 was about 400 million dollars from premature death due to NCDs. By 2015, it is estimated to rise to about 8 billion dollars (HERFON, 2011).Urban and environmental policies can have huge potential to increase the physical activity levels in the population; it can also make a substantial impact on mitigating the mortality and morbidity due to NCDs (Epping-Jordan, et al 2005).

Regular moderate intensity physical activity – such as walking, cycling, or participating in sports – has significant benefits for health. For instance, it can reduce the risk of cardiovascular diseases, diabetes, colon and breast cancer, and depression. Moreover adequate levels of physical activity will decrease the risk of a hip or vertebral fracture and help control weight (WHO, 2010). Also, about 3.2 million people died each year due to insufficient physical activity. People who do not take enough exercise have 20-30% increase risk of dying prematurely. Insufficient physical activity is highest in high-income countries, but very high levels are now also seen in some middle-income countries especially among women (WHO, 2011).Unless urgent action is taken, the growing NCD epidemic will add tremendous pressure to already overstretched health systems and pose a major challenge to development in Africa.

## **1.2 Statement of Problem**

While levels of physical activity have been relatively high in Africa, as an aspect of work or transportation such as in the early years of 1950s to 1980s when the use of bicycle were more common especially among young adult to older ones as a means of transportation to school and work places, urbanization is driving people to become more sedentary. Numbers of automobile cars usage increases as a result of technological advancement and economic growth. As a result, cycling and working is perceived to be done by lower class individual. This has resulted in



reduced physical activity which is also one of the reasons for increased NCDs among young adults.

Reduced physical activity in adolescents is rapidly becoming common, with physical inactivity prevalence reported to be between 65% and 92% in most African countries (Guthold, 2010). In Nigeria, more than half of school-going adolescents reported low levels of physical activity (Adeniyi, Okafor and Adeniyi 2011), with attendant rise in the prevalence of overweight (13.8%) and obesity (9.4%) in this age group (Oduwole et al, 2012).

Studies have shown that, only 8% to 35% of African youth engaged in sufficient levels of physical activity for 60 minutes a day on at least 5 days per week in the African region (Guthold, 2010). In Nigeria, about 72% of school going adolescents reported engaging in physical activity at least once a month (Senbanjo and Oshikoya, 2010), 59% engaged at moderate levels (Odunaiya, Ayodele and Oguntibeju, 2010), and more than 50% engaged in low levels of physical activity (Adeniyi, Okafor, Adeniyi, 2011). However, no study was found that provided estimates on the proportion of Nigerian youth meeting the health-related recommended guidelines for sufficient levels of physical activity, and there is no data on the patterns and domains of physical activity among adolescents and children in Nigeria (Akinroye et al, 2014).

NCDs are increasingly becoming the leading causes of morbidity and mortality worldwide. Overwhelmingly, 35 million people die every year from these silence killers. In 2008, this figure rose to 36.1 million (i.e. about 63% of global deaths), and nearly 80% of those NCD deaths-equivalent of 29 million people occurred in low and middle income countries with the projection of about 52 million deaths annually by 2030 (WHO, 2011). Also, NCDs will be responsible for three times as many disability adjusted life years (WHO, 2004), and nearly 5 times as many deaths as communicable diseases, maternal, perinatal, and nutritional conditions combined (WHO, 2008). About one-fourth of the global NCDs related deaths take place before the age of 60 years (WHO, 2010). These clusters of diseases represent the biggest threat to global health care and economy, 1.2 million Children and youth under age 20 died of NCDs in 2002 (Mathers, 2009). More than 25% of obese adolescents have signs of diabetes by age 15 (Goran, Ball and Cruz, 2003).

Lack of good infrastructures and ineffective policy implementation that will encourage active commuting confirm the level of physical inactivity among adolescents and young adult. NCDs often result from modifiable lifestyle risk factors, such as tobacco use, problem alcohol use, unhealthy diet, and lack of physical activity, leading to overweight, raised blood pressure, and cholesterol. If left unchecked, NCDs will continue to lower global productivity, threaten quality of life, and cost trillions of dollars (Bloom, 2011).

School-based physical activity (PA) interventions, Including school active transportation (AT), provide opportunities to increase daily PA levels, improves fitness, and reduces risk of diseases, such as type 2 diabetes.

Noise Pollution, carbon monoxide emission from automobile as well as increasing daily traffic congestion has also posse more threat to the health of an individual which can be relatively reduced through active commuting ACT and that is why In 1996, the World Bank declared that bicycles, like other non-motorized modes of transport, would bring economic, social and environmental benefits to the city, and should not be marginalized (World Bank, 1996).

### **1.3 Justification**

There have been an extensive research on physical activity among adolescent and adult but Active commuting as a whole especially in the area of measuring the Attitude and prevalence in Nigeria's university settings are not fully explored. The outcome of this research will serve as an input to broaden the knowledge of the society on the health benefit of active commuting. The outcome will also give the society a good perception about active commuting. Furthermore, the research also aims at stimulating people to embrace the attitude of active commuting which will in turn increase the level of its practice within their community.

### **1.4 Research question**

1. What is the level of knowledge of undergraduate students of the University of Ibadan on the health benefit of active commuting?
2. What is the perception of undergraduate students of the University of Ibadan on active commuting?

3. What is the attitude of undergraduate students of the University of Ibadan towards active commuting?
4. What is the level of active commuting practices of undergraduate students of University of Ibadan?

## **1.5 Objective of the Study**

### **1.5.1 General Objective**

The general objective of this study was to investigate the Knowledge, perception, Attitude and practice towards the Health benefit of Active commuting among undergraduate students of the University of Ibadan.

### **1.5.2 Specific objectives**

The specific objectives of this study were to;

- 1) Assess the level of knowledge of the health benefit of Active commuting among undergraduate students of the University of Ibadan
- 2) Determine the perception of undergraduate students of University of Ibadan on the health benefit of active commuting
- 3) Describe the attitudes of undergraduate students towards active commuting within the University community
- 4) Assess active commuting practices among undergraduate students within the University community

### **1.5.3 Hypothesis**

There is no association between the socio-demographic variables and the Knowledge, Attitude, perception and level of practice of active commuting

## CHAPTER TWO

### Literature Review

#### 2.1 Overview of Active commuting

Active commuting involve both cycling and walking or by walking or cycling in combination with motorized modes of travel (for example a combination of car with walking, or of train with cycling) as a means of transporting, leisure, and exercise (or form of physical activity) which can provide substantial net health benefits, irrespective of geographical context (Jones and Ogilvie, 2012, Natalie Mueller et al, 2015). One strategy for increasing population physical activity levels is to promote walking and cycling for transport. Promoting physical activity is a public health priority. The recent decline in children's active commuting to school has become an important public health issue because positive associations have been observed between active commuting and overall physical activity levels (Lee et al, 2008). It is recommended that adults should take part in  $\geq 150$  minutes of moderate intensity physical activity each week, but most adults in the UK do not achieve this (NHS IC, 2011).

In view of the important role of physical activity in overall health promotion, and in view of the decline in physical activity among children and adolescents, it becomes crucial for each society to review all likely opportunities available to promote increased physical activity among their youth (Pizarro et al, 2013; Lee et al, 2008). One of such opportunity is provided by active commuting to school (Chillón et al, 2010; Pizarro et al, 2013; Rodríguez-López et al, 2013).

Nigeria has the highest population of youth aged between 10– 24 years in the entire African continent, with an estimated population of about 53.5 million youth (projected to be more than double at 116.2 million by the year 2050), [Carver, Timperio, and Crawford, 2008], and physical inactivity related NCDs mortalities are increasingly rising in this country (Timperio et al, 2006). Thus, availability of baseline national or sub national data on physical activity patterns and associated factors in adolescents could be considered an urgent public health issue for Nigeria. (Oyeyemi et al, 2014)

## **2.2 Health benefit of Active commuting**

Exercise has been reported as a sure route to physical fitness and a significant contributor of good health status (O'Brien, 2005; Adeogun & Dansu 2006). According to (Biddle, Fox and Boutcher 2000), exercise has more to contribute to human happiness, posture, mood, decreased anxiety, depression, and elevated level of self-esteem. Similarly, (Fox 1999) maintains that exercise really has the potential to be used in the prevention of some diseases and to increase the positive enjoyment of life that is embedded into good healthy living. Regular exercise has been linked to longevity and individual who remain physically active or physically fit during middle older ages live longer than their sedentary counterparts (Karmisholt & Gotzche, 2005), and also recommended for secondary prevention of several diseases (Okuneye, 2002). In their research, (Benzer, Adams and Whistler 1999) showed that active lifestyle is a vital tool to psychological, mental, social, intellectual and spiritual wellness. All these are pointers to the importance of physical activity on human health.

Planned and regular physical activities boost the immune system and promote the optimal performance of all major systems of the human body: musculoskeletal; cardiovascular; immunologic; neurosensory and gastrointestinal (Sherri, 2004). Noise Pollution, carbon monoxide emission from automobile as well as increasing daily traffic congestion has also pose more threat to the health of an individual which can be relatively reduced through active commuting ACT (Woodcock et al, 2009) and that is why In 1996, the World Bank declared that bicycles, like other non-motorized modes of transport, would bring economic, social and environmental benefits to the city, and should not be marginalized (World Bank, 1996). Economic benefit of Active commuting is that cyclists do not need to undertake training, or get licensed neither do they need to insured their bicycle, nor pay road taxes.

## **2.3 Knowledge of Adolescent and Young Adult about Active commuting**

Brown (2005) opined that knowledge is the facts, information, understanding and skills that a person has acquired through experience or education. In this study, knowledge means familiarity, awareness or understanding gained through experience, study or specific information about physical activities. Knowledge of physical activities therefore means familiarity, awareness or

understanding that has been perceived or learned about planned and selected bodily movement produced by contraction of muscles that requires energy expenditure which is low, moderate or high intensity that aims at improving physical fitness of an individual. An individual's physical activity practice is influenced not only by his knowledge of physical activities but also his attitudes towards physical activities participation (Aniodo et al, 2014)

Findings in the study of (Aniodo et al, 2014) revealed that the knowledge possessed by the undergraduates is high with prevalence of 66.34% based on Okafor's criteria. The majority of the students of both sexes knew that exercise in general protects from certain diseases (92.9% and 91.8% for male and female student respectively) and can prevent obesity (69.4% and 78.5%). Fewer students of both sexes knew about the beneficial effects of physical activity in the prevention of heart disease, hypertension, diabetes mellitus or psychological stress. (Taha, 2008).

Study conducted by Umeifekwem, (2011) also showed that a large number of students have substantial knowledge of the beneficial effect of physical activity in the maintenance of health but only few of them participate in Physical activity. There were however significant differences between males and their female counterparts regarding knowledge of health benefits and status of participation in Physical Activity. Male students were found to possess more awareness on beneficial effects of exercise and participate more in Physical activities than females. Umeifekwem, (2011)

#### **2.4 Perception of Adolescent and Young Adult on Active commuting**

Perceptions in this context is defined as "the individual's beliefs or estimation of the attributes of the alternatives" (Ben-Akiva, Walker et al. 1999). According to Panter, Griffin and Ogilvie (2014) Perceptions of the environment represent one of the most proximal cognitive constructs that may change as a function of changing environments. Studies shows that commuters who perceived that routes had become less pleasant for walking or more dangerous for cycling, or that roads had become more difficult to cross, were more likely to report an increase in car trips, a decrease in time spent walking or both (Panter, Griffin and Ogilvie.,2014). According to Panter, Griffin and Ogilvie (2014) increases in perceived convenience of public transport and safety for cycling were associated with uptake of alternatives to the car. Their findings concluded that

Interventions to improve the safety of routes and convenience of public transport may help promote active commuting. One study found that university employees who reported improvements in the convenience of routes (and, among men, in their aesthetics) increased their walking (Humpel et al., 2004).

Research conducted by Nelson et al, (2008) concluded that distance is an important perceived barrier to active commuting and a predictor of mode choice among adolescents. Distances within 2.5 miles are achievable for adolescent walkers and cyclists. It has been observed that Cycling and working is perceived to be done by lower class individual. De Souza, Sanches, Ferreira, (2014) examine whether an individual's attitude towards cycling influences his perception of barriers (perceived behavioral control) for cycle commuting after which they concluded that a very negative attitude is associated with the perception of stronger barriers.

Alfonzo (2005) applies the social-ecological model to the decision to walk. The decision has antecedents, mediators, inter-processes and multiple outcomes. The model reveals that, the built environment has a substantial impact in that environmental factors are antecedents to walking. However, the built environment alone does not determine the decision to walk. The decision is also influenced by the *perceived* environmental factors. Thus Alfonzo distinguishes between the built environment objectively measured and subjectively perceived. (Willis, Manaugh, & El-Geneidy, 2015)

Alfonzo (2005) emphasizes the role of individual perceptions in the "Hierarchy of Walking Needs", He explained how different people will have the same experience or a conditions in drastically different ways, depending on their own needs. This emphasizes the difference between the objectively-measured built environment and the perception of the built environment, and conveys the importance of the latter in determining travel choice. Twenty-three papers systematically reviewed by (Willis, Manaugh, & El-Geneidy, 2015) found that perceptions are associated to cycling for transportation, including perceptions of benefits, perceptions of barriers, perceived behavioural control or self-efficacy perceptions of safety, knowledge and perceptions about cycling routes perceptions about cyclists, perceptions of transportation options and parental perceptions.

## 2.5 Attitude of Adolescent and Young Adult towards Active commuting

An attitude is a hypothetical construct that represents an individual's degree of like or dislike for an object or item. Attitudes are generally positive or negative views of a person about a place, thing or event (Obi-keguna and Isidore, 2004). Every attitude, positive or negative, acceptable or unacceptable is formed for a purpose (Aniodo et al (2014)). This is in line with Eyo, (2005) who maintained that attitude is formed either positively or negatively when one comes in contact with the attitude object. Lambert and Lambert (2004) asserted that attitude is an organized and consistent manner of thinking, feeling and reacting to people, groups, social issues or any event in one's environment. Attitude can also be referred to as the results of either direct experience or observational learning from the environment which could be positive or negative (Aniodo, Eskay, and Ezeudu, 2014).

There is link between attitude and behavior and many agree that attitudes are influential in practice, since it is believed that attitude do influence behavior. Attitudes are only part of a more complex decision making process where other factors can also be of influence, values, beliefs, perceptions of control and intentions, moderate attitude and behavior relationship. (Aniodo, Eskay, and Ezeudu, 2014).

The result of Aniodo et al (2014) finding revealed that undergraduates of University of Nigeria, Nsukka had positive attitude towards physical activities participation. Physical inactivity is thought to be the main key reasons for the surge of diseases like heart failure, type II diabetes because inactivity and obesity promote insulin resistance and other factors that trigger other diseases. It is extremely important for a person to develop an exercise program as well as a good attitude that promotes physical fitness, in order to stay healthy and be physically active.

Given the many benefits of physical activity and the low prevalence rates, it is imperative that intervention be designed that effectively promote the adoption and maintenance of active lifestyle in large number of people Aniodo et al (2014). According to Okuneye (2002), physical activity behaviour of people has been greatly altered due to modernization or development in the society. Despite the overwhelming evidence of the positive effect of fitness exercise, majority of individuals still drop out of exercise programmes at an alarming rate of 40% to 60% (Dishman,



1986). O'Brein (2005) reported that some adults are scared of engaging in fitness exercise as they perceived it to be too strenuous, or rather harmful to them. Similarly Center for Disease Control, CDC(1999) reported that more than 60% of adults do not exercise regularly and 25% of them were not active at all. This type of survey gives explanatory reasons of people's attitude toward physical activity and fitness exercise in spite of the numerous benefits of physical activity and the recent attention to specific guidelines.

A study conducted by Omolayo et al (2013) revealed that students' attitude toward the learning experience and skills encompasses many elements, including enjoyment, motivation and perception of skills. The likelihood of students putting their skills and strengths into use is influenced by their attitude for or against such physical activities. Positive attitude towards the activity, will lead to the possibility of participating in such activity and vice versa (Omolayo et al, 2013). On the other hand, material inducement is the prerequisite to some in participating while others are being coerced to do it. Many people don't participate in physical activity because to them attempting physical exercises leaves them with feelings of incompetency and humiliation, anxious and pressured (Omolayo et al, 2013).

Furthermore, the results of the study conducted by Omolayo et al (2013) revealed that there is no significant difference between adolescent-aged and adult-aged students in their attitude towards physical activity, which is corroborated by finding of Bouchard and Shepherd (1994). The possible explanation of this is that participation in physical activity at the adolescence stage is associated with a high attitude of physical activity in later life. This suggests that physical activities that cannot be performed at the adolescence stage are carried over to adulthood. Examples of this can be seen in sports or games like soccer, skiing and athletics where a strong carry-over value from adolescent to adulthood is present. Adolescent participating in relatively intensive endurance physical activity (such as soccer, skiing, orienteering & athletics) is associated with a high level of total activity and participation in endurance physical activity in adulthood. Omolayo, Olawa, and Omole, (2013). Majority of the students were passive commuters with only about one out of five identified as an active commuter while two-thirds of the students preferred to stick with the passive mode of travelling even though the active mode is linked with health benefits.

The attitude of an individual is based on his behavioral beliefs (what the individual believes will happen if he performs certain behavior) and consequences (positive or negative) of adopting this behavior. Having a positive attitude towards the bike increases the likelihood of using this mode of transport for commuting (de Souza, Sanches, Ferreira, 2014). With reference to attitudes that positively influence the option for the bicycle as a mode of transport, some authors highlight the concern about the environment, the pleasure of riding a bike and the not liking to drive (Dill and Voros, 2007; Heinen et al, 2011; Xing et al 2010, Handy and Heinen, 2012). On the other hand, some negative attitudes are: the belief that driving is a symbol of independence and freedom, enjoy driving and the perception that the individual needs the automobile to perform his activities (Jensen, 1999; Xing et al 2010, Handy et al, 2010).

## **2.6 Level of Practice of Active commuting among Adolescent and Young Adult**

Standardized data on adolescents' PA behaviour is lacking in Nigeria (Oyeyemi et al, 2016). The patterns and levels of physical activity among adolescents in Nigeria vary according to the adolescents' age, gender, weight status and SES. Nigerian adolescents and young adult needs to be targeted for effective physical activity promoting interventions. (Oyeyemi et al, 2016).

