



COLLEGE OF MEDICINE

**Assessing Uptake and Utilization of Modern Contraceptive Method Amongst
Young People in Tertiary Institutions of Lilongwe University of Agriculture
and Natural Resources (LUANAR) and Kamuzu College of Nursing (KCN)
in Lilongwe**

By

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**A Dissertation Submitted in Partial Fulfilment of the Requirements of the
Master of Science in Global Health Implementation Degree**

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Certificate of Approval

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Declaration

I, Yewo Kayira, hereby declare that the work on which this thesis is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for the award of another degree in this or any other university.

I hereby authorize the university to reproduce this work for the purpose of research either the whole or any portion of the contents in any manner whatsoever. This dissertation was also reviewed and approved by the College of Medicine Ethics and Review Committee (Reference number P.0918/2476).

Signature : _____

Date : _____

Dedication

This report is dedicated to my late Father (Mr. WM Kayira - BODMAS) who inspired me so much with his wisdom, advise and care that has made me reach this far.

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Abstract

Introduction: Modern contraceptive uptake and utilization still remains a significant global health issue among young people. Despite a number of interventions on modern contraceptive services targeting young people in primary and out of schools, evidence on Modern contraceptive use in tertiary institutions is limited. Hence, an assessment on uptake and utilisation of modern contraceptives among tertiary institutions of LUANAR and KCN was carried out in Lilongwe between 2017 and 2019.

Methods: A cross sectional exploratory study which used a mixed methods approach to assess uptake and utilisation of modern contraceptive methods among young people in tertiary institutions of LUANAR and KCN in Lilongwe. 8 focus groups were conducted, 6 key informants were interviewed and 220 females and male students were interviewed using self-administered questionnaires from the two institutions which were purposively selected.

Results: The study found out that Modern contraceptives uptake was higher among young people of LUANAR and KCN while utilisation was lower. On comparative basis, utilisation and knowledge of modern contraceptives was higher among students at KCN than LUANAR. Male condoms and emergency contraceptive services were frequently accessed. Barriers to access modern contraceptives were noted and included: provider attitudes, privacy and confidentiality, shortage of some modern contraceptives and long waiting time at the clinics.

Conclusion: Access to modern contraceptives among young people in tertiary institutions is influenced by individual, health system related and environmental factors. Tertiary institutions students need information on modern contraceptives to reduce sexual and reproductive health problems. Providing young people with access to modern contraceptives in tertiary institutions can reduce teenage pregnancies, abortions and maternal deaths.

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List of Abbreviations and Acronyms

BUPEC	Bunda Peer Educators Club
COM	College of Medicine
COMREC	College of Medicine Research Ethics Committee
FDG	Focus Group Discussion
FP	Family Planning
HBC	Health Belief Model
HRSC	Health Sciences Research Committee
KCN	Kamuzu College of Nursing
KII	Key Informant Interview
LUANAR	Lilongwe University of Agriculture and Natural Resources
MDGS	Malawi Demographic Health Survey
MscGHI	Master of Global Health Implementation
PI	Principal Investigator
RAs	Research Assistants
RSC	Research Support Centre
SDG	Sustainable Development Goals
SPSS	Statistical Product for Service Solution
STI	Sexually Transmitted Infections
UNDP	United Nations Development Programmes
URPC	University Research and Publication Committee
WHO	World Health Organization

Chapter 1 : Introduction

1.1 Background

Modern contraceptive uptake and utilization remains a significant global health issue among young people [1]. Globally, the population of young people is high and current statistics show that the population of young people is at of 1.2 billion, with a projection growth to nearly 1.3 billion in the year 2030 [2]. The United Nations Department of Economic and social Affairs population division shows that Sixteen million adolescents give birth every year mostly in low and middle income countries [3]. According to World Health Organisation (WHO) 2017, 23 million adolescents would like to use contraceptives but are not using contraceptives which results into early and mistimed pregnancies [4]. The overall contraceptive prevalence for female adolescents in developing world is at 21% [4].

In sub-Saharan Africa, the population of the young people is currently at 226 million accounting for 19% of the global young people's population [5]. About 19% of girls in developing countries become pregnant every year by the age of 18 and 3% by the age of 15 due to socio-cultural, environmental and economic factors [5, 6]. Despite growing international attention to sexual and reproductive health and rights of young people, uptake of modern contraceptive methods remains low, especially in sub-Saharan Africa [7].