The decline in adolescents' physical activity is more pronounced in older (15–18years) than younger (12–14 years) adolescents (Troiano et al, 2008) in girls than boys (Butcher et al, 2008., Santos et al, 2009) and in black girls than white girls (Guthold, 2010). Also in developing countries, reduced physical activity in adolescents is rapidly becoming common, with physical inactivity prevalence reported to be between 65% and 92% in most African countries (Guthold, 2010). In Nigeria, more than half of school-going adolescents reported low levels of physical activity (Adeniyi, Okafor and Adeniyi 2011), with attendant rise in the prevalence of overweight (13.8%) and obesity (9.4%) in this age group (Oduwole et al, 2012).

Studies have shown that, only 8% to 35% of African youth engaged in sufficient levels of physical activity for 60 minutes a day on at least 5 days per week in the African region (Guthold, 2010). In Nigeria, about 72% of school going adolescents reported engaging in physical activity at least once a month (Senbanjo and Oshikoya. 2010), 59% engaged at moderate levels (Odunaiya, Ayodele and Oguntibeju, 2010), and more than 50% engaged in low levels of

physical activity (Adeniyi , Okafor, Adeniyi, 2011). However, no study was found that provided estimates on the proportion of Nigerian youth meeting the health-related recommended guidelines for sufficient levels of physical activity, and there is no data on the patterns and domains of physical activity among adolescents and children in Nigeria (Akinroye et al, 2014).

Childhood commuting patterns have been believed to be carrying over into adult life in most time (Tudor-Locke et al, 2002). In 1996, Roberts (1996) expressed his concern about children's changing transportation patterns in an editorial letter in which he said, '*it may be unrealistic to expect the chauffeured children of today to become the ambulant adults of tomorrow*'. In support of this view, evidence suggests that inactive behaviours adopted in childhood is more pronounced better than the active behaviours through transitions from adolescent to adulthood (Raitakari et al, 1994).

In Great Britain, transportation surveys indicate that children walking to school dropped from 80% in 1970 to almost 60% in 1991 (Hillman, 1993). The reasons for this apparent decrease include increased car ownership, community planning changes that favour motorized vehicles over pedestrians and increased concerns for children's personal safety (Tudor-Locke et al, 2002)

Neglecting active commuting to school resulted in a statistically significant decrease in the prevalence of achievement of health-related guidelines from 12% to 20%, which is almost the same thing for both genders. Likewise, the prevalence of sedentarism (defined as not meeting any of the guidelines) was increased by 17–22%. (Tudor-Locke et al, 2002)

## **2.7 Reinforcing Factors (Laws and policies guiding Active commuting in institution)**

At present, the promotion of physical exercise has become one of the Government's main objectives with respect to public health. This is due to the fact that among the goals to be achieved by the Government, is the prevention of the illnesses caused by sedentarism as well as boost of a healthy and suitable lifestyle (Partrick, Spear, Holt, and Sotka, 2001).World-wide, environmental and policy interventions have been recommended for promoting physical activity because they can influence large groups and bring about population-wide changes (WHO, 2004).

Urban and environmental policies can have high tendency to increase the physical activity levels in the population. Examples of these policies include: ensuring that walking, cycling and other

forms of active transportation are accessible and safe for all; or that schools have safe environment. (WHO, 2010)

The findings of Liao (2016) concluded that, seeing physically active people and positive aesthetic perceptions of the environment are key factors for developing transportation policies and intervention strategies for promoting public bicycle use among Taiwanese urban adults.

*Guideline 1: All adolescents should be physically active daily, or nearly every day, as part of play, games, sports, work, transportation, recreation, physical education or planned exercise, in the context of family, school and community activities (Sallis & Patrick, 1994).*

*Guideline 2: Adolescents should engage in three or more sessions per week of activities that last 20 min or more at a time and that requires moderate to vigorous levels of exertion (Sallis & Patrick, 1994).*

*Guideline 3: All young people should participate in physical activity of at least moderate intensity for one hour per day (Biddle et al. 1998).*

Available data suggested that the vast majority of U.S. adolescents meet the first guideline, but only about two thirds of boys and one half of girls meet the second guideline. This emphasizes the important effects of physical activity on the health of adolescents, and therefore the promotion of regular physical activity should be a priority for physicians and other health professionals. (Sallis & Patrick, 1994). This is a desirable situation that has to be maintained, developed and supported by University authorities.

## **2.8 Restraining Factors towards Active commuting in University community**

The factors influencing active commuting to school are related to multiple factors at multiple levels (Gropp et al, 2012) and they may be as varied as the number of regions or countries being considered. As such, understanding the factors associated with commuting to school will be useful in maintaining a physically active population (Cui et al, 2011). Generally, the factors documented include individual factors, family factors, environmental factors (Babey et al, 2009; Gropp et al, 2012), and policy and community issues (Tudor-Locke et al, 2001).

School proximity to residential homes has been identified as an important determinant of active commuting among children (Timpero et al, 2006). More children walk or cycle to school as distance decreases (McMillan, 2007). Similar studies among adolescents are scarce (Sjolie and Thuen, 2002)

Despite the fact that parents consistently cite distance as the number one barrier to their children actively commuting to school (Cooper et al 2005), only 31% of US children, who live within 1 mile of their school choose to walk, and only 2% who live within 2 miles choose to cycle (Centers for Disease Control and Prevention (2005). Among Irish adolescents, 22% of car users live within 1 mile, and 39% live within 2 miles of their school (Woods et al, 2004). Where distance is not a barrier to active commuting, other factors such as convenient to foot or cycle paths may inhibit walking or cycling.

According to Adeniyi, Okafor, Adeniyi (2011), the facilitators of active commuting from the most to the least prevalent include proximity of home to school, lack of transport fare, peer influence, bid to avoid bus-stop delays, and the notion of exercise and good health.

Research has shown that car ownership and attending private schools are associated with lower odds of walking and a higher likelihood of car travel to school (Timpero et al, 2006). Other studies have also revealed that children who report that their parents are scared of obscene practices such as about abduction/molestation or traffic danger and who restrict them from going out without an adult are more likely than others to be driven to school, (Timpero et al, 2006) while adolescents who report that there is never an adult at home after school, are more likely to walk/cycle to school. Evenson, (2003) Furthermore, parental perceptions of the need to cross several roads to reach play areas, and lack of traffic lights or crossings are negatively associated with children regularly walking or cycling to local destinations, including school. (Timperio et al, 2004) While population density, street connectivity, and mixed land use are associated with walking for transportation among adults, (Saalen, Sallis and Frank, 2003) in one of few studies that targeted children reveal that active commuting to school was positively associated with population density, not associated with connectivity, and negatively associated with school size. (Braza, Shoemaker, and Seeley, 2004)

## 2.9 THEORETICAL FRAME WORK

### Conceptual Framework

The PRECEDE framework principles were applied to this study

#### 2.9.1 THE PRECEDE FRAMEWORK

This outlines and describes the antecedent factors that influence behaviours. These factors are: Predisposing factors, Enabling factors and Reinforcing factors.

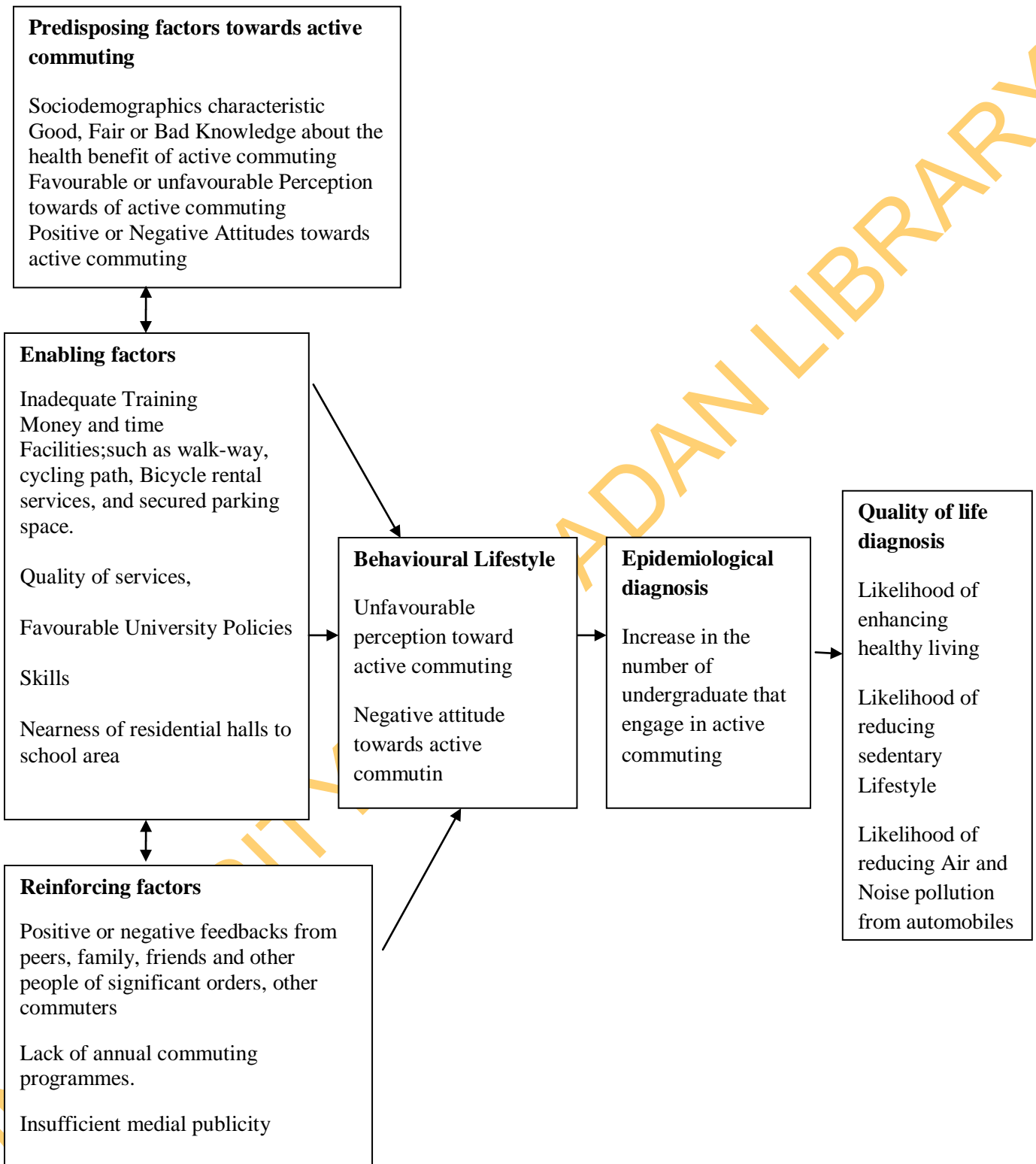
**Predisposing factors:** These are the antecedents to behaviour that provide rationale for the behaviour. They are socio-demographic, knowledge, perceptions, values, beliefs, attitudes, , norms, and behavioural intentions. Most young adult do not have enough knowledge about the health benefit of Active commuting. Predisposing factors have the potential to influence the decisions people take about their health and their given health behaviour. They do this by either encouraging the behaviour or by inhibiting the behaviour from occurring. The tenet of this framework guided in framing of question which probed into this factor, please see question 1-39

**Enabling factors:** These factors are also antecedents to behaviour because they also influence the realization of motives, aspirations and decisions. These include skills, everyday routines, personal resources, Training, Facilities; such as walk-way, cycling path, rental services, and secured parking space. Quality of service, university policies and ability to source for these resources, government policies and access to health related skills. This tenet also guided in framing question 43 and 44

**Reinforcing Factors:** This comprises of the feedback of influence of significant orders and people that influence the continuance or discontinuance of a particular behaviour. Examples of these factors include pressure from peers, siblings, co-workers, policy makers, patients, peer groups and other social support group. They are also factors subsequent to behaviour that provide perpetual rewards or incentives for the behaviour and contribute to its persistence or extraction. This tenet also helped in framing question 45, 46, 50, 51, 54, 55, 56, and 57

Behavioural lifestyle reveals the result of individual perception and attitude which have been influence by the predisposing, enabling and reinforcing factor.

## THE PRECEDE FRAMEWORK



**Figure 2.1: The PRECEDE Model Adapted to suit the study**

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Research design**

The study was a descriptive cross-sectional survey aimed at assessing the Knowledge, perception, Attitude and practice towards the Health benefit of investigating Active commuting among undergraduate students of the University of Ibadan

#### **3.2 Study area**

This study was carried out within the main campus of the University of Ibadan

#### **3.3 University of Ibadan**

University of Ibadan is located 8 kilometers from the center of the Ibadan in Ibadan North, Oyo state, Nigeria. It had an enrollment of over 12,000 students as of 2009. University of Ibadan cover a land mass of over 2,550 acres of land. The University of Ibadan started off as the University College, Ibadan (UCI) founded on 17 November 1948 as an external college of University of London; it was later named University of Ibadan in 1962. It is the oldest university in Nigeria and the only institution founded before the country became independent in 1960. The institution, occupying over 1032 hectares of Land, is located in Ibadan north Local Government area. There were 104 foundation students (including 49 students in teacher training and survey courses) who began their courses at Ibadan on 18 January 1948. The formal opening took place on 25 March, 1948. As at the time of the study, the university has a total enrolment of over 25,000 students shared among the 13 different faculties: Arts, Sciences, Basic Medical Sciences, Education, Veterinary Medicine, Technology, Law, Clinical Science, Pharmacy, Public Health, Dentistry, Social Science, Technology and the various institutes. (University of Ibadan postgraduate school prospectus, 2009). There are 12 halls of residence within the institution; nine out of the halls of residence are of undergraduate students while postgraduate students are accommodated in two halls of residence and one is a mixture of both undergraduate and postgraduate (both Male and Female) students. Six out of the nine undergraduate halls of residence are occupied by males



while the remaining three were designated for the females. The halls were used as a basis of the research study for easy tracing of the students

### **3.4 Study population**

The study population consisted of undergraduate students of the University of Ibadan who are undergoing full time academic programmes and are resident in various halls.

### **3.5 Inclusion criteria**

All consenting full-time undergraduate students of the University of Ibadan as well as undergraduate students residing in the various halls of residence in the University of Ibadan

### **3.6 Exclusion criteria**

To be excluded from the study population includes Postgraduate students, Part time students or distant learning students, Students who are staying off-campus and Non-consenting participants

### 3.7 Sample size Determination

**Table 3.1 undergraduate halls and students allocation for the 2015/2016 session**

<b>Name of Hall</b>	<b>Male/Female</b>	<b>No. of Blocks</b>	<b>No of Students</b>
Mellanby Hall	Male	4	493
Tedder Hall	Male	4	496
Ransome Kuti	Male	5	568
Queen Elizabeth	Female	9	1071
Obafemi Awolowo Hall	Female	7	1273
Independence	Male	4	829
Sultan Bello	Male	5	472
Nnamdi Azikwe	Male	4	868
Alexander Brown	Male and Female	5	561
Queen Idia	Female	7	1386
<b>TOTAL</b>			<b>8017</b>

**Source: University of Ibadan students' affairs division as at 2015/2016 academic session**

The sample for this study will be determined using the formula below:

$$n = \frac{N}{1 + N(e)^2}, (Yamane, 1967)$$

Where

n= required sample size

N= total population of undergraduate students in the selected halls of residence, University of Ibadan =8017 (**Source: University of Ibadan students' affairs division as at 2015/2016 academic session**).

e= level of error tolerance 5%

$$n = \frac{8017}{1 + 8017(0.05)^2}$$

$$n = 381$$

Adjusting the sample size for 10% non-response rate

$$n_f = \frac{n}{1 - n_r}$$

Where

$n_f = \text{adjusted sample size due to attrition}$

$n_r = \text{Non - response rate } 10\%$

$$n_f = \frac{381}{1 - 0.1}$$

$n_f = 423 \text{ participants}$

Number of respondents recruited in each hall was determined by proportionate sampling

No of students accommodated in each Hall × the sample size (n)

Total number of students in all Halls

<b>Residential hall</b>	<b>Proportionate sampling calculation</b>
1. Mellanby Hall	<u>493</u> ×423=26 8017
2. Tedder Hall	<u>496</u> ×423=26 8017
3. Ransome Kuti	<u>568</u> ×423=30 8017
4. Queen Elizabeth	<u>1071</u> ×423=57 8017
5. Obafemi Awolowo Hall	<u>1273</u> ×423=67 8017
6. Independence	<u>829</u> ×423=44 8017
7. Sultan Bello	<u>472</u> ×423=25 8017

8. Nnamdi Azikwe	<u>868</u> ×423=46 8017
9. Alexander Brown	<u>561</u> ×423=30 8017
10. Queen Idia	<u>1386</u> ×423=73 8017

Table 3.2 showing the proportionate sampling calculation

**Total Number of respondent to be recruited = 26+26+30+57+67+44+25+46+30+73 =424**

### 3.8 Sampling technique

A three stage sampling method was employed in selecting 424 respondents from the undergraduate students' population which involve the following stages

#### Stage 1

- One block each was selected by balloting from each of the 10 undergraduate Halls of residence in the University. This was done to ensure that all halls were represented in the selection procedure and all eligible respondents were giving equal chance of participating in the study.

#### Stage 2

- The sample size was proportionately selected from each of the halls based on the total number of residents accommodated in each hall. This was done after obtaining the total number of students allocated in each block from the students' affairs division of the University.

#### Stage 3

- Finally, in each selected block the sample size recruited was spread equally across the number of floors in the block in other to give each floor and its resident equal chances of representation and participation in the study. Only respondents that were willing and ready to participate in the study were recruited in the study.

### 3.9 Research Instrument

The research instrument is a Semi Structured self-administered questionnaire prepared in English language that consist of four section which are explained as follow; Section A- Socio

demographic data, Section B – Knowledge about the active commuting, Section C – Perception about the active commuting, section D- practice of active commuting. The questionnaire was made up of both open ended and closed ended questions. The questionnaire was adapted from the instrument of a study (Knowledge, Attitude and Practice of Physical Activities among Undergraduate Students of University of Nigeria) by Anido, Eskay and Ezeudu (2014). (Active Commuting to School as a Source of Health Promotion among Urban Day Secondary School Students in Ibadan, Nigeria: Barriers and facilitators) by (Adeniyi, Ogwumike, Ayanleke, Maruf, 2014)

### **3.10 Validity of instrument**

The following steps was taken to ensure the validity of the instruments in terms of expected measures, content, strength and accuracy; consultation of literature to develop a draft questionnaire, consultation with supervisor to work on the questionnaire.

Literature for this research was acquired from reliable sources. Google scholar, Sciencedirect, pubmed as well as WHO search box were used. The result of the literatures review was used to develop the questionnaire.

Review of draft instrument was done by expert in the health promotion and education and other department such as physical health education department as well as ethical review board.