Malawi's population is youthful with 40.5% of the population between 10 - 29 years [6]. Contraceptive use among sexually active adolescent girls and boys is low [6]. Only 15% females' and 31% of males use contraceptives [6]. This has resulted in an increase of teenage pregnancies from 25.6% in 2010 to 29% in 2015 [2]. In addition, the number of unsafe abortion amongst adolescents is still high contributing to 18% of Malawi Maternal Mortality ratio which

is currently estimated at 439/100000 [8]. Estimates show that 7.4 percent of all abortions are from adolescent's aged 12-17 years [8].

Evidence show low uptake of modern contraceptives methods among young people in tertiary institutions. Contraceptive uptake in tertiary institutions is dependent on many factors which include demographic, economic, school, socio-cultural and health system factors [8]. There's limited published data on studies done in Malawi on contraceptive use among young people in tertiary institutions.

However, in a study to map Sexual and Reproductive Health services in public and private tertiary institutions of Malawi, use of modern contraceptives was low with male condoms and emergency contraceptives most commonly used methods among tertiary institutions students [9]. The study also revealed privacy and confidentiality, unavailability of own institutional clinics, operating hours and schedule, service provider's attitude and waiting time as barriers to modern contraceptives among students [unpublished] [9].

1.2 Rationale

Young people in tertiary Institutions represent a specific group undergoing transitional period of childhood. The distinct nature and special characteristics of young people in tertiary institutions such as ego and feeling elite with the level of education, predisposes them into risky behaviours, hence investing in them with information, knowledge and services is beneficial both nationally and globally [10]. Drivers of risky sexual behaviours such as Tobacco use, consumption of alcohol and illicit drugs by young people in Tertiary Institutions leads to unwanted pregnancies and unsafe abortions [11]. In Malawi, 62.6% of young people

start sexual activities before the age of 18 [12]. Malawi's Teenage pregnancy is at 29% [2]. Due to Teenage pregnancies in Malawi, many girls drop out of school limiting their future opportunities [2]. Complications in pregnancy and childbirth are the leading causes of death among adolescent girls ages 15-19 in low- and middle-income countries, resulting in thousands of deaths each year [7]. Despite the age of sexual debut, percentage of teenage pregnancies and behavioural characteristics of young people in tertiary institutions of Malawi, several strategies were put in place for young people to access modern contraceptives in and out of schools. However, there is little evidence on ground to support uptake and utilisation of modern contraceptives among young people in Tertiary institutions of Malawi hence the study was conducted. The Health Belief Model (HBM) underpins this study. The constructs of this model postulates how individuals consider themselves susceptible to a health problem with severity of consequences and how benefits outweighs the barriers associated with behaviour change to prevent the health related problem or condition.

1.3 Literature Review

This section presents the search for and review of literature related to the study topic at global and sub-Sahara level. This includes; utilisation, uptake and barriers faced by young people in tertiary institutions whilst accessing modern contraceptives from different service delivery points.

1.3.1 Contraceptive Use among Young People in Tertiary Institutions

Contraceptive use among students in tertiary institutions remain low. Evidence from a study done in Durban, South Africa among tertiary institutions students, revealed that only 11.8% had ever used emergency contraceptives even though, 50% responded that if they had to use

modern contraceptives, they could use it and recommend it to their friends [13]. Whilst as in Nigeria, despite high levels of unwanted pregnancies (67.8%) and 63.5% of induced abortions [11] only 25.4 % reported to have ever used modern contraceptives. Similarly, the practice of contraceptive use has been found to be very low thus 4.9% (95% CI 3.4-6.4%) among young female undergraduates in Ethiopia despite significant risk of unwanted pregnancy and induced abortion [11]. However, in study done at Makerere University in Uganda, revealed the 46.6% of modern contraceptive use among young female students [14]. A study conducted at Makerere University in Uganda 2014, revealed that 70% of respondents had ever engaged in sexual intercourse and 62.1% reported sexual intercourse in the past 12 months. However, only 46.6% reported current contraceptive use of modern contraceptives [14]. A Malawian study done to solicit attitudes towards contraceptive use among schooling adolescents in Malawi revealed negative attitudes; bad side effects and beliefs towards modern contraceptives as barriers to use modern contraceptives [15]. Attaining higher education and independence of young people was revealed as positive attitudes towards modern contraceptives use among schooling adolescents [15].

1.3.2 Reasons for Low Contraceptive Use

Several reasons for low contraceptive use have been cited. For example, in Nigeria a study on contraceptive practice and reproductive health outcomes among Nigerian university students, revealed that utilization of contraceptives among university students were low due to lack of knowledge, attitude and high cost of contraceptives [11].