### **3.11 Reliability of instrument**

Pretest was done by ensuring draft questionnaire was pretested in 10% of the sample size in Ibadan polytechnic which share similar characteristic with study area. After the questionnaire was pretested, crombach apha test was carried out of which a score of 0.7 and above was accepted as reliable as it is closer to 1. The crombach apha correlation coefficient for knowledge statement of the pretested instrument is 0.7 while that of the perception, attitude and practice statement is 0.9. Therefore, the instrument is reliable.

### **3.12 Procedure for data collection**

Six research assistant was recruited. Research assistant were trained using the draft questionnaire, after which they went to the field to collect data. A participatory approach was

used during the training where the research assistants were thought necessary skills on how to administer the questionnaire. They were also asked to demonstrate and perform role plays among themselves.

The research assistants were students of the University on part time programme and postgraduate students whose academic programmes and timetables were flexible enough to allow them to participate fully in the data collection exercise. They were monitored strictly to ensure that ethical norms and standards are observed before, during and after the data collection through daily assessment of the data collected, feedback from respondent as well as assessment of those research assistant's competencies before and during data collection of the field. The respondents were recruited from their various halls of residence and a self-administered questionnaire was giving to any participant who resides in the hall.

### **3.13 Data Management, Analysis and Presentation**

#### **3.13.1 Data Management**

Serial numbers were assigned to the administered copies of the questionnaire for easy identification, correct data entry, analysis and recall of any instrument with one problem or the other. Data collected were entered and managed using SPSS version 21.0 statistical software.

#### **3.13.2 Analysis**

Descriptive statistics such as percentage, mean, frequencies and standard deviation were used to summarize dependent and independent variables. For univariate/bivariate analysis, Chi-square test was utilized for cross-tabulations between the dependent and independent variables such as age, sex and level of practice of active commuting at a significant level of 0.05. The Mean were use to analyze items in section B, C and D which were designed to answer research question 2, 3 and 4. The responses were weighed and their Mean calculated. The criterion Mean score were obtained by adding all the scores that were assigned from agree to disagree to a statement or an item and dividing it by the number of possible responses to the statement. Logistic regression analysis between sex and level of active commuting practices was also used for measuring the magnitude of the relationship.

### **3.13.3 Categorization of respondent's knowledge on Health benefit of active commuting**

A total of 420 respondents responded to the knowledge question on the benefit of active commuting. The knowledge was categorized into poor, fair and good. 1 mark was allocated to each correct answer while 0 was allocated to each wrong answer. The total score for each correct answer equal 10marks. Respondents with total score that falls within 1 and 3 were assumed to be poor, respondents with total score  $> 3 - 6$  were assumed to be fair while respondents with total score of  $> 6 - 10$  were assumed to be good. As such, the total Knowledge point were summed, frequency and percentage were calculated

### **3.13.4 Categorization of Perception**

A total of 422 respondents responded to the perception statements on active commuting. The perception was categorized using 11-point scale. The perception of the respondent was computed based on only three categories of responses: Agree, Undecided and Disagree. Each selected questions on the scale attracts a score of 1 and the total number of questions on the scales is 11. Therefore the total score per respondent is 11.

As a way of categorizing the responses, respondent with score of  $\leq 5$  point was categorized as having "unfavourable perception" while scores of  $> 5$  point was categorized as "Favourable perception". As such, the total perception points were summed, frequency and percentages were calculated.

### **3.13.5 Categorization of Attitude**

A total of 422 respondents responded to the attitudinal statements on active commuting. The attitude was categorized using 11-point scale. The attitude of the respondent was computed based on only three categories of responses: Agree, Undecided and Disagree. Each selected questions on the scale attracts a score of 1 and the total number of questions on the scales is 11. Therefore the total score per respondent is 11.

As a way of categorizing the responses, respondent with score of  $\leq 5$  point was categorized as having "negative attitude" while scores of  $> 5$  point was categorized as "Positive attitude". As such, the total attitude points were summed, frequency and percentages were calculated.

### **3.13.6 Categorization of level of practice**

Level of practice was categorized into active, semi-active and passive mode of commuting (Adeniyi et al, 2011). Those that walk or cycle only as their most frequent transport means were categorized in to **active commuters**, those that use combination of motor-cycle, walking and motor vehicle as most frequent transport means were considered to be **semi-active commuters** while those that use public vehicle, private vehicle, motorcycle, tricycle as their most frequently used are considered to be **passive commuters**. In order to measure the magnitude of the relationship between sex and level of active commuting practices using logistic regression analysis, commuting practice was categorized into passive and active. Semi active commuters were considered to be passive

### **3.14 Ethical Consideration**

Ethical approval was sought from UI/UCH Ethics committee and informed consent was obtained from participant though it did not require the names but required their signatory for their willingness to participate.

#### **3.14.1 Confidentiality**

During and after data collection, the trust of the participant will be gained by assuring them that, confidentiality of data will be ensured by removing all identifiers from the instrument and storing the filled questionnaire in a saved place.

#### **3.14.2 Beneficence to participants**

Although there are no direct and immediate benefits to the participants, the information gathered from this study can be used towards improving physical activity among adolescent and young adult which thus improve the quality of their life. It may also help concerned authorities to design effective intervention in terms of policy formulation and supportive measure that will encourage active commuting thereby increasing physical activity among adolescent and young adult in our various institution.



### **3.14.3 Non-Maleficence to participants**

The research did not required collection of invasive materials. Therefore, safety of the participants will be guaranteed.

### **3.14.4 Voluntariness**

Participant will also be made aware that participation is voluntary and with which they can work away at anytime of their wish.

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## CHAPTER FOUR

### RESULTS

#### 4.1 Socio-demographic characteristics

The ages of respondent's ranges from 16 to 32 years with a mean of  $20.51 \pm 2.572$  years and 50.7% of respondents fell between the ages of 16 to 20 years age group which is 53% of the respondent. The respondents were male and female at equal number. Most of the respondents were single about 423 while one of the respondents was married. Majority of the respondent were Christian (84%) Majority of the respondent were Christian i.e they are about 84%, while 15.8% were Islam and 0.2 were traditional.

Majority 81.6% of the respondents were Yoruba which could be due to the geographical location as the sample site is a Yoruba dominated area. 10.1% of the respondents were Igbo while 0.9% were Hausa, others which consist of (Urobo, Tiv, Edo, Ijaw, Ogoni, Egun, delta) . Most of the respondents were from education department which represented 14.9% followed by respondent from Clinical science alongside with respondents from pure science 11.8%. others figure can be seen on **table 4.1**; 35.6% of the respondents were from 100L followed by respondent at 400level class which is 11%.figures for other levels can be seen on **the table 4.1**. 73%, 67%, 57% and 3.55% of the respondents which are Female reside in Queen Idia Hall, Obafemi Awolowo Hall, Queen Elizabeth hall and Alexander Brown Hall respectively. While the Male respondents resides in Mellaby 6.1%, Tedder 6.1%, Ransome Kuti 7.1, Independence 10.6%, Sultan Bello 5.9%, Nnamdi Azikwe, 10.6%, Alexader brown 3.55%. Details can be found on **Table 4.1**

Quite a few 34.1% of the respondent earn an income that falls between #6000 - #10000, 32% of the respondents earn an income that ranges between #12000-#20000, 18.2% earn between #500-5000 while 15.6% earn 24000 and above.

**Table 4.1a: Socio-demographic characteristics of the respondents (N=424)**

<b>Variable</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
<b>AGE (in years)</b>		
16-20	215	53.9
20-25	155	38.8
25 and above	29	7.3
<b>SEX</b>		
Male	212	50
Female	212	50
<b>MARITAL STATUS</b>		
Single	423	99.8
Married	1	0.2
<b>RELIGION</b>		
Christianity	356	84.0
Islam	67	15.8
Traditional	1	0.2
<b>ETHNICITY</b>		
Yoruba	346	81.6
Igbo	43	10.1
Hausa	4	0.9
Others*	30	7.1
<b>FACULTY</b>		
Clinical Science	50	11.8
Basic Medical Science	25	5.9
Technology	47	11.1
Science	50	11.8
Art	48	11.3
Law	25	5.9
Social Science	49	11.6
Dentistry	6	1.4
Public Health	5	1.2
Pharmacy	10	2.4
Agriculture and Forestry	38	9.0
Veterinary Medicine	8	1.9
Education	63	14.9
Others {Urobo, Tiv, Edo, Ijaw, Ogoni, Egun, delta}		

**Table 4.1b: Socio-demographic characteristics of the respondents (N=424)**

<b>Variable</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
Level of study		
100	151	35.6
200	74	17.5
300	65	15.3
400	77	18.2
500	47	11.1
600	10	2.4
<b>RESIDENTIAL HALL</b>		
Mellaby*	26	6.1
Tedder*	26	6.1
Ransome Kuti*	30	7.1
Queen Elizabeth**	57	13.4
Obafemi Awolowo**	67	15.8
Independence*	45	10.6
Sultan Bello*	25	5.9
Nnamdi Azikwe*	45	10.6
Alexander Brown***	30	7.1
Queen Idia**	73	17.2
<b>MONTHLY INCOME</b>		
500-5000	70	18.2
6000-10000	131	34.1
12000-20000	123	32.0
24000 and above	60	15.6

(\* indicate Male, \*\* indicate Female while \*\*\* indicate both Male and Female)

## 4.2 Knowledge of active commuting

Majority 62.5% stated that they are familiar with the word active commuting while 32.5% said they were not familiar with the word. 62.5% of the respondent stated correctly that Active commuting is a form of physical activity programmes. 39% of the respondent stated wrongly that active commuting involve the use of drugs to make one healthy. 73% were able to state rightly that active commuting involve working and cycling as a means of transport. 5% stated poorly that active commuting makes one add weight while 1 % of them stated poorly that active commuting involve watching television programme at ones leisure.

Out of the respondents, 45.2% stated correctly that swimming is not an example of active commuting, 11.6% stated wrongly that walking is not an example of active commuting. 56.7% stated correctly that dancing is not an example of active commuting, 54.5% stated correctly that travelling by car is not an example of active commuting. 11.6% stated wrongly that cycling is not an example of active commuting while 59.2% stated correctly that travelling by air is not an example of active commuting. 91.5% of the respondent stated that active commuting have any benefit.

Quite a few 53.1% of the respondent chose 'Time consuming' as option that is not part of the benefit of active commuting. 44.8% of the respondent chose 'Electrocution' as the option that is not part of the risk associated with active commuting. 39.2% of the respondent chose correctly that 'none of the above' is the answer under protective that should not be used during active commuting.

The mean Knowledge score was  $5.85 \pm 2.2$ . Result shows that majority (46.7%) of the respondents had fair knowledge of the health benefits of active commuting while 38.8% had good knowledge and only 14.5% had poor knowledge. See figure 4.2

**Table 4.2a**Frequency distribution of Knowledge of the respondents

<b>Variables</b>	<b>Yes%</b>	<b>No%</b>	<b>Total</b>
Familiar with the word active commuting?	265(62.5)	138(32.5)	403
<b>Active commuting*</b>			
a. <i>It is a form of physical activity programmes</i>	265(62.5)**	159(37.5)	424
b. <i>It involve the use of drugs to make one healthy</i>	39(9.2)	385(90.8)	424
c. <i>It involve working and cycling as a means of transport</i>	312(73.6)**	112(26.4)	424
d. <i>It makes one add weight</i>	5(1.2)	419(98.8)	424
e. <i>It involve watching television programme at ones leisure</i>	1(0.2)	423(99.8)	424
<b>Are not an example of active commuting*</b>			
a. Swimming	192(45.2)**	226(53.3)	418
b. Walking	49(11.6)	369(87.0)	418
c. Dancing	236(56.7)**	182(42.9)	418
d. Travelling by car	231(54.5)**	187(44.1)	418
e. Cycling	49(11.6)	369(87.0)	418
f. Traveling by air	251(59.2)**	167(39.4)	418
<b>Active commuting have any benefit</b>	388(91.5)**	9(2.1)	397
<b>The benefit of active commuting are except</b>			
a. <i>Healthy Living</i>	31(7.3)	393(92.7)	424
b. Reduce cost of transportation	42(9.9)	382(90.1)	424
c. Time consuming	225(53.1)**	199(46.9)	424
d. Environmental Friendliness	19(4.5)	405(95.5)	424
e. A form of physical exercise	29(6.4)	395(93.6)	424
f. Mental alertness	21(5.0)	403(95)	424
<b>Risk associated with Active commuting except</b>			
Road accident	55(13.0)	369(87)	424
Risk of inhaling particles	32(7.6)	392(92.4)	424
Risk of theft	33(7.8)	391(92.2)	424
Electrocution	190(44.8)**	234(55.2)	424
Insecurity	42(9.9)	382(90.1)	424

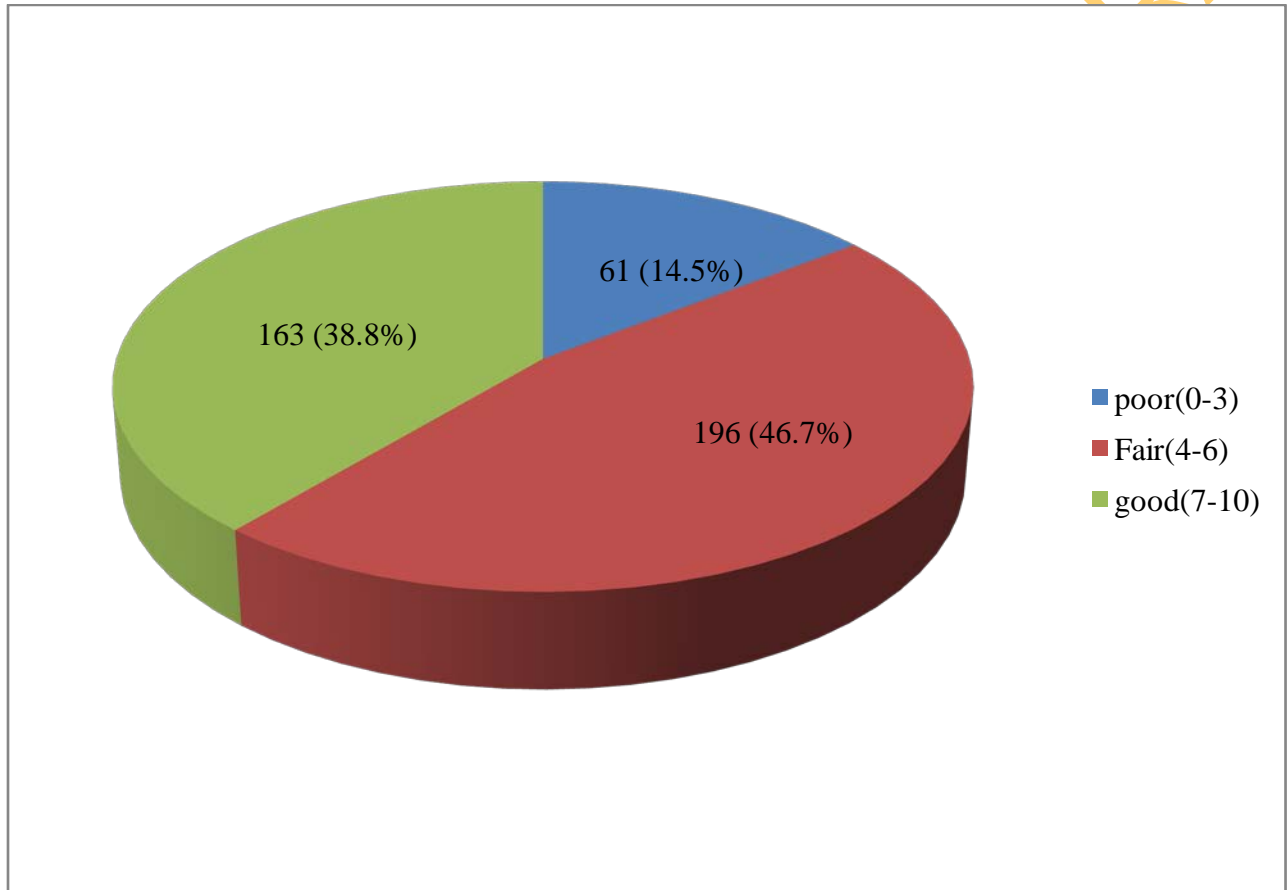
\* Multiple responses\*\* Correct answer

**Table 4.2b** Frequency distribution of Knowledge of the respondents

<b>Variables</b>	<b>Yes%</b>	<b>No%</b>	<b>Total</b>
<b>Not protective equipment that should be used during active commuting</b>			
a. Face Mask/Nose cover	55(13.0)	369(87)	424
b. Head helmet	21(5.0)	403(95)	424
c. Knee guard	9(2.1)	415(97.9)	424
d. Chest guard	17(4.0)	407(96)	424
e. Sun glass	18(4.3)	406(95.8)	424
f. Face cap	74(17.5)	350(82.6)	424
g. None of the above	166(39.2)**	258(60.8)	424

\* Multiple responses

\*\* Correct answer



**Figure 4.1** Frequency distribution of the respondents Knowledge on the benefits of active commuting.



### 4.3 Perception of the Undergraduate student towards active commuting

To some extent, 32.9% agree that an individual who engages in active commuting will live longer than people who do not participate in active commuting while 8.7% and 32.8% chose 'disagree' and 'undecided' respectively.

Only 44% disagree that Engaging in active commuting could easily make one get tired while 29% and 23% chose 'agree' and 'undecided' respectively.

Majority 65.7% agree that a person who often participates in active commuting is always active in thinking, while 5.7% and 26.5% chose 'Disagree' and 'Undecided' respectively.

Majority, 73% of the respondents agree that active commuting is for everybody while 13% and 11.6% chose 'Disagree' and 'Undecided' respectively.

Very few 10.6% disagree that Unmarried young girls should not participate in active commuting while majority (76.1% and 12.1%) chose 'Agree' and 'Undecided' respectively.

Majority 82.7% agree that Frequent participation in active commuting makes one look healthy while 3.5% and 13% chose 'disagree' and 'undecided' respectively.

Only 5.4% disagree that It is a sign of poverty for student to engage in active commuting while majority (82.7% and 10.9%) chose 'Agree' and 'Undecided' respectively

Only 5.2% disagree that It is against their cultural belief to engage in active commuting every day while majority (85.8% and 7.6%) chose 'Agree' and 'Undecided' respectively.

Majority 69.5% of the respondents agree that Active commuting can be used to manage illness like diabetes or obesity while 9% and 20.6% chose 'Disagree' and 'Undecided' respectively.

Majority 59.3% agree that Participating in active commuting makes one happy while 5.2% and 34.5% chose 'disagree' and 'undecided' respectively.

Quite a large number 84.9% of the respondents agree that Participating in physical activity programme increases blood circulation while 4% and 10.4% chose 'Disagree' and 'Undecided' respectively. See table 4.3

From the result, the mean perception score was  $2.15 \pm 1.7$ . Majority (96.2%) have unfavourable perception about active commuting while only 3.8% had Favorable perception about active commuting.

**Table 4.3 Perception of the Undergraduate towards active commuting**

<b>Statements</b>	<b>Agree(%)</b>	<b>Disagree(%)</b>	<b>Undecided(%)</b>	<b>Total*</b>
An individual who engages in active commuting will live longer than people who do not participate in active commuting.	241(32.9)**	37(8.7)	139(32.8)	417
Engaging in active commuting could easily make one get tired	126(29.7)	186(44.0)**	101(23.9)	413
A person who often participates in active commuting is always active in thinking.	278(65.7)**	24(5.7)	112(26.5)	414
Active commuting is for everybody.	310(73.3)**	55(13.0)	49(11.6)	414
Unmarried young girls should not participate inactive commuting	322(76.1)	45(10.6)**	51(12.1)	418
Frequent participation in active commuting makes one look healthy.	349(82.5)**	15(3.5)	55 (13.0)	419
It is a sign of poverty for student to engage in active commuting	350 (82.7)	23(5.4)**	46(10.9)	419
It is against my cultural belief to engage in active commuting every day	363(85.8)	22(5.2)**	32(7.6)	417
Active commuting can be used to manage illness like diabetes or obesity.	294(69.5)**	38(9.0)	87(20.6)	419
Participating in active commuting makes one happy	251(59.3)**	22(5.2)	146(34.5)	419
Participating in physical activity programme increases blood circulation.	359(84.9)**	17(4.0)	44(10.4)	420

(\*\* favorable perception)

#### 4.4 Attitude of the Undergraduate towards Active commuting

Majority 90.1% agree that they can participate in active commuting even if they have the money to board taxi to school while 5.2% and 4.3% chose 'disagree' and 'Undecided' respectively.

Only 8% disagree that active commuting is not an activity they will encourage whereas, majority of the respondents 82% and 9.5% chose agree and Undecided respectively.

Only 7.1% disagree that active commuting is too dangerous for them to participate whereas, majority of the respondents 84.2% and 7.8% chose agree and Undecided respectively (a negative attitude).

Majority 75.2% agree that they enjoy cycling and walking from their place of residence to school while 7.1% and 16.3% chose 'Disagree' and 'Undecided' respectively.

Quite a large number 67.6% agree that they are fascinated by the site of active commuters while 9.5% and 22.2% chose 'Disagree' and 'Undecided' respectively.

High percentage 78.7% of the respondents agree that people who cycle frighten them while only 8.7% disagree that people who cycle frighten them and 12.1% chose undecided.

Majority 82.7% of the respondents agree that they hate engaging in active commuting while 32% disagree that they hate engaging in active commuting, 9% chose undecided

Quite a few 31.7% agree that they like reading materials on active commuting while 28.8% and 38.8% chose 'Disagree' and 'Undecided' respectively.

Majority 61.7% agree that they were comfortable discussing active commuting with their friends and siblings while 10.2% and 27.4% chose 'Disagree' and 'Undecided' respectively.

Quite a large number 74.2% agree that they like associating with people that do participate in physical activity programmes while 4.3% and 21.3% chose 'Disagree' and 'Undecided' respectively.

Majority (65.7%) of the respondents agree that they don't like engaging in active commuting because they get tired easily while only 16.1% disagree that they hate engaging in active commuting, 17.3% chose undecided.

The result of this study shows that, the mean attitude score was  $1.78 \pm 1.6$ . Majority (96.4%) have negative attitude about active commuting and 3.6% had positive attitude about active commuting.

**Table 4.4 Attitude of the Undergraduate towards active commuting**

<b>Statements</b>	<b>Agree(%)</b>	<b>Disagree(%)</b>	<b>Undecided(%)</b>	<b>Total*</b>
I can participate in active commuting even if I have the money to board taxi to school	381(90.1)**	22(5.2)	18(4.3)	421
Active commuting is not an activity I will encourage	347(82.0)	34 (8.0)**	40 (9.5)	421
Active commuting is too dangerous for me to participate	356 (84.2)	30(7.1)**	33(7.8)	419
I enjoy cycling and walking from my place of residence to school	318(75.2)**	30 (7.1)	69(16.3)	417
I am fascinated by the site of active commuters	286(67.6)**	40(9.5)	94(22.2)	420
People who cycle frighten me	333(78.7)	37(8.7)**	51(12.1)	421
I hate engaging in active commuting.	350 (82.7)	32(7.6)**	38(9.0)	420
I like reading materials on active commuting.	134(31.7)**	122(28.8)	164(38.8)	420
I am comfortable discussing active commuting with my friends and siblings.	261(61.7)**	43(10.2)	116(27.4)	420
I like associating with people that do participate in physical activity programmes	314(74.2)**	18(4.3)	90(21.3)	422
I don't like engaging in active commuting because I get tired easily	278(65.7)	68(16.1)**	73(17.3)	419

**(\*\* positive Attitude)**

#### 4.5 Practice of active commuting among respondents

It was found out that 15.3% of the respondent used public vehicle in the last one month, 4.7% used private vehicle, 42.6% used walking as a means of transport to school, 3.6% used cycling, 13.4% used motorcycle(okada), 1.2% used Tricycle (keke NAPEP), 18.7% used Combination (of walking, motor vehicle/okada etc) while 0.5% others. Check table 4.5The study went further to document the most frequently used out of this various transport means which can be seen in figure 4.2

Table 4.6also reveals that 26.1% of those that reported they use walking or cycling or combination (of walking, Motor vehicle/ okada etc) as the most frequent transportation means was found to use this because of short distance between residence and lecture room. 5.4% used it because of Long distance between residence and lecture room. 6.3% used in order to get to school faster, 3.4% used it of unfavourable wealther condition, 6.3% used it because their friend uses it, 9.1% used it to avoid bus-stop delays. 3.9% used it because of the traffic conditions on the roads, 4.5% used it because of Lack of access to other means, 8.0% used it because of Lack of transport fare, 1.2% used it because their parent made them to use it, 22.4% reported they used it for the purpose of exercise and good health this account, for the impact of the respondent's knowledge about the health benefit of active commuting towards its practices. 2.4% reported they don't have any reason why they used it.

Table 4.7shows the frequency and percentage of respondents reasons for not opting for walking and cycling. Out of 127 respondents that opted for any other transport means aside walking and cycling, 49.6% did not walk or cycle because of Long distance between residence and lecture room. 58.3% did not walk or cycle because of wanting to get to school faster.17.3% did not walk or cycle because of School bus/taxi policy. 16.5% did not walk or cycle because their friend use other means, 19.7% did not opt for walking and cycling because of unsafe traffic conditions on the roads. 15.8% did not opt for walking and cycling because of high crime rate in the street, 13.4% did not opt for walking and cycling because of Lack of access to other means. 9.5% did not opt for walking and cycling because of Lack of road sidewalks. 28.4% did not opt for walking and cycling because of Lack of cycling skills, 7.9% did not opt for walking and cycling because their parent make them use other means

**Figure 4.2** shows the most frequent mode of transportation in the last one month. 15.6% used public vehicle, 1.7% used private vehicle, 60.8% walked, 0.9% cycled, 3.3% used motorcycle, 0.2% used Tricycle, 17% used Combination (of walking, Motor vehicle/ motorcycle etc)

This shows that 61.7% of the respondents in this study were active commuters, 17% were semi active commuters while 21.3% were passive commuters.

**Figure 4.3** shows frequency of use of preferred transportation in a week, 64.2% made use of their preferred choice 5 days a week, 14.2% use their most frequent mode of transportation 4 days a week, 16.8% use the most frequent mode of transportation they chose 3 days a week and below

Majority 88.8% reported they have participated in active commuting before, while 9.4% said they haven't. 72.6% reported they do participate in physical activity programmes everyday while 25.5% said no. 36.5% reported they commute actively only at their leisure while 58.9% reported said they commute actively not only at their leisure. 77.4% reported they commute actively with team or individual while 14.7% reported they do not commute actively with team or individual. 68.4% reported they walk or cycle with partners while 29% said they don't. 57.4% make new friends whenever they are walking or cycling while 35.4% reported they do not. 70.2% reported they always feel happy each time they participate in active commuting while 11.4% reported they do not. 61.5% reported their friends, lecturer and school authority encourage active commuting while 17.5% said they do not. 61.5% reported that their cultural belief encourage active commuting while 13.3% reported their cultural belief does not encourage active commuting. 70.1% reported that their parent encourage active commuting while 16.2% said their parent did not. 50.5% said the friends they do make during active commuting do add values to their life while 11.3% said they don't. 56.8% reported they have participated in cycling in the past i.e during childhood or while growing up. See table 4.8

Nearly half (47%) of the respondents reported they have never engage in cycling as a form of active commuting, 34.5% said they sometime while only 18.4% always cycle as a form of active commuting see figure 4.4.

Figure 4.5 shows Respondents practice as regards Riding bicycle from residential hall to lecture room. Majority (78.1%) have never ride bicycle from residential hall to lecture room before, 18.5% sometimes while only 3.4% always

**Table 4.5 Mode of transport among respondents in the last one month**

Variables	Frequency (%)
<b>Means of transport to lecture room in the last one month(multiple choice)</b>	
<i>Walking</i>	344(42.6)
<i>Combination (of walking, motor vehicle/motorcycle etc)</i>	151(18.7)
<i>Public vehicle</i>	124(15.3)
<i>By Motorcycle</i>	108(13.4)
<i>Private vehicle</i>	38(4.7)
<i>Cycling</i>	29(3.6)
<i>Tricycle</i>	10(1.2)

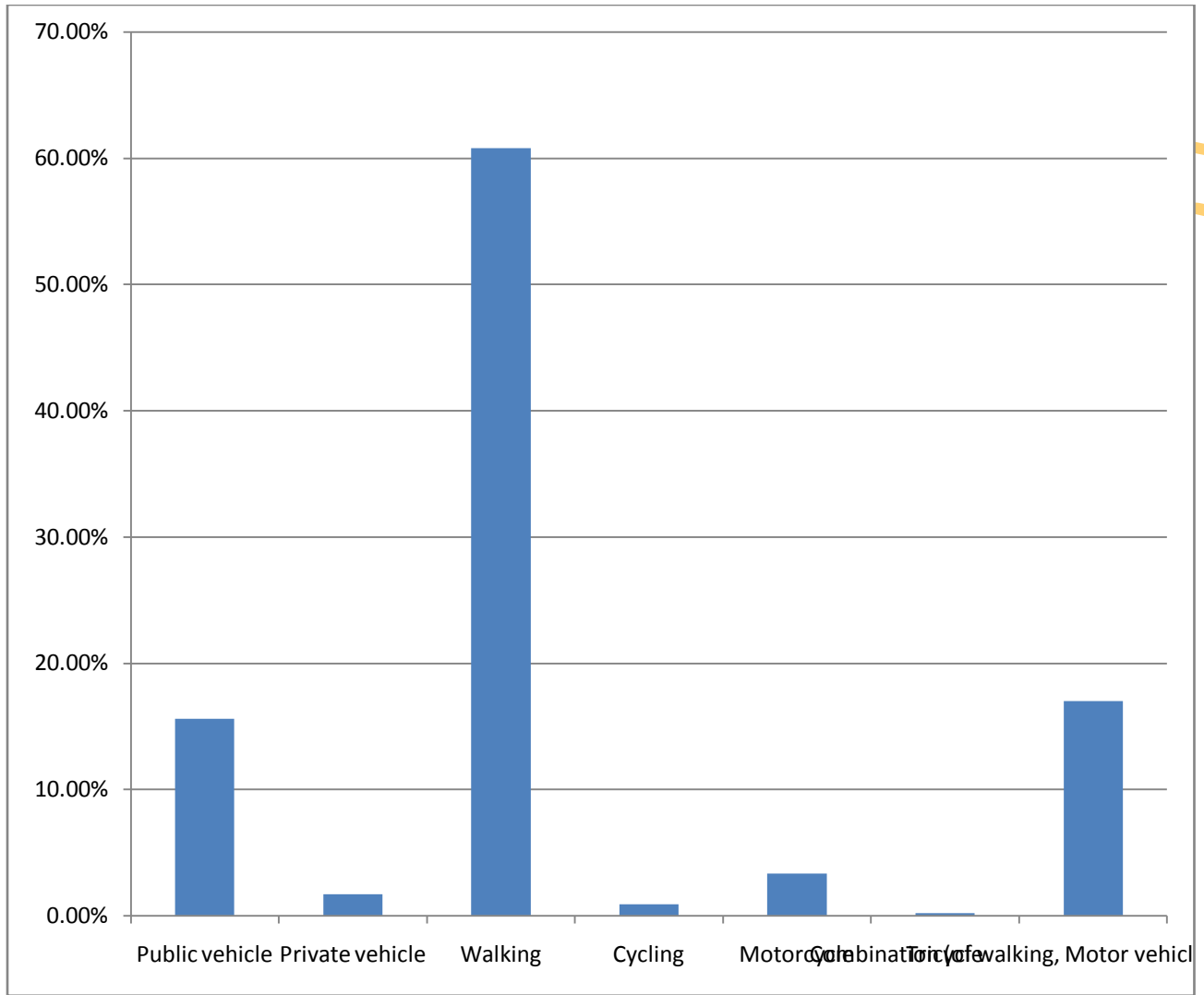


Figure 4.2 Respondent's most frequently used means of transport from residential hall to lecture room in the last one month.



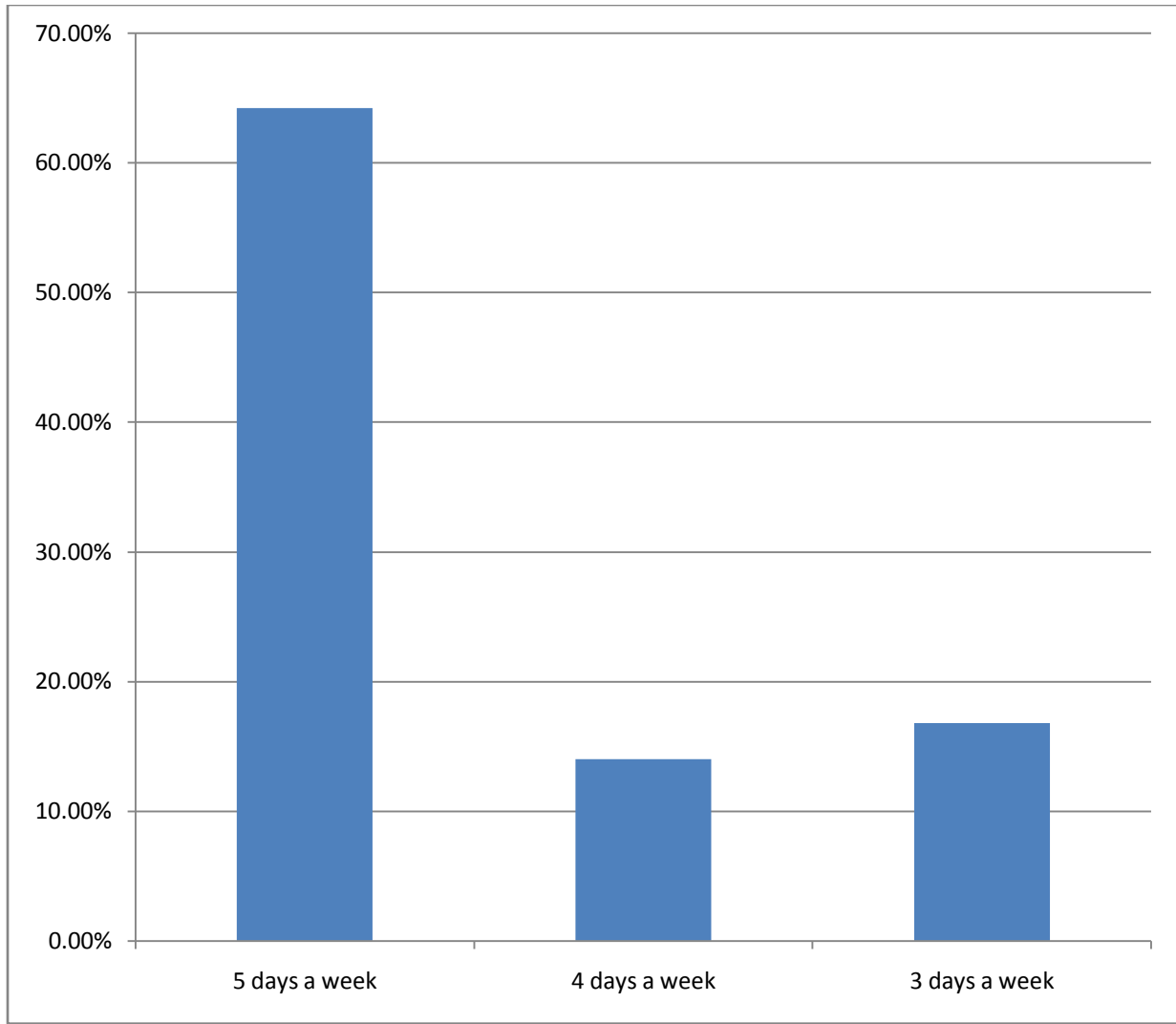


Figure 4.3 Frequency of use of most preferred means of transportation from residential halls to lecture room.