An African Health Sciences study conducted among young university student in 22 countries shows men and women, younger age, religious affiliation, intrinsic religiosity, and sexually

protective behaviours associated with contraceptive non-use [16]. Lack of internal assets among men, low life satisfaction, lack of personal control among women with low personal mastery and men having Post-Traumatic stress disorder (PTSD) symptoms were also associated with contraceptive non-use among young university students [16].

Religiously, evangelical/SDA and perception that contraceptive use is wrong among young people in tertiary institutions was associated with lower contraceptive use in a study which was conducted in Uganda [14]

1.3.2.1 Commonly used/Method Preferences among Young People in Tertiary

Institutions

Previous studies have shown that there are many factors contributing to young people's choice for modern contraceptives method. In a study which was conducted at Makerere University in Uganda, male condoms were found to be the commonest method used by young people [14]. Similarly, a study done in Kenya, revealed that Emergency Contraceptives were easy to get contraceptives and the most frequently used contraceptives [17]. Respondents showed a positive attitude towards family planning with an average mean score of about 4.0 using a contraceptive attitude Likert scale [17].

In a study of mapping the Sexual and Reproductive Health services in public and private tertiary institutions of Malawi, male condoms and emergency contraceptives were reported as mostly commonly used contraceptive methods among students [9]. The study also revealed dual method as a reason for young people's preference in using condoms more than other modern contraceptive methods [9].

1.3.2.2 Barriers to Modern Contraceptives

Several barriers have been noted affecting contraceptive use among young people in tertiary institutions. Young people in tertiary institutions have difficulties in accessing modern contraceptives due to some identified barriers such as; lack of knowledge, poor attitudes and high cost of contraceptives [18] which contribute to low uptake and utilisation of modern contraceptives.

1.3.2.3 Lack of Knowledge

Studies have shown that contraceptive uptake is low among undergraduate students despite high levels of awareness [19]. In a case study of Ghana Public universities on Family Planning use among undergraduate university students, Knowledge of modern contraceptives, awareness and benefits did not correspond with contraceptive use among undergraduate students due to availability, accessibility and preference influence usage [20]. Studies in Malawi have shown that Malawi has made significant strides in improving the use of modern contraceptive methods although the use of contraceptive methods among youth 15-24 years remains a challenge [21]. A study conducted in three districts in Malawi, revealed that there were difficulties with reaching out to out of school females with family planning services than in school youth due to knowledge gap [21]. The differences in FP planning use by the two groups is evidenced by the misconceptions shared by the out of school youth which had an influence on their interest to use family planning [21]. Although this result highlights the barriers to contraceptive use among youth in secondary education, the barriers may not necessarily apply to the tertiary education given the parameters guiding the conduct and behavior of students in tertiary education institutions.

1.3.2.4 Poor Attitudes

In a study of Knowledge, Attitude, and Practice of Contraception Methods among Female Undergraduates in Dodoma, Tanzania, it was revealed that students have poor attitude of modern contraceptives [22]. Attitude of students towards modern contraceptives was 32.7% and 65.7% on either condoms can slip off during sexual intercourse and reduction of sexual drive respectively [22] as barriers to modern contraceptives. Evidence on modern contraceptive methods uptake among young people in Kenya show that myths, misconceptions, fear of side effects and adverse reactions is associated with modern contraceptive use [23].

Whilst in Malawian study done in tertiary institutions, revealed service -providers attitude, privacy and confidentiality, unavailability of own institutional clinics, operating hours and schedule, and waiting time were the main barriers to modern contraceptives among students [unpublished] [9].

1.3.2.5 Cost of Contraceptives

Cost attached to modern contraceptives is one of the barriers hindering use of modern contraceptives among young people in Tertiary institutions. A Uganda study showed Modern contraceptive costs, availability, provider attitude and students' contraceptive attitude as the main barriers to modern contraceptives among undergraduate students [14]. Similarly, in Lesotho, cost of modern contraceptives has been reported as a critical element in hindering access to modern contraceptives for many university students [19].

In a study conducted in the three districts of Malawi (Dowa, Machinga and Phalombe) cost was identified as one of the barriers to modern contraceptive uptake and utilization [24]. Participants

categorized cost into two; cost of modern contraceptives in some of the private institutions and cost of transport for clients when going to the hospital [24].