**Table 4.6 Reasons why respondents chose to walk or cycle**

Variable	No(%)
<b>Reasons for opting to walk and cycle</b>	
<i>Short distance between residence and lecture room</i>	253(26.1)
<i>For exercise and good health</i>	217(22.4)
<i>To avoid bus-stop delays</i>	88(9.1)
<i>Lack of transport fare</i>	77(8.0)
<i>In order to get to school faster</i>	61(6.3)
<i>Because my friends use it</i>	61(6.3)
<i>Long distance between residence and lecture room</i>	52(5.4)
<i>Lack of access to other means</i>	44(4.5)
<i>Unsafe traffic conditions on the roads</i>	38(3.9)
<i>Unfavourable weather conditions</i>	33(3.4)
<i>My parents make me use it</i>	12(1.2)

**Table 4.7 Reasons why respondents do not walk or cycle**

	n=127
Variable	No(%)
<b>Reasons for not walking and cycling</b>	
<i>In order to get to school faster</i>	74(18.5)
<i>Long distance between residence and lecture room</i>	63(15.8)
<i>Unfavourable weather conditions</i>	55(13.8)
<i>Lack of cycling skills</i>	36(9.0)
<i>Short distance between residence and lecture room</i>	27(6.8)
<i>Unsafe traffic conditions on the roads</i>	25(6.3)
<i>School bus/taxi policy</i>	22(5.5)
<i>Because my friends use it</i>	21(5.3)
<i>High crime rate in the street</i>	20(5.0)
<i>I don't know</i>	18(4.5)
<i>Lack of access to other means</i>	17(4.3)
<i>Lack of road sidewalks</i>	12(3.0)
<i>My parents make me use it</i>	10(2.5)

**Table 4.8 Active commuting Practices among Respondents**

<b>Statements</b>	<b>Yes (%)</b>	<b>No (%)</b>	<b>Don't know (%)</b>	<b>Total*</b>
Have you ever participated in active commuting before?	373(88.8)	40(9.4)	7(1.7)	420
Do you participate in physical activity programmes such as active commuting every day?	304(72.6)	107(25.5)	8(1.9)	419
Do you commute actively only during your leisure time?	150(36.5)	242(58.9)	19(4.6)	411
Do you commute actively with team or individually?	315(77.4)	60(14.7)	32(7.9)	407
Do you walk or cycle with partners?	285(68.4)	121(29)	11(2.6)	417
Do you make new friends whenever you are walking or cycling?	238(57.4)	147(35.4)	30 (7.2)	415
Do you always feel happy each time you participate in active commuting?	295 (70.2)	48(11.4)	77(18.3)	420
Did your friends, lecturer and school authority encourage active commuting?	257(61.5)	73(17.5)	88(21.1)	418
Did your cultural belief encourage active commuting?	258(61.4)	56(13.3)	106(25.2)	420
Did your Parent encourage active commuting?	293(70.1)	68(16.2)	57(13.6)	418
The friends you make during active commuting, do they add values to your life?	205(50.5)	46(11.3)	155(38.2)	406
Have you participated in cycling in the past i.e during childhood or while growing up?	235(56.8)	151(36.5)	28(6.8)	414

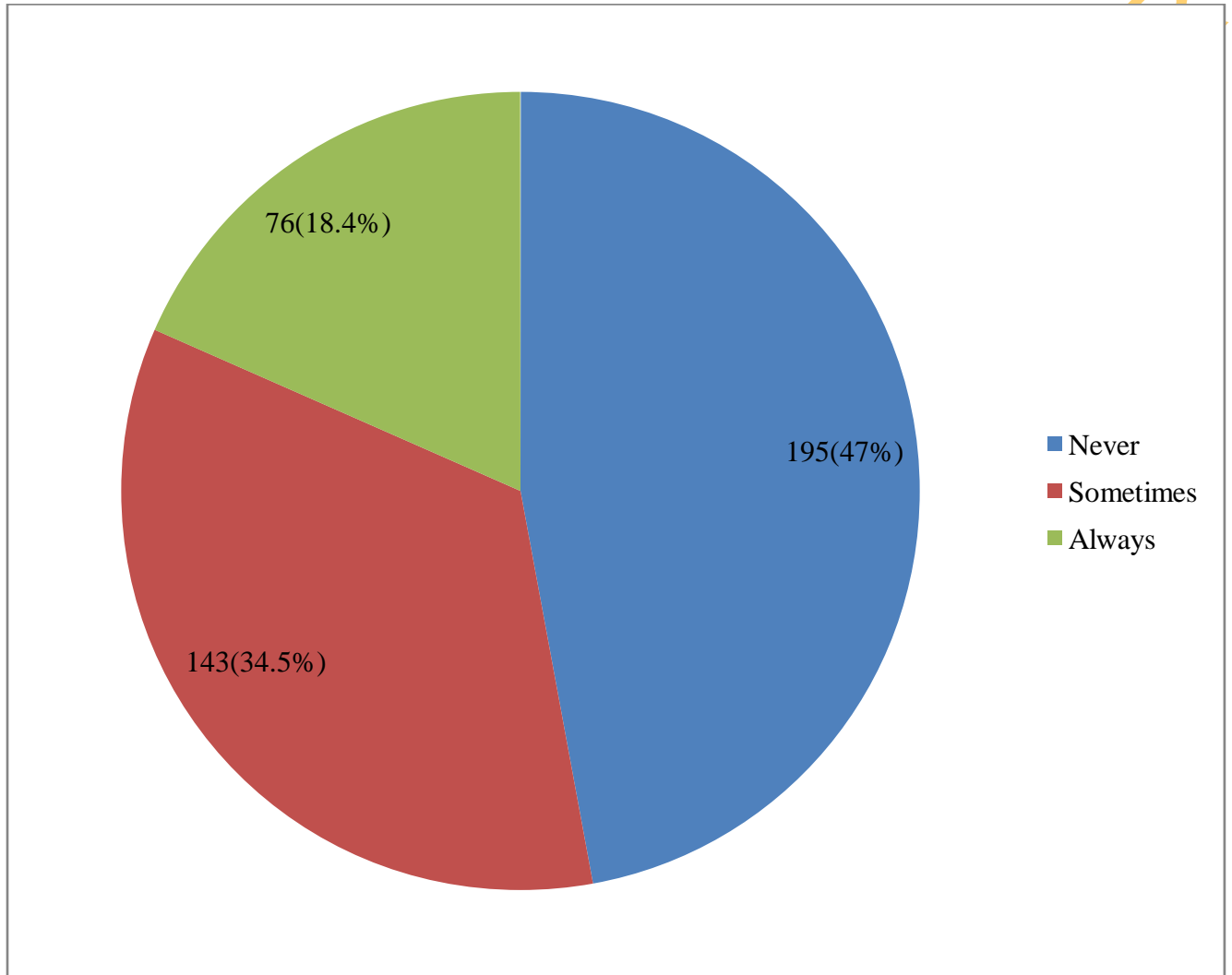


Figure 4.4 Respondents level of cycling as a form of active commuting

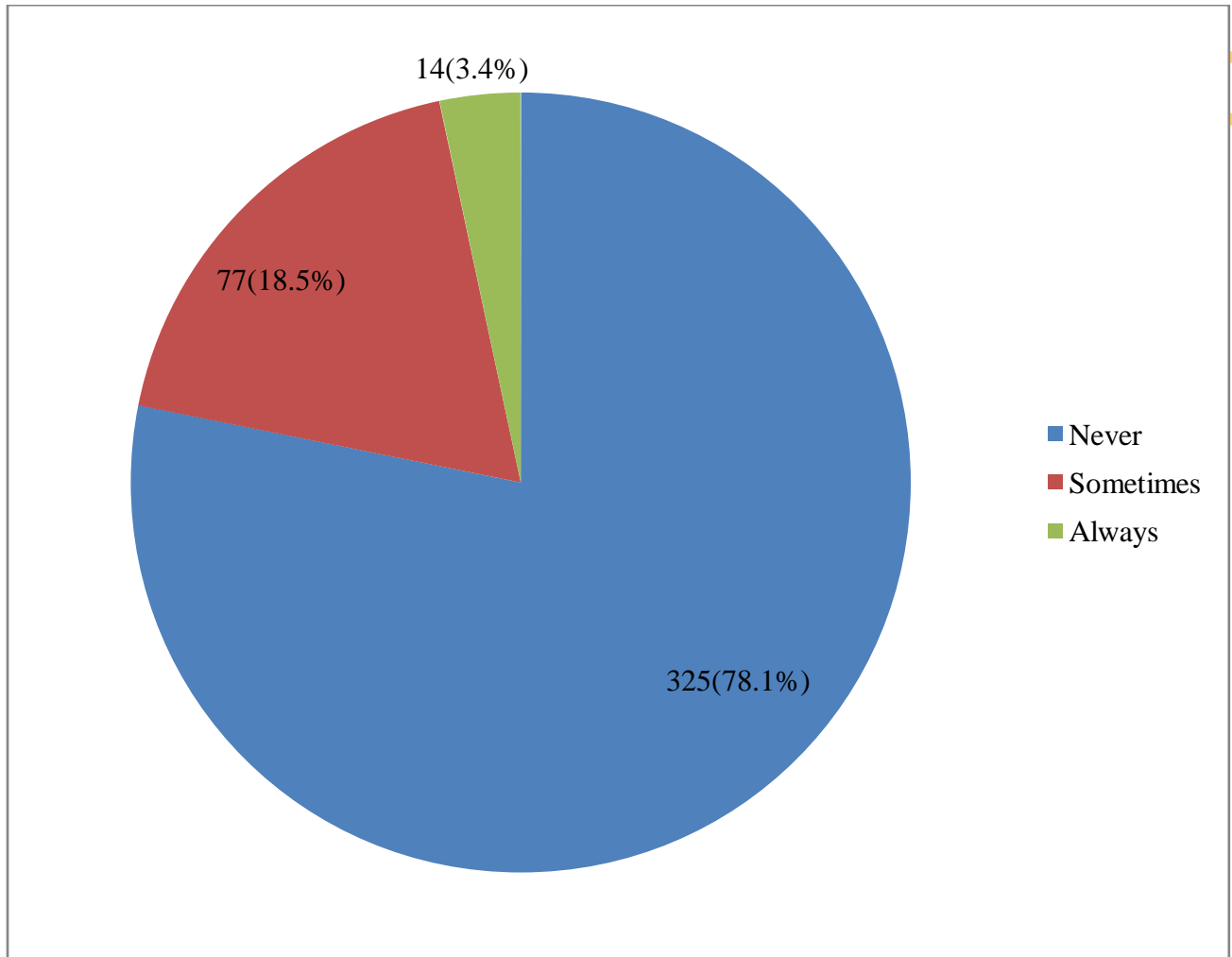


Figure 4.5 Respondents practice as regards Riding bicycle from their residential hall to their lecture room

## 4.6.1 Test for Hypotheses

### Hypothesis 1

The null hypothesis states that there is no association between socio-demographic of the respondents and the Respondents Knowledge of health benefit of active commuting.

In order to have a clear view of the association between variables, Fishers Exact was used to ascertain the true relationship of all been considered in the socio-demographic characteristic with the knowledge of active commuting among the undergraduate students

A total of 420 responded to the Knowledge question. Of this, 212(50.5%) of male responded while 208(49.5%) of Female responded. 63.9% of those that had poor knowledge were male while 36.1% of those that had poor knowledge were Female. 46.4% of those that had fair knowledge were male while 53.6% were female, out of those that had good knowledge, 50.3% were male while 49.7% were female. The result shows that female had better knowledge than the male. The association between gender of the respondents and Knowledge of active commuting was not significant as the p-value (0.085) is greater than 0.05. Hence we accept the null hypothesis. ( $X^2= 5.706$ ,  $df=2$ ,  $p\text{-value}=0.085$ )

The association between marital status of the respondents and Knowledge of active commuting was not significant as the p-value (1.000) is greater than 0.05. Hence we accept the null hypothesis. ( $X^2= 1.146$ ,  $df=2$ ,  $p\text{-value}=1.000$ )

The association between ethnicity of the respondents and Knowledge of active commuting was not significant as the p-value (0.458) is greater than 0.05. Hence we accept the null hypothesis. ( $X^2= 10.162$ ,  $df=8$ ,  $p\text{-value}=0.458$ )

The association between religion of the respondents and Knowledge of active commuting was not significant as the p-value (0.510) is greater than 0.05. Hence we accept the null hypothesis. ( $X^2= 3.174$ ,  $df=4$ ,  $p\text{-value}=0.510$ )

The association between level of study of the respondents and Knowledge of active commuting was significant as the p-value (0.041) is less than 0.05. Hence we reject the null hypothesis. ( $X^2= 18.904$ ,  $df=4$ ,  $p\text{-value}=0.041$ )

The association between age of the respondents and Knowledge of active commuting was not significant as the p-value (0.058) is greater than 0.05. Hence we accept the null hypothesis. ( $X^2=9.065$ ,  $df=4$ ,  $p\text{-value}=0.058$ )

Queen idia hall that had the highest respondent of about 72(17.14%) was found to have very low percentage of respondents with poor knowledge scores 7(11.5) compare to sultan Bello that is occupied by male respondents with fewer of the participants of about 25(6%) also had a knowledge score of 7(11.5). Alexander brown hall 30(7.1%) participant had 1(1.6%) of respondent with poor knowledge score. These differences may be due to health awareness that might have been carried out by favored Hall of residence i.e hall with good knowledge score. Alexander hall is also a hall that is occupied with Medical students who must have been exposed to health benefit of active commuting. See table 4.9 for further reference. The association between residential Hall of the respondents and Knowledge of active commuting was significant. as the p-value (0.001) is lesser than 0.05. Hence we reject the null hypothesis. ( $X^2=41.865$ ,  $df=18$ ,  $p\text{-value}=0.001$ )



**Table 4.9 Association between socio demographic characteristics and Knowledge of respondents on active commuting.**

Variable	Knowledge of Active Commuting			Total	Df	X <sup>2</sup>	p-value
	Poor (0-3) N (%)	Fair(4-6) N (%)	Good(7-10) N (%)				
<b>SEX</b>							
Male	39(63.9)	91(46.4)	82(50.3)	<b>212</b>	2	5.706	0.057
Female	22(36.1)	105(53.6)	81(49.7)	<b>208</b>			
<b>TOTAL</b>	<b>61</b>	<b>196</b>	<b>163</b>	<b>420</b>			
<b>MARITAL STATUS</b>							
Single	61(100)	195(100)	163(100)	<b>419</b>	2	1.146***	1.000
Married	0(0)	1(0)	0(0)	<b>1</b>			
<b>TOTAL</b>	<b>61</b>	<b>196</b>	<b>163</b>	<b>420</b>			
<b>Ethnicity</b>							
Yoruba	49(81.7)	164(83.7)	129(79.1)	<b>342</b>	8	10.162***	0.458
Igbo	7(11.7)	16(8.2)	20(12.3)	<b>43</b>			
Housa	0(0)	1(0.5)	3(1.8)	<b>4</b>			
other	4(6.6)	15(7.6)	11(6.8)	<b>30</b>			
<b>TOTAL</b>	<b>60</b>	<b>196</b>	<b>163</b>	<b>419</b>			
<b>RELIGION</b>							
Christianity	52(85.3)	160(81.6)	140(85.9)	<b>352</b>	4	3.174***	0.510
Islam	9(14.8)	36(18.4)	22(13.5)	<b>67</b>			
others	0(0)	0(0)	1(0.6)	<b>1</b>			
<b>TOTAL</b>	<b>61</b>	<b>196</b>	<b>163</b>	<b>420</b>			

(\* means the p-value that is significant)(\*\*\* means fisher's exact was used in cross tabulating)

**Table 4.9b Association between socio demographic characteristics and Knowledge of respondents on active commuting.**

Variable	Knowledge of Active Commuting			Total	Df	X <sup>2</sup>	p-value
	Poor (0-3) N (%)	Fair(4-6) N (%)	Good(7-10) N(%)				
<b>LEVEL OF STUDY</b>							
100	16(26.2)	81(41.3)	51(31.3)	<b>148</b>	10	18.904***	0.041*
200	16(26.2)	36(18.4)	22(13.5)	<b>74</b>			
300	10(16.4)	25(12.8)	29(17.8)	<b>64</b>			
400	15(24.6)	30(15.3)	32(19.6)	<b>77</b>			
500	4(6.6)	21(10.7)	22(13.5)	<b>47</b>			
600	0(0)	3(1.5)	7(4.3)	<b>10</b>			
<b>TOTAL</b>	<b>61</b>	<b>196</b>	<b>163</b>	<b>420</b>			
<b>AGE</b>							
16-20	28(49.1)	109(59.2)	76(48.7)	<b>213</b>	4	9.065***	0.058
21-25	25(43.9)	73(39.7)	75(48.1)	<b>173</b>			
26 and above	4(7.0)	2(1.1)	5(3.2)	<b>11</b>			
<b>TOTAL</b>	<b>57</b>	<b>184</b>	<b>156</b>	<b>397</b>			
<b>Residential Hall</b>							
Mellaby	3(4.9)	12(6.1)	11(6.8)	<b>26</b>	18	41.865	0.001*
Tedder	4(6.6)	10(5.1)	12(7.4)	<b>26</b>			
Ransome kuti	6(9.8)	11(5.6)	13(8.0)	<b>30</b>			
Queen Elizabeth	5(8.2)	33(16.8)	17(10.4)	<b>55</b>			
Obafemi Awolowo	9(14.8)	37(18.9)	20(12.3)	<b>66</b>			
Independence	11(18)	18(9.2)	16(9.8)	<b>45</b>			
Sultan Bello	7(11.5)	8(4.1)	10(6.1)	<b>25</b>			
Nnamdi Azikwe	8(13.1)	27(13.8)	10(6.1)	<b>45</b>			
Alexander Brown	1(1.6)	6(3.1)	23(14.1)	<b>30</b>			
Queen Idia	7(11.5)	34(17.4)	31(19.0)	<b>72</b>			
<b>TOTAL</b>	<b>61</b>	<b>196</b>	<b>163</b>	<b>420</b>			

(\* means the p-value that is significant)(\*\*\* means fisher's exact was used in cross tabulating)

## 4.6.2 Test of Hypotheses

### Hypothesis 2

The null hypothesis stated that there would be no significant association between socio-demographic of the respondents and the Respondents perception of health benefit of active commuting.

In order to have a clear view of the association between variables, Fishers Exact was used to ascertain the true relationship of all been considered in the socio-demographic characteristic with the perception of active commuting among the undergraduate students

Of those that had unfavourable perception, 49.8% were male while 50.2% were female. 62.5% of those that had favourable perception were male while 37.5% were female. It shows that those male have more favourable perception than the female. The association between gender of the respondents and perception of active commuting was not significant as the p-value (0.317) is greater than 0.05. Hence we accept the null hypothesis. ( $X^2= 1.000$ ,  $df=1$ ,  $p\text{-value}=0.317$ )

The association between marital status of the respondents and perception of active commuting was not significant as the p-value (1.000) is greater than 0.05. Hence we accept the null hypothesis. ( $X^2= 0.040$ ,  $df=1$ ,  $p\text{-value}=1.000$ )

The association between ethnicity of the respondents and perception of active commuting was not significant as the p-value (0.663) is greater than 0.05. Hence we accept the null hypothesis. ( $X^2= 1.130$ ,  $df=4$ ,  $p\text{-value}=0.663$ )

The association between religion of the respondents and perception of active commuting was not significant as the p-value (1.000) is greater than 0.05. Hence we accept the null hypothesis. ( $X^2= 0.185$ ,  $df=2$ ,  $p\text{-value}=1.000$ )

The association between level of study of the respondents and perception of active commuting was not significant as the p-value (0.559) is greater than 0.05. Hence we accept the null hypothesis Therefore, there is no significant association between level of study and perception of the respondents. ( $X^2= 1.442$ ,  $df=5$ ,  $p\text{-value}=0.559$ )

The association between age of the respondents and perception of active commuting was not significant as the p-value (0.647) is greater than 0.05. Hence we accept the null hypothesis. ( $X^2=1.442$ ,  $df=4$ ,  $p\text{-value}=0.647$ )

The association between residential hall of the respondents and perception of active commuting was not significant as the p-value (0.288) is greater than 0.05. Hence we accept the null hypothesis. ( $X^2=8.089$ ,  $df=9$ ,  $p\text{-value}=0.288$ ).

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**Table 4.10a Association between socio demographic characteristics and perception of respondents towards active commuting.**

Socio-demographic Variable	Perception		Total	Df	X <sup>2</sup>	p-value
	Poor (0-5) N (%)	Good(6-11) N (%)				
<b>SEX</b>						
Male	202(49.8)	10(62.5)	212	1	1.000	0.317
female	204(50.2)	6(37.5)	211			
<b>Total</b>	<b>406</b>	<b>16</b>	<b>422</b>			
<b>MARITAL STATUS</b>						
Single	405(99.8)	16(100)	421	1	0.040***	1.000
Married	1(0.2)	0(0)	1			
<b>Total</b>	<b>406</b>	<b>16</b>	<b>422</b>			
<b>Ethnicity</b>						
Yoruba	331(81.7)	13(81.3)	344	4	1.130***	0.663
Igbo	42(10.4)	1(6.2)	43			
Housa	4(0.9)	0(0)	4			
Other	28(6.9)	2(12.5)	30			
<b>Total</b>	<b>405</b>	<b>16</b>	<b>421</b>			
<b>RELIGION</b>						
Christianity	340(83.7)	14(87.5)	354	2	0.185***	1.000
Islam	65(16.0)	2(12.5)	67			
Others	1(0.3)	0(0)	1			
<b>Total</b>	<b>406</b>	<b>16</b>	<b>422</b>			
<b>LEVEL OF STUDY</b>						
100	147(36.2)	3(18.8)	150	5	3.651***	0.559
200	69(17.0)	5(31.3)	74			
300	62(15.3)	3(18.8)	65			
400	73(18.0)	3(18.8)	76			
500	45(11.1)	2(12.4)	47			
600	10(2.4)	0(0)	10			
<b>Total</b>	<b>406</b>	<b>16</b>	<b>422</b>			
<b>AGE</b>						
16-20	208(54.5)	7(43.8)	215	4	1.442***	0.647
21-24	163(42.7)	9(56.2)	172			
25 and above	11(2.9)	0(0)	11			
<b>Total</b>	<b>382</b>	<b>16</b>	<b>398</b>			

(\* means the p-value that is significant)

(\*\*\* means fisher's exact was used in cross tabulating)

**Table 4.10b Association between socio demographic characteristics and perception of respondents towards active commuting.**

Socio-demographic Variable	Perception		Total	Df	X <sup>2</sup>	p-value
	Poor (0-5) N(%)	Good(6-11) N(%)				
<b>Monthly income</b>						
500-5000	59(15.4)	11(2.9)	70			
6000-10000	117(30.5)	13(3.4)	130			
12000-20000	114(29.8)	9(2.3)	123			
24000 and above	56(14.6)	4(1.0)	60			
<b>Total</b>	<b>346</b>	<b>37</b>				
<b>Residential Hall</b>						
Mellaby	25(6.2)	1(6.3)	26	9	8.089***	0.288
Tedder	24(5.9)	2(12.5)	26			
Ransome kuti	28(6.9)	2(12.5)	30			
Queen Elizabeth	54(13.3)	2(12.5)	56			
Obafemi Awolowo	62(15.3)	4(25)	66			
Independence	42(10.4)	3(18.8)	45			
Sultan Bello	24(5.9)	1(6.3)	25			
Nnamdi Azikwe	44(10.8)	1(6.3)	45			
Alexander Brown	30(7.4)	0	30			
Queen Idia	73(18.0)	0	73			
<b>Total</b>	<b>406</b>	<b>16</b>	422			

(\* means the p-value that is significant)

(\*\*\* means fisher's exact was used in cross tabulating)

### 4.6.3 Test of Hypotheses

#### Hypothesis 3

The null hypothesis states that there is no association between socio-demographic of the respondents and the Respondents attitude towards the health benefit of active commuting.

In order to have a clear view of the association between variables, Fishers Exact was used to ascertain the true relationship of all been considered in the socio-demographic characteristic with the perception of active commuting among the undergraduate students

Of those that had negative attitude, 50.9% were men while 49.1% were female. 66.7% of those that had good attitude were female while 33.3% were male. It shows that those female have better attitude than the Male. The association between gender of the respondents and attitude of active commuting was not significant as the p-value (0.182) is greater than 0.05. Hence we accept the null hypothesis ( $X^2= 1.778$ ,  $df=1$ ,  $p\text{-value}=0.182$ )

The association between marital status of the respondents and attitude of active commuting was not significant as the p-value (1.000) is greater than 0.05. Hence we accept the null hypothesis ( $X^2= 0.037$ ,  $df=1$ ,  $p\text{-value}=1.000$ )

Majority 81.5% of those that had negative attitude were Yoruba while 10.6% were Igbo and 6.9 were others. 86.7% of those that had positive attitude were Yoruba. Check table 4.6.2. The association between ethnicity of the respondents and attitude of active commuting was not significant as the p-value (0.341) is greater than 0.05. Hence we accept the null hypothesis. ( $X^2= 2.667$ ,  $df=4$ ,  $p\text{-value}=0.341$ )

Majority 84.0% of those that had negative attitude were Christian while 15.7% were Islam. 80% of those that had positive attitude were Christian while 20% were Islam. The association between religion of the respondents and attitude of active commuting was not significant as the p-value (0.727) is greater than 0.05. Hence we accept the null hypothesis ( $X^2= 0.231$ ,  $df=2$ ,  $p\text{-value}=0.727$ )

The association between level of study of the respondents and attitude of active commuting was not significant as the p-value (0.420) is greater than 0.05. Hence we accept the null hypothesis. ( $X^2= 4.344$ ,  $df=5$ ,  $p\text{-value}=0.420$ )

The association between age of the respondents and attitude of active commuting was not significant as the p-value (0.058) is greater than 0.05. Hence we accept the null hypothesis. ( $X^2= 9.065$ ,  $df=2$ ,  $p\text{-value}=0.058$ )

The association between residential hall of the respondents and attitude of active commuting was not significant as the p-value (0.531) is greater than 0.05. Hence we accept the null hypothesis ( $X^2= 10.634$ ,  $df=9$ ,  $p\text{-value}=0.531$ )



**Table 4.11a Association between socio demographic characteristics and attitude of respondents towards active commuting.**

Sociodemographic variable	Attitude towards active commuting		Total	Df	X <sup>2</sup>	p-value
	Negative (0-5) N (%)	Positive(6-11) N (%)				
<b>SEX</b>						
Male	207(50.9)	5(33.3)	212	1	1.778	0.182
Female	200(49.1)	10(66.7)	210			
<b>TOTAL</b>	<b>407</b>	<b>15</b>	<b>422</b>			
<b>MARITAL STATUS</b>						
Single	406(99.8)	15(100)	421	1	0.037***	1.000
Married	1(0.2)	0(0)	1			
<b>TOTAL</b>	<b>407</b>	<b>15</b>	<b>422</b>			
<b>Ethnicity</b>						
Yoruba	331(81.5)	13(86.7)	345	4	2.667***	0.341
Igbo	43(10.6)	0(0.0)	43			
Housa	4(1.0)	0(0)	4			
other	28(6.9)	2(13.3)	30			
<b>TOTAL</b>	<b>406</b>	<b>15</b>	<b>422</b>			
<b>RELIGION</b>						
Christianity	342(84.0)	12(80)	354	2	0.231***	0.727
Islam	64(15.7)	3(20)	67			
others	1(0.3)	0(0)	1			
<b>TOTAL</b>	<b>407</b>	<b>15</b>	<b>422</b>			
<b>LEVEL OF STUDY</b>						
100	143(35.1)	7(46.7)	150	5	4.344***	0.420

**Table 4.11b Association between socio demographic characteristics and attitude of respondents towards active commuting.**

Socio-demographic variable	Attitude towards active commuting		Total	Df	X <sup>2</sup>	p-value
	Negative (0-5) N (%)	Positive(6-11) N (%)				
<b>LEVEL OF STUDY</b>						
200	71(17.5)	3(20)	74			
300	64(15.7)	1(6.7)	65			
400	73(17.9)	3(20)	76			
500	47(11.6)	0(0)	47			
600	9(2.2)	1(6.7)	10			
<b>TOTAL</b>	<b>407</b>	<b>15</b>	<b>422</b>			
<b>AGE</b>						
16-20	196(49.2)	19(52.8)	215	2	9.065	0.058
21-24	142(35.7)	12(33.3)	154			
25 and above	24(6.0)	5(13.9)	29			
<b>TOTAL</b>	<b>362</b>	<b>36</b>	<b>398</b>			

(\* means the p-value that is significant)

(\*\*\* means fisher's exact was used in cross tabulating)

#### 4.6.4 Test for Hypothesis 4

##### Hypothesis 4

The null hypothesis states that there is no association between socio-demographic characteristics of the respondents and the means of transportation frequently used by respondents. Chi-square was used to test for the association and the result is presented on Table 4.12a, b and c.

In order to have a clear view of the association between variables, Fishers Exact was used to ascertain the true relationship of all been considered in the socio-demographic characteristic with the respondents most frequently in the last one month of the study.

The association between gender of the respondents and their most frequently used transport means from their residential hall to lecture room was significant as p-value (0.000) is less than 0.05. Hence we reject the null hypothesis. ( $X^2= 25.760$ ,  $df=8$ ,  $p\text{-value}=0.000$ )

The association between monthly income of the respondents and their most frequently used transport means from their residential hall to lecture room was not significant as the p-value (0.209) is greater than 0.05. Hence we accept the null hypothesis. ( $X^2= 29.310$ ,  $df=24$ ,  $p\text{-value}=0.209$ )

The association between ethnicity of the respondents and their most frequently used transport means from their residential hall to lecture room was not significant as the p-value (0.960) is greater than 0.05 Hence we accept the null hypothesis. ( $X^2= 13.467$ ,  $df=4$ ,  $p\text{-value}=0.960$ )

The association between level of study of the respondents and their most frequently used transport means from their residential hall to lecture room was significant as p-value (0.000) is less than 0.05. Hence we reject the null hypothesis. ( $X^2= 43.174$ ,  $df=40$ ,  $p\text{-value}=0.000$ )

The association between age of the respondents and their most frequently used transport means from their residential hall to lecture room was significant as p-value (0.039) is less than 0.05. Hence we reject the null hypothesis. ( $X^2= 45.865$ ,  $df=16$ ,  $p\text{-value}=0.039$ )

The association between Residential hall of the respondents and their most frequently used transport means from their residential hall to lecture room was significant as p-value (0.000) is less than 0.05. Hence we reject the null hypothesis. ( $X^2= 99.173$ ,  $df=72$ ,  $p\text{-value}=0.000$ )

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Table 4.12a Association between socio-demographic characteristics of the respondents and most frequently used means of transportation

<b>Sociodemo graphic variable</b>	<b>PBV N (%)</b>	<b>PRV N (%)</b>	<b>W N (%)</b>	<b>C N (%)</b>	<b>M N (%)</b>	<b>T (%)</b>	<b>N (%)</b>	<b>C-WMO N (%)</b>	<b>Total</b>	<b>Df</b>	<b>X<sup>2</sup></b>	<b>p- value</b>
<b>SEX</b>												
Male	22(37.9)	7(100)	142(55.3)	3(75)	5(35.7)	2(100)	28(40.6)	212	8	25.760***	0.000*	
Female	44(62.1)	0	115(44.8)	1(25)	9(64.3)	0	41(59.4)	211				
<b>TOTAL</b>	<b>66</b>	<b>7</b>	<b>257</b>	<b>4</b>	<b>14</b>	<b>2</b>	<b>69</b>	<b>423</b>				
<b>MONTHLY INCOME</b>												
500-5000	4(6.7)	0	50(21.8)	2(50.0)	2(14.3)	1(50.0)	11(16.9)	70	24	29.310***	0.209	
6000-10000	21(35)	2(28.6)	86(37.6)	1(25.0)	2(14.3)	0	17(26.2)	129				
12000-20000	25(41.7)	3(42.9)	60(26.2)	1(25.0)	6(42.9)	1(50.0)	26(40.0)	122				
≥24000	10(16.6)	2(28.6)	33(14.4)	0	4(28.5)	0	11(16.9)	60				
<b>TOTAL</b>	<b>60</b>	<b>7</b>	<b>229</b>	<b>4</b>	<b>14</b>	<b>2</b>	<b>65</b>	<b>381</b>				
<b>Ethnicity</b>												
Yoruba	52(78.8)	7(100)	210(82.0)	4(100)	13(92.9)	2(100)	54(78.3)	342	4	13.467***	0.960	
Igbo	9(13.6)	0	23(9.0)	0	1(7.1)	0	9(13.0)	42				
Housa	0	0	4(1.6)	0	0	0	0	4				
Other	5(7.6)	0	19(17.4)	0	0	0	6(8.7)	30				
<b>TOTAL</b>	<b>66</b>	<b>7</b>	<b>256</b>	<b>4</b>	<b>14</b>	<b>2</b>	<b>69</b>	<b>418</b>				
<b>LEVEL OF STUDY</b>												
100	18(27.3)	1(14.3)	104(40.5)	2(50)	3(21.4)	0	21(30.4)	149	40	43.174***	0.000*	
200	9(13.6)	2(28.6)	43(16.7)	1(25)	4(28.6)	2(100)	13(18.8)	74				
300	13(19.7)	0	35(13.6)	1(25)	2(14.3)	0	13(18.8)	64				
400	14(21.2)	1(14.3)	45(17.5)	0	1(7.1)	0	14(20.3)	75				
500	11(16.7)	3(42.8)	22(8.6)	0	4(28.6)	0	7(10.2)	47				
600	1(1.5)	0	8(3.1)	0	0	0	1(1.5)	10				
<b>TOTAL</b>	<b>66</b>	<b>7</b>	<b>257</b>	<b>4</b>	<b>14</b>	<b>2</b>	<b>69</b>	<b>419</b>				

Table 4.12b Association between socio-demographic characteristics of the respondents and most frequently used means of transportation

Sociodemographic variable	PBV N (%)	PRV N (%)	W N (%)	C N (%)	M N (%)	T N (%)	C-WMO N (%)	Total	Df	X <sup>2</sup>	p-value
<b>AGE</b>											
16-20	28(44.4)	2(33.3)	138(56.3)	2(100)	8(57.1)	0	35(55.6)	<b>216</b>	16	45.865***	0.039*
21-25	35(55.6)	4(66.6)	99(40.4)	0	6(42.9)	1(50)	27(42.9)	<b>172</b>			
26 and above	0	0	8(3.3)	0	0	1(50)	1(1.5)	<b>11</b>			
<b>TOTAL</b>	<b>63</b>	<b>6</b>	<b>245</b>	<b>2</b>	<b>14</b>	<b>2</b>	<b>63</b>	<b>399</b>			
<b>Residential Hall</b>											
Mellaby	1(1.5)	0	20(7.8)	1(25)	1(7.1)	1(50)	2(2.9)	<b>26</b>	72	99.173***	0.000*
Tedder	1(1.5)	2(28.6)	20(7.8)	0	0	0	2(2.9)	<b>25</b>			
Ransomekuti	2(3.0)	1(14.3)	20(7.8)	1(25)	1(7.1)	0	4(5.8)	<b>29</b>			
Queen Elizabeth	9(13.6)	0	38(14.8)	0	0	0	9(13.0)	<b>56</b>			
Obafemi Awolowo	19(28.8)	0	29(11.2)	0	2(14.3)	0	16(23.2)	<b>66</b>			
Independence	4(6.1)	1(14.3)	31(12.1)	0	1(7.1)	0	8(11.6)	<b>45</b>			
Sultan Bello	4(6.1)	0	15(5.8)	0	1(7.1)	1(50)	4(5.8)	<b>25</b>			
NnamdiAzikwe	9(13.6)	1(14.3)	24(9.3)	1(25)	1(7.1)	0	8(11.6)	<b>44</b>			
Alexander Brown	3(4.6)	2(28.6)	21(8.2)	0	0	0	4(5.8)	<b>30</b>			
Queen Idia	14(21)	0	39(15.2)	1(25)	7(50)	0	12(17.4)	<b>73</b>			
<b>Total</b>	<b>66</b>	<b>7</b>	<b>257</b>	<b>4</b>	<b>14</b>	<b>2</b>	<b>69</b>	<b>419</b>			

(\* means the p-value that is significant)(\*\*\* means fisher's exact was used in cross tabulating)

PBV-Public vehicle

PRV- Private vehicle

W- Walking

C- Cycling

M – Motor cycle(Okada)

T- Tricycle (KekeNapep)

C-WMO Combination of Walking, Moto cycle and Tricycle

#### 4.6.5 Test for Hypotheses

##### Hypothesis 5

The fifth hypothesis stated that there would be no significant association between knowledge of the respondents and the transport means used by respondents most frequently in the last one month of the study.

In order to have a clear view of the association between variables, Fishers Exact was used to ascertain the true relationship of all been considered in the respondent's Knowledge with the respondents most frequently in the last one month of the study.

The association between knowledge of the respondents and their most frequently used transport means from their residential hall to lecture room was significant as p-value (0.000) is less than 0.05. Hence we reject the null hypothesis. Therefore, there is a significant association between knowledge and most frequently used transport means of the respondents. ( $X^2= 45.229$ ,  $df=16$ ,  $p\text{-value}=0.000$ ).The research findings revealed clearly that the more knowledgeable the respondents, the more they engaged in active commuting. Despite majority had fair knowledge on the health benefit of active commuting, the findings shows that out of those that walk (active commuters), 42.8% had fair knowledge compeer to the 46.3% of those that had good knowledge and 11% had poor knowledge. Among those that used public vehicle or taxi (passive commuters), only 30.3% had good knowledge while the majority 47% had fair knowledge and 22.7% had poor knowledge. See table 4.13

**Table 4.13 Association between respondents' knowledge and most frequently used means of transportation.**

Variable	Transport means used most Frequently in the last one month							Total	Df	X <sup>2</sup>	p-value
	PBV N(%)	PRV N(%)	W N(%)	C N(%)	M N(%)	T N(%)	C-WMO N(%)				
<b>KNOWLEDGE</b>											
Poor(0-3)	15(22.7)	3(42.9)	28(11.0)	1(25.0)	1(7.1)	2(100)	11(16.4)	<b>61</b>	16	45.229***	0.000*
Fair(4-6)	31(47.0)	2(28.6)	109(42.8)	2(50.0)	12(85.7)	0	39(58.2)	<b>195</b>			
Good(7-10)	20(30.3)	2(28.6)	118(46.3)	1(25.0)	1(7.1)	0	17(25.4)	<b>159</b>			
<b>Total</b>	<b>66</b>	<b>7</b>	<b>255</b>	<b>4</b>	<b>14</b>	<b>2</b>	<b>67</b>	<b>415</b>			

(\* means the p-value that is significant)

(\*\*\* means fisher's exact was used in cross tabulating)

PBV-Public vehicle

PRV- Private vehicle

W- Walking

C- Cycling

M – Motor cycle (Okada)

T- Tricycle (Keke Napep)

C-WMO –(Combination of Walking, Moto cycle and Tricycle)



#### 4.5.6 Test for Hypotheses

##### Hypothesis 6

The null hypothesis states that there is no association between knowledge of respondents and level of commuting practices. Chi-square was used to test for the association and the result is presented below. Among active commuters, 42.9% had fair knowledge compare to 46% of those that had good knowledge and 11.2% had poor knowledge. Among passive commuters, only 25.8% had good knowledge compare to more than half of them (50.6%) that had fair and 23.6% had poor knowledge. This shows that knowledge is directly proportional to commuting practices as seen in the table 4.14. Increase in knowledge leads to increase in commuting practices.

**Table 4.14 Association between knowledge of respondents and level of commuting practices.**

Variable	Level of commuting			TOTAL	Df	X <sup>2</sup>	p-value
	Active commuters	Semi-active commuters	Passive commuters				
	N (%)	N (%)	N (%)				
Poor	29(11.2)	11(16.4)	21(23.6)	61	4	20.545	0.000*
Fair	111(42.9)	39(58.2)	45(50.6)	195			
Good	119(46)	17(25.4)	23(25.8)	159			
TOTAL	259	67	89	415			

(\* means the P-value is significant)

p- value is 0.000 which is less than 0.05. Therefore there is a significant association between knowledge of respondents and level of commuting practices. Hence we reject the null hypothesis.

#### 4.5.7 Test for Hypotheses

##### Hypothesis 7

The null hypothesis states that there is no association between perception of respondents and level of commuting practices. Chi-square was used to test for the association and the result is presented below.

In order to have a clear view of the association between variables, Fishers Exact was used to ascertain the true relationship of all been considered in the respondent's perception with the level of commuting practices.

**Table 4.15 Association between perception of respondents and level of commuting practices.**

Variable	Level of commuting			TOTAL	Df	X <sup>2</sup>	p-value
	Active commuters N (%)	Semi-active commuters N (%)	Passive commuters N (%)				
Unfavourable perception	253(97.3)	68(98.6)	81(91.0)	402	2	8.411***	0.027*
Favourable perception	7(2.7)	1(1.5)	8(9.0)	16			
<b>TOTAL</b>	<b>260</b>	<b>69</b>	<b>89</b>	<b>418</b>			

(\* means the P-value is significant) (\*\*\*) means Fisher exact was used in cross tabulating)

p- value is 0.027 which is less than 0.05. Therefore there is a significant association between perception of respondents and level of commuting practices. Hence we reject the null hypothesis.

#### 4.5.8 Test for Hypotheses

##### Hypothesis 8

The null hypothesis states that there is no association between attitude of respondents and level of commuting practices. Chi-square was used to test for the association and the result is presented below.

In order to have a clear view of the association between variables, Fishers Exact was used to ascertain the true relationship of all been considered in the respondent's attitude with the level of commuting practices.

**Table 4.16 Association between attitude of respondents and level of commuting practices.**

Variable	Level of commuting			TOTAL	Df	X <sup>2</sup>	p-value
	Active commuters N (%)	Semi-active commuters N (%)	Passive commuters N (%)				
Negative Attitude	255(98.1)	66(95.7)	82(92.1)	403	2	6.904***	0.023*
Positive Attitude	5(1.9)	3(4.4)	7(7.9)	15			
<b>TOTAL</b>	<b>260</b>	<b>69</b>	<b>89</b>	<b>418</b>			

(\* means the P-value is significant) (\*\*\*) means Fisher exact was used in crosstabulating

p- value is 0.023 which is less than 0.05. Therefore there is a significant association between attitude of respondents and level of commuting practices. Hence we reject the null hypothesis.

## 4.5.9 Test of Hypotheses

### Hypothesis 9

The null hypothesis states that there is no association between sex of respondents and level of commuting practices. Chi-square was used to test for the association. Logistic regression analysis between sex and level of active commuting practices was also used for measuring the magnitude of the relationship. Level of practice here was categorized into two for (two by two table computation) where those that frequently used cycling and walking as means of transport were categorized as active while those that used other means aside walking and cycling were considered passive. The result is presented below.

Table 4.17 Association between sex and active commuting practices using (logistic regression and chi-square analysis)

Variable	Active	Passive	Total	Odds ratio	95%CI	Df	X <sup>2</sup>	p-value
Sex Male*	145(55.6)	64(40.5)	<b>209</b>	0.545	0.365-0.813	1	8.916	0.003
female	116(44.4)	94(59.5)	<b>210</b>					
<b>Total</b>	<b>261</b>	<b>158</b>	<b>419</b>					

\*Reference category

P -value is 0.003 which is less than 0.05. Therefore there is a significant association between sex of respondents and level of commuting practices. Hence we reject the null hypothesis. The result also shows that males are 0.55 times more likely to commute actively than the female.

## CHAPTER FIVE

### DISCUSSION, RECOMMENDATION AND CONCLUSION

#### 5.1 Discussion

The research came up as a result of increase in the burden of NCDs especially among adolescent and young adults which have been linked to sedentary life style; literatures also reveals that NCDs is now more common among adolescents and young adults such as diabetics, cancer, obesity and other related disease. History of the campus used for the study (university of Ibadan) also reveal that; the school in conjunction with Diamond FM University of Ibadan had one time embarked on a programme tagged 'Ride a bicycle' which was not sustained due to improper maintenance of the bicycles released to run the programme. These reasons made this study looked into student's knowledge, perception, attitude and practice of active commuting within the campus particularly the undergraduate student that fall within adolescent and young adult stage of life.

The ages of respondents ranges from 16 – 32 years of age, which is in line with the study conducted by Anidodo, et al 2014, with a mean age of  $20.51 \pm 2.572$ . Majority of the respondents were within the range of 16-20. The respondents were male and female at equal number. Most of the respondents were single about 423 while one of the respondents was married. Majority of the respondent were Christian i.e they are about 84%, while 15.8% were Islam and 0.2 were traditional.

Majority (81.6%) of the respondents were Yoruba which could be due to the geographical location of the sample site (southwestern part of the country-a Yoruba dominated area). 10.1% of the respondents were Igbo while 0.9% were Hausa, others which consist of (Urobo, Tiv, Edo, Ijaw, Ogoni, Egun, delta).

Quite a few (35.6%) of the respondents were from 100L followed by respondent at 400level class which is 11%. The high percentage of respondents in 100level can be reason to the fact that they are still fresh in the campus which will in turn make them to reside in campus.

73%, 67%, 57% and 3.55% of the respondents which are Female reside in Queen Idia Hall, Obafemi Awolowo Hall, Queen Elizabeth hall and Alexander Brown Hall respectively. While the

Male respondents resides in Mellaby 6.1%, Tedder 6.1%, RansomeKuti 7.1%, Independence 10.6%, Sultan Bello 5.9%, NnamdiAzikwe, 10.6%, Alexader brown 3.55%.

34.1% of the respondent earn an income that falls between #6000 - #10000, 32% of the respondents earn an income that ranges between #12000-#20000, 18.2% earn between #500-5000 while 15.6% earn 24000 and above.

### **5.1.1 Knowledge of respondents on the health benefit of active commuting**

Majority of the respondent had fair knowledge of what active commuting is all about with a mean score of  $5.85 \pm 2.174$ . Result shows that majority (46.7%) of the respondents had fair knowledge of health benefits of active commuting while 38.8% had good knowledge and only 14.5% had poor knowledge. 62.5% was able to define active commuting as a form of physical activity programmes and 73.6% was able to define active commuting as involving working and cycling as a means of transport. 53.1% was able to give the correct benefit of active commuting by responding that 'Time consuming' not part of the benefit of active commuting. 44.8% was able to ascertain the risk associated with active commuting. 39.2% were able to ascertain the correct protective equipment to be used during active commuting.

Out of those that had poor knowledge, 63.9% were male while 36.1% were female. 46.4% of those that had fair knowledge were male while 53.6% were female, out of those that had good knowledge, 50.3% were male while 49.7% were female. This shows that female had more knowledge of the health benefit of active commuting than the male but statistically there was no association between gender and Knowledge.

There is no significant association between (marital status, ethnicity, religion, age) and Knowledge of the respondents in the findings of this study.

The result of the study reveals that there is a significant association between level of study and Knowledge of the respondents.

The result of the study also shows that there is a significant association between residential Hall and Knowledge of the respondents. These differences may be due to health awareness that might have been carried out by favored Hall of residence i.e hall with good knowledge score.

Alexander hall is a hall that is occupied with Medical students who must have been exposed to health benefit of active commuting. This must have been one of the reasons while they had better knowledge score

The findings of this study also revealed that knowledge is significantly associated with level of practice. The association between knowledge of the respondents and their most frequently used transport means from their residential hall to lecture room was significant. The research findings revealed clearly that the more knowledgeable the respondents, the more they engaged in active commuting. Despite majority had fair knowledge on the health benefit of active commuting, the findings shows that out of those that walk (active commuters), 42.8% had fair knowledge compeer to the 46.3% of those that had good knowledge and 11% had poor knowledge. Among those that used public vehicle or taxi (passive commuters), only 30.3% had good knowledge while the majority 47% had fair knowledge and 22.7% had poor knowledge. Increase in knowledge leads to increase in commuting practices.

### **5.1.2 Perception of the respondents**

The findings of the study reveal that Respondent's perception towards active commuting is generally unfavourable with a mean score of  $2.15 \pm 1.712$ . Majority (96.2%) had Unfavourable perception about active commuting while only 3.8% had Favourable perception about active commuting. Male had more favourable perception than Female as none of the respondents in queen idia (the hall with highest number female respondents) and Alexander Brown was found to have favourable perception. It is not a doubt that this unfavorable perception will affect the respondent's attitude which will in turn affect their practices. This can be linked to the study conducted by De souza, Sanches, and Ferreira,(2014) who concluded that a negative attitude is associated with the perception of strong barriers. Statistical Analysis reveals that there is no significant association between gender and perception of the respondents.

Only 32.9% agree that an individual who engages in active commuting will live longer than people who do not participate in active commuting. Only 44% disagree that Engaging in active commuting could easily make one get tired. 65.7% was able to agree that a person who often participates in active commuting is always active in thinking. 10.6% disagree that Unmarried

young girls should not participate in active commuting. To the favour of the respondents 82.7% agree that frequent participation in active commuting makes one look healthy. Unfavourable to the respondents, 85.8% agree that It is against their cultural belief to engage in active commuting every day.

The respondents' had favourable healthy perception on active commuting as 69.5% of the respondents agree that Active commuting can be used to manage illness like diabetes or obesity, 59.3% agree that Participating in active commuting makes one happy while majority of the respondents 84.9% agree that Participating in physical activity programme increases blood circulation

There is no significant association between (marital status, ethnicity, age, religion, level of study, residential hall) and perception of the respondents.

There was an association between perception and level active commuting practice.

### **5.1.3 Attitude of respondents**

Majority of the respondent had a negative attitude with a mean score of  $1.78 \pm 1.6$ , 96.4% had negative attitude towards active commuting. While only 3.6% have Positive attitude towards active commuting. This does not agree with Omolayo et al, 2013 whose findings revealed that adolescent-aged students demonstrate favourable attitude towards physical activity like that of adult-aged students. The findings of this study agree with the findings of Anidodo, 2014 whose hypothesis of no significant difference between the male and female students with regard to their attitudes towards physical activities was accepted.

On the positive side of the respondents, majority (90.1%) would participate in active commuting even if they have the money to board taxi to school. 75.2% enjoy cycling and walking from their place of residence to school, 67.6% are fascinated by the site of active commuters, 31.7% like reading materials on active commuting, 61.7% were comfortable discussing active commuting with their friends and siblings, 74.2% like associating with people that do participate in physical activity programmes



On the negative side of the respondents, only 8% of the respondents encourage active commuting as an activity while 82% will discourage it. 7.1% sees active commuting as not dangerous for them to participate whereas, majority of the respondents 84.2% sees it as dangerous for them to participate. 78.7% are frightened by people who cycle which could be the reason for most of their poor attitude towards active commuting 82.7% hate engaging in active commuting and 65.1% get tired easily whenever they engage in active commuting

None of the socio-demographic characteristics was found to be statistically significant with the respondents' attitude towards active commuting.

The findings of this study revealed that there is an association between attitude of the respondents and level of practice

#### **5.1.4 Practice of respondents on the health benefit of active commuting**

This study shows that 61.7% of the respondents in this study were active commuters, 17% were semi active commuters while 21.3% were passive commuters.

This study reveals that the respondents were active in terms of commuting practices. This does not agree with similar study conducted by Adeniyi et al where most of the respondents surveyed are passive commuters. These may be as a result of differences in the socio-demographic characteristic of the study population. Adeniyi et al used secondary school student and the respondent were residing outside the school. Respondents surveyed in this study had advantage of the fact that the residential halls were not far from their lecture room such as less than 1km and they were undergraduate students.

Majority (59.7%) of those that reported they use walking or cycling or combination (of walking, Motor vehicle/ okada etc) as the most frequent transportation means was found to use this because of short distance between residence and lecture room. 12.3% used it because of Long distance between residence and lecture room.

This study reveals that there is an association between socio-demographics characteristics (such as gender, level of study, age, and residential Hall), and active commuting practices which agree

with Adeniyi et al. 2011 that concluded that Commuting habits were significantly ( $p < 0.05$ ) associated with socio-demographic characteristics. (Adeniyi et al. 2011)

Among respondents that walk, 55.3% were Male while 44.8% were female. Out of those that cycle, 75% were male while 25% were female. Measuring the magnitude of the relationship between sex and level of active commuting practices using Logistic regression analysis shows Male is 0.55 times more likely to commute actively than the female. This is in line with (Adeniyi et al. 2011) whose study reveals that the proportions of students who were actively commuting were observed to be higher among older adolescents, and male students. (Adeniyi et al. 2011)

This study found out that, there was no association between respondent's monthly income and level of practices of active commuting. Though this findings has not contradict the fact that "82.7% perceived active commuting among student is a sign of poverty", it had only show that most of the respondents walk to school because residential halls were not far from their various lecture room.

The findings in this study show that, there is no association between respondent's ethnicity and level of practices of active commuting.

This study revealed that among respondents that walk from their residential hall to their lecture room, 40.5% were from 100level compeer to 16.7% in 200level and 13.6% in 300level.

Respondents that reside in Obafemi Awolowo hall (hall with one of the largest percentage of respondent sampled) who engage in walking were 29(11.2%) compeer to 20(7.8%) among respondent that walk Mellaby and Tedder hall (hall with smallest percentage of respondent sampled). This difference could be traced to the fact that the distance of Obafemi Awolowo to school lecture rooms is farer than Mellaby and tedder hall. This reveals that majority of respondents that commute actively within the campus engage in this because of the short distance from their residential hall to school.

Respondents that falls between the age of 16-20 commute actively more than respondent that fall within the range of 21-25 years of age i.e 56.3% of respondents within the age range of 16-21 walk compeer to 40.4% of respondents within the age range of 21-25. The only two respondents

that cycle from residential hall to lecture room frequently were within the age range of 16-20. This is in line with Adeniyi et al

The study also reveals that 59.7% of those that reported they use walking or cycling or combination (of walking, Motor vehicle/ okada etc) as the most frequent transportation means was found to use this because of short distance between residence and lecture room. While only 12.3% used walking or cycling or combination (of walking, Motor vehicle/ okada etc) not minding weather the distance is long or not. Which means that majority chose to walk because the distance between hostels to school is less than 1km. this is also in line with the findings of Nelson et al, 2008 who concluded that distance is an important perceived barrier to active commuting and a predictor of mode choice among adolescence.

The study also found out that 51.2% used walking and cycling frequently as a means of transportation for the purpose of exercise and good health which means that, the respondents on the average have good knowledge of the health implication of active commuting.

14.4% used in order to get to school faster, 7.78% used it because of unfavourable wealther condition, 14.4% used it because their friend uses it, 20.8% used it to avoid bus-stop delays. 9% used it because of the traffic conditions on the roads, 10.4% used it because of Lack of access to other means, 18.2% used it because of Lack of transport fare, 2.8% used it because their parent made them to use it.

The finding of this study agree with the findings of Tudor-Locke et al, 2002, Roberts (1996) which revealed that Childhood commuting patterns have been believed to be carrying over into adult life in most time. Out of 56.8% that reported they have participated in cycling before such as during childhood or while growing up, only 18% could still retain the cycling skills to adult life. This reduction in adoption of good childhood practices can be linked to their inadequate knowledge of the benefit of active commuting, poor perception and poor attitude as well as inadequate social amenities that could encourage active commuting as seen in the findings. In support of this view, evidence suggests that inactive behaviours adopted in childhood is more pronounced better than the active behaviours through transitions from adolescent to adulthood (Raitakari *et al.* 1994).Tudor-Locke et al, 2002 gave this reasons for apparent decrease in

childhood commuting practices increased car ownership, community planning changes that favour motorized vehicles over pedestrians and increased concerns for children's personal safety

## **5.2 Implications of findings for Health Promotion and Education**

Findings from this study have health promotion and education implications and thereby the need for Planning, and implementation of multiple health strategies that will help to tackle the inherent problems in this findings. Health education is the part of health care that is concerned with promoting healthy behavior. Health education is therefore any planned combination of learning experiences designed to predispose, enable and reinforce voluntary behavior conducive to health in individuals, groups or communities. Health education principles and strategies can be used to address the challenges identified in the study. The findings of this study have suggested strong need for developing appropriate interventions that should focus on the following:

### **5.2.1 Health education and public enlightenment**

There is need for more awareness on the health benefit of active commuting, which will boost students knowledge on the health benefit of active commuting which will in turn change students perception and misconception on the active commuting to a more favourable one. Training on how to avoid sedentary lifestyle should be introduced in our campus and other youth social gathering as this will reduce the burden of NCDs especially among adolescent and young adult.

**Public enlightenment programs** such as; Tv shows, radio stations, Drama, news paper adverts, and social medial should take spreading information on the health benefit and the need to practice active commuting to the general populace as a responsibility in tackling the burden of NCDs as the society lives an healthy life style.

#### **Advocacy**

Government and lawmakers should look into the school health policy to effect and enforce policy that will favour active commuting especially in our campus. School authority in collaboration with governments should provide social amenities that will encourage active commuting such as walkway within the campus, roadside walk, cycling path, provisions of security within the campus that will bring about a peaceful active commuting within the campus

## **Multiple strategies**

School authority should create a body such as bicycle club, in various campuses that bring student together. This body or an association of student can look into; provision, maintenance and training of riding bicycle. Bicycle provided can be rented out to student on daily basis for cycling within the campus.

Department such as physical health education is also a good resource that the school authority can tap into that can look into the sustainability of physical activity programmes such as active commuting.

The school authority can as well collaborate with non-governmental organization that are into physical activity programmes in relation NCDs for partial or total funding amenities that will encourage physical activity programmes such as active commuting

## **5.3 Recommendations**

1. It is recommended that school authority should form school health policy that will favour active commuting within the campus
2. School authority should provide social amenities that will encourage active commuting.
3. School authority and lawmakers should look into the school health policy to effect and enforce policy that will favour active commuting especially in our campus
4. School authority should give rooms for creating social clubs among students such as bicycle club that can encourage active commuting practices in the campus.
5. Tanning, enlightenment programmes should be provided in various campus to boost student knowledge on the health benefit of active commuting.

## **5.4 Conclusions**

Physical inactivity is a global pandemic and active commuting is a strategy with the potential to increase the physical activity patterns of adolescents and young adult populations. Sequel to the findings of this study, the following conclusions can be drawn

The undergraduate students of University of Ibadan possessed fair knowledge, unfavorable perception, and negative attitude of the health benefit of active commuting. Active commuting

practice of undergraduate students of University of Ibadan is considerably high as a result of the nearness of the school residential hall to lecture rooms.

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## APPENDIX 1

### INFORMED CONSENT FORM

IRB number:

This approval will elapse on:

**Title of research:** Knowledge, Perception, Attitude and Level of Practice of Active Commuting within Campus among Undergraduate Students of the University of Ibadan

**Name of researcher:** This study is being conducted by **Adekeye John Toba** of the department of Health Promotion and Education, University of Ibadan.

**Purpose of research:** the purpose of the research is to assess the level of knowledge of students of University of Ibadan about the health benefit of active commuting; it would determine their perception and describe their attitude towards active commuting within the campus as well as assess their level of active commuting practices within the campus.

The outcome of this research will serve as an input to broaden the knowledge of the society on the Health benefit of Active commuting within their community. The outcome will also give the society a good perception about active commuting. Furthermore, the research also aims at stimulating people to embrace the attitude of active commuting which will in turn increase the level of its practice within their community. In addition, the research aim at sensitizing government in the need to formulate policy and laws and as well provide infrastructure that will encourage active commuting within various institutions.

**Procedure of the research:** four hundred and twenty four (424) would be recruited for the quantitative research which will involve administration of questionnaire.

**Expected duration of the research and of participant(s)' involvement:** This study is supposed to last for 4 weeks. Questionnaire will take between 10minutes to 15minutes for your time to complete.

**Risk(s):** There are no risks involved in students participating in the study.

**Costs to participants, if any, of joining the research:** Your participation in this research will not cost you anything.

**Benefits:** You would be educated on some health benefits of active commuting in terms of good knowledge, and right attitude towards it practices. At the end of the research, findings would be published for your consumption and the general public.

**Confidentiality:** All information collected in this study will be given coded numbers and there will be no use of names. This cannot be linked to you in any way and your name or any identifier will not be used in any publication or reports from this study.

**Voluntariness:** Your participation in this research is entirely voluntary.

**Consequences of participants' decision to withdraw from research and procedure for orderly termination of participation:** You can also choose to withdraw from the research at anytime. Please note that some of the information that has been obtained about you before you chose to withdraw may have been modified or used in reports and publications. These cannot be removed anymore. However, the researchers promise to make effort in good faith to comply with your wishes as much as is practicable.

**Statement of person obtaining parental informed consent:**

I have fully explained this research to \_\_\_\_\_ and have given sufficient information including benefits, to make an informed decision.

DATE: \_\_\_\_\_ SIGNATURE: \_\_\_\_\_

NAME: \_\_\_\_\_

**Statement of person giving consent:**

I have read the description of the research or have had it translated into a language I understand. I have also discussed with the researcher to my satisfaction. I understand that my participation is voluntary. I know enough about the purpose, methods, risks and benefits of the research study to judge that I want to take part in it. I understand that I may freely stop being part of this study at any time. I have received a copy of this consent form and additional information sheet to keep for myself.

DATE: \_\_\_\_\_ SIGNATURE: \_\_\_\_\_

NAME: \_\_\_\_\_

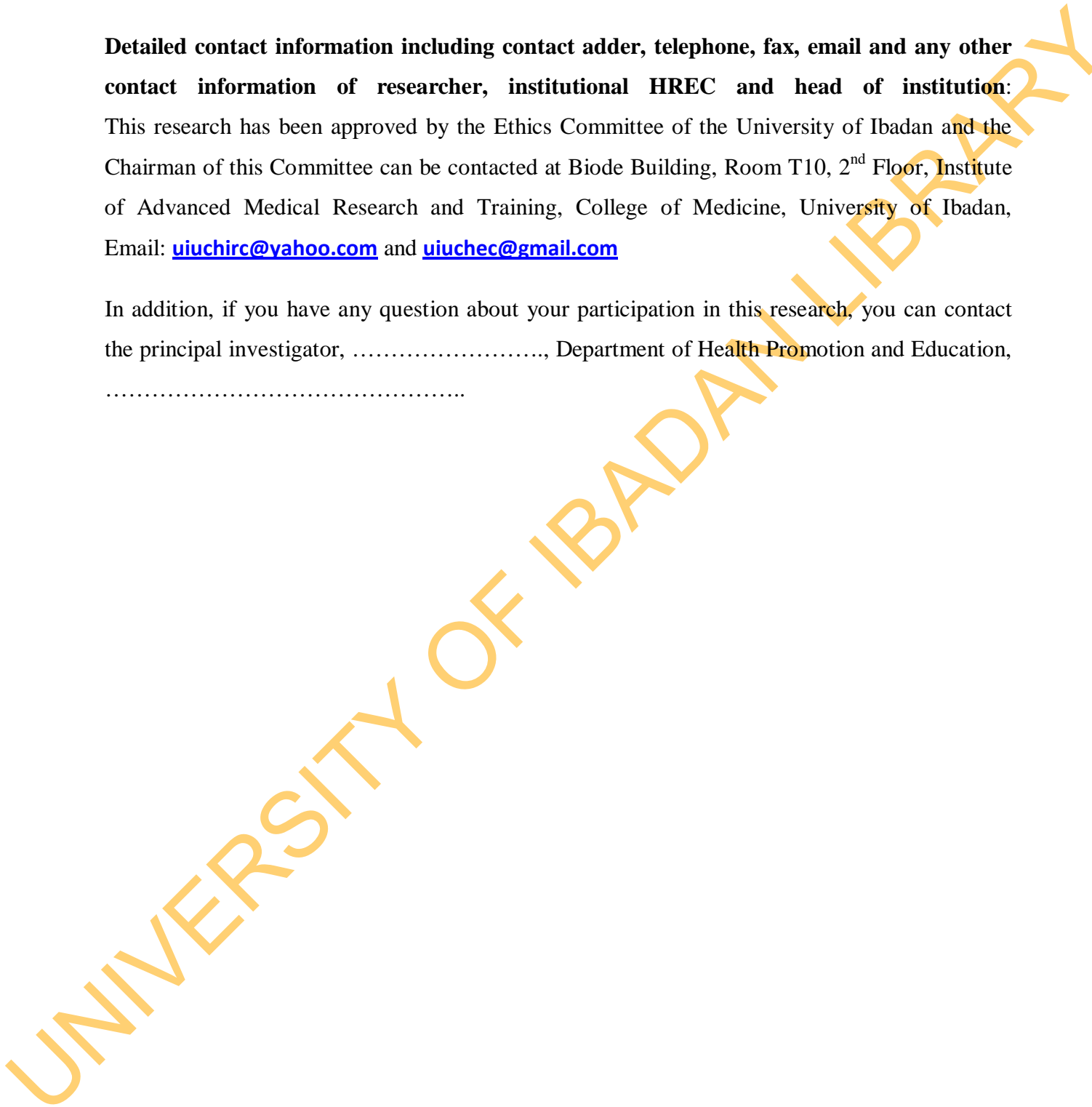
WITNESS' SIGNATURE (if applicable)\_\_\_\_\_

WITNESS' NAME (if applicable)\_\_\_\_\_

**Detailed contact information including contact address, telephone, fax, email and any other contact information of researcher, institutional HREC and head of institution:**

This research has been approved by the Ethics Committee of the University of Ibadan and the Chairman of this Committee can be contacted at Biode Building, Room T10, 2<sup>nd</sup> Floor, Institute of Advanced Medical Research and Training, College of Medicine, University of Ibadan, Email: [uiuchirc@yahoo.com](mailto:uiuchirc@yahoo.com) and [uiuchec@gmail.com](mailto:uiuchec@gmail.com)

In addition, if you have any question about your participation in this research, you can contact the principal investigator, ....., Department of Health Promotion and Education, .....



APPENDIX 11

QUESTIONNAIRE

Dear Respondent,

Greetings, My name is ADEKEYE, John Toba a masters student in the Department of Health Promotion and Education, Faculty of Public Health, University of Ibadan. I am currently conducting a research project titled Knowledge, Perception, Attitude and Practice of Active Commuting within Campus among Undergraduate Students of the University of Ibadan, as part of requirement for award of the degree. I intend to gather information from you on the topic and will be very grateful if you can spare some minutes to participate in the study by completing the questionnaire. Active commuting means walking and cycling as a means of transporting, leisure, and exercise which can provide substantial net health benefits, irrespective of geographical context(Natalie Mueller et al, 2015)

No name is required and confidentiality of your identity, response and opinion will be ensured. You are requested to please provide honest responses as much as possible as you complete the questionnaire. Please kindly tick the box below to indicate your willingness of participation

S/N.....

SECTION A: SOCIO DEMOGRAPHIC DATA

Note: please tick {√} the appropriate responses

- 1. Gender: 1. Male [ ] 2. Female [ ]
- 2. Age in years (at last birthday) -----
- 3. Department/Faculty:-----
- 4. Level of study:-----
- 5. Residential Hall address-----
- 6. Monthly income from all sources (in naira)-----
- 7. Marital status: 1. Single [ ] 2. Married [ ] 3. Cohabiting 4. [ ]Others (specify) -----
- 8. Religion: 1. Christianity [ ] 2. Islam [ ] 3. Traditionalist [ ] 4. Others (specify) -----

9. **Ethnicity:** 1. Yoruba  2. Igbo  3. Hausa  4.  others-----

## SECTION B: KNOWLEDGE ABOUT ACTIVE COMMUTING

10. Are you familiar with the word active commuting? YES  NO

**Instruction: Question 11 and 13 is a multiple choice question, you can therefore tick  more option by ticking the boxes as appropriate answers**

11. The following are correct about active commuting; (1) it is a form of physical activity programmes  (2) it involves the use of drugs to make one healthy  (3) it involves walking and cycling as a means of transport  (4) it makes one add weight  (5) it involves watching television programme at one's leisure
12. Can you mention the types of active commuting you know? YES  NO
13. Which of the following is/are not an example of active commuting (1). Swimming  (2). Walking  (3). Dancing  (4). Traveling by car  (5) Cycling  (6) traveling by air
14. Does active commuting have any benefit? YES  NO

**Instruction: Please tick  only one answer out of the option for each question 15 to 17**

15. The benefits of active commuting include the following except; (1). Healthy Living  (2). Reduce cost of Transportation  (3). Time consuming  (4). Environmental Friendliness  (5). a form of physical exercise  (6). Mental alertness
16. The following are some of the risks associated with Active commuting except (1). Road accident  (2). Risk of inhaling particles  (3). Risk of theft  (4). Electrocutation  (5). Insecurity
17. Which of these is not protective equipment that should be used during active commuting? (1). Face Mask/Nose cover  (2). Head helmet  (3). Knee guard  (4). Chest guard  (5). Sun glass  (6). Face cap  (7). None of the above

## SECTION C: PERCEPTION ABOUT ACTIVE COMMUTING

**Instruction:** The table below contains a set of statements/questions to assess your perception on active commuting. Please tick [√]the most applicable answer

S/N	Statements	Agree	Undecided	Disagree
18	An individual who engages in active commuting will live longer than people who do not participate in active commuting.			
19	Engaging in active commuting could easily make one get tired			
20	A person who often participates in active commuting is always active in thinking.			
21	Active commuting is for everybody.			
22	Unmarried young girls should not participate in active commuting			
23	Frequent participation in active commuting makes one look healthy.			
24	It is a sign of poverty for student to engage in active commuting			
25	It is against my cultural belief to engage in active commuting every day			
26	Active commuting can be used to manage illness like diabetes or obesity.			
27	Participating in active commuting makes one happy			
28	Participating in physical activity programme increases blood circulation.			

## SECTION D: ATTITUDE TOWARDS ACTIVE COMMUTING

S/N	Statements	Agree	Undecided	Disagree
29	I can participate in active commuting even if I have the money to board taxi to school			
30	Active commuting is not an activity I will encourage			
31	Active commuting is too dangerous for me to participate			
32	I enjoy cycling and walking from my place of residence to school			
33	I am fascinated by the site of active commuters			
34	People who cycle frighten me			
35	I hate engaging in active commuting.			
36	I like reading materials on active commuting.			
37	I am comfortable discussing active commuting with my friends and siblings.			

38	I like associating with people that do participate in physical activity programmes			
39	I don't like engaging in active commuting because I get tired easily			

## SECTION E: ACTIVE COMMUTING PRACTICES

**Instruction:** Please tick [] as many as you feel is/are applicable to you in question 40

40. By what Transport means have you ever get to your Lecture room in the last one month? (1) Public Vehicle (2)  Private vehicle (3) Walking (4) Cycling (5) By Motorcycle (Okada) (6) Tricycle (Keke NAPEP) (7) Combination (of walking, motor vehicle/okada etc) (8) Others? (Please specify) \_\_\_\_\_

41. Which mode of transportation did you use most frequently in the last one month? (**Tick only one option; the most frequently used**) (1) Public Vehicle (2)  Private vehicle (3) Walking (4) Cycling (5) By Motorcycle (Okada) (6) Tricycle (Keke NAPEP) (7) Combination (of walking, motor vehicle/okada etc) (8) Others? (Please specify) \_\_\_\_\_

42. How frequently did you use the transportation option chosen in 41 above to get to lecture room in the past one month?

(1) 5 days a week  (2) 4 days a week  (3) 3 days a week and below

43. If your most frequent mode of transportation was either walking or cycling, why did you opt for any of these modes of transportation? (Tick all relevant reasons)

- |  |  |
|--|--|
| (1) Short distance between residence and lecture room <input type="checkbox"/> | (8) Lack of access to other means <input type="checkbox"/> |
| (2) Long distance between residence and lecture room <input type="checkbox"/>  | (9) Lack of transport fare <input type="checkbox"/>        |
| (3) In order to get to school faster <input type="checkbox"/>                  | (10) My parents make me use it <input type="checkbox"/>    |
| (4) Unfavourable weather conditions <input type="checkbox"/>                   | (11) For exercise and good health <input type="checkbox"/> |
| (5) Because my friends use it <input type="checkbox"/>                         | (12) I don't know <input type="checkbox"/>                 |
| (6) To avoid bus-stop delays <input type="checkbox"/>                          | (13) Others? (please specify) <input type="checkbox"/>     |
| (7) Unsafe traffic conditions on the roads <input type="checkbox"/>            |  |

44. If your most frequent mode of transportation was any other than walking or cycling, why did you not consider walking or cycling? (Tick all relevant reasons)

- |  |  |
|--|--|
| (1) Short distance between residence and lecture room <input type="checkbox"/> | (8) High crime rate in the street <input type="checkbox"/> |
| (2) Long distance between residence and lecture room <input type="checkbox"/>  | (9) Lack of access to other means <input type="checkbox"/> |
| (3) In order to get to lecture room faster <input type="checkbox"/>            | (10) Lack of road sidewalks <input type="checkbox"/>       |
| (4) Unfavourable weather conditions <input type="checkbox"/>                   | (11) Lack of cycling skills <input type="checkbox"/>       |
| (5) School bus/taxi policy <input type="checkbox"/>                            | (12) My parents make me use it <input type="checkbox"/>    |
| (6) Because my friends use it <input type="checkbox"/>                         | (13) I don't know <input type="checkbox"/>                 |



(7) Unsafe traffic conditions on the roads

(14) Others? (please specify)

45. If by Trekking, How many minutes on the average will take you to walk from your hall of residence to your lecture room? \_\_\_\_\_

46. If by Taxi/Motorcycle/tricycle, how much on the average does it cost to get to your Lecture room from your hall of residence? \_\_\_\_\_

**Instruction:** The table below contains a set of statements/questions to assess your active commuting practices. Please tick [√] the most applicable answer

S/N	Statements	YES	NO	Don't Know
47	Have you ever participated in active commuting before?			
48	Do you participate in physical activity programmes such as active commuting every day?			
49	Do you commute actively only during your leisure time?			
50	Do you commute actively with team or individually?			
51	Do you walk or cycle with partners?			
52	Do you make new friends whenever you are walking or cycling?			
53	Do you always feel happy each time you participate in active commuting?			
54	Did your friends, lecturer and school authority encourage active commuting?			
55	Did your cultural belief encourage active commuting?			
56	Did your Parent encourage active commuting?			
57	The friends you make during active commuting, do they add values to your life?			
58	Have you participated in cycling in the past i.e during childhood or while growing up?			
S/N	Statements	Always	Sometimes	Never
59	Do you still engage in cycling as a form of active commuting?			
60	Do you ride bicycle from residential hall to your lecture room every day?			