1.3.2.6 Stigma Associated With Contraceptive Use

Fear of stigma associated with modern contraceptive use force young people to abstain from seeking modern contraceptive method services [25]. Evidence show that a larger proportion (54.4%) of male students in Kenya experience modern contraceptive use stigma compared to female students (49%) [26]. In a study done in Ethiopia, the findings showed that 30% of young people agreed with at least one anticipated stigma to contraceptive use; young people who experienced anticipated stigma to contraceptive use were significantly more likely to have an unmet need, and those who lived close to a youth-friendly service (YFS) site were significantly less likely to have an unmet need [27].

1.4 Conceptual Framework - Health Belief Model (HBM) Approach to Modern Contraceptives

The Health Belief Model (HBM) is a behavioral health theory which combines knowledge, opinion, and actions taken by an individual or group in reference to his/her health promotion [28]. This particular theory is intrapersonal, and is based on the knowledge and beliefs of each individual person. The HBM is used to develop preventative health programs, as well as design appropriate intervention programs where prevention has failed [28]. The HBM explains the impact of an individual's perception and attitude toward a disease and how those perceptions and attitudes impacted their health-related decision-making [28].

For the purposes of this study, we will focus on the original three elements of the model. These are most applicable to the understanding of health related practices [28]. According to the HBM and its approach to modern contraceptives, requires an individual to consider him/herself susceptible to a condition - perceived susceptibility, in this case impregnating a woman. Secondly, an individual must believe that the condition has potentially serious consequences to his/her life - perceived severity/threat; for example, bearing children being financial burden [28]. Thirdly, the individual must understand that the negative outcome, pregnancy, is avoidable through the use of effective contraception - perceived benefits, and that he/she is personally able to perform this behavior [28]. These factors are then weighed against the costs of using modern contraceptives -perceived barriers. The HBM suggests that once the threat of pregnancy is recognized, if the perceived benefits of modern contraceptive outweigh its perceived costs, an individual is likely to use that modern contraceptive [28].

1.4.1 The Three Elements of the HBM and Their Application to Modern Contraceptives

The HBM assumes that decision-making from a particular person's behaviors occurs when the following three elements out of the six which are also person's ideas are present:

1.4.1.1 Perceived Susceptibility

Often called perceived severity and is when a person recognizes a reason to be concerned about a particular condition or disease. The person must recognize a condition or disease as something negative that could possibly harm him/her such as unwanted pregnancy, unsafe abortions and sexually transmitted diseases STDs. The condition and the disease should be widely recognized by medical professionals as serious conditions or diseases and should be of

public interest [28]. Hence, despite medical professionals' opinions, individuals must decide whether or not the condition and the disease are a risk to them personally.

1.4.1.2 Perceived Threat

This is when a person realizes that they may be personally vulnerable to this particular condition or disease hence the element is contingent upon an individual's opinion as to how likely their behavior is going to lead to a negative outcome [28]. For example; if an individual is participating in unprotected sexual activities, is considered at a higher risk of getting pregnant if she is not on any modern contraceptive method which may result into school drop up and unsafe abortions. The higher the perceived risk, the more likely it will be for people to carry out protective behaviour, which in this case will be 'using modern contraceptives'.

1.4.1.3 Perceived Benefits vs. Perceived Barriers

Perceived benefits vs. perceived barriers is when an individual weighs the cost of the required behavior change against the possible benefits. In this third element of HBM, an individual must determine that changing the behavior will not only improve their health, but can also be achieved within their means. If a person decides that a condition or a disease is a notable health concern, and that he/she is vulnerable to the process, then one may be willing to change his/her sexual behaviors [28]. However, if a person determines that the barriers to changing their behaviors are greater than the possible benefits, this may not follow through. Barriers could include availability of services delivery points or health facility, a lack of modern contraceptives providers attitude, cost associated with obtaining modern contraceptive services and waiting time. [28]. Therefore, the more positive attitudes people have regarding modern contraceptives, the higher their chances will be of practicing safe sex through irrational

decisions from individuals behaviour change. Modern contraceptives uptake and utilisation may be dependent on the following factors: respondent's age, sex, environment, knowledge of contraceptive methods and their advantages; knowledge of a source of supply of contraceptives; attitudes to contraceptive use; knowledge of how to use the different methods of contraception; self-perception of risk of infection and/or falling pregnant and peer pressure. Hence, increased benefit to modern contraceptives would improve school drop up rate due to low rates of unwanted pregnancies among young people in the tertiary institutions due to delayed pregnancies.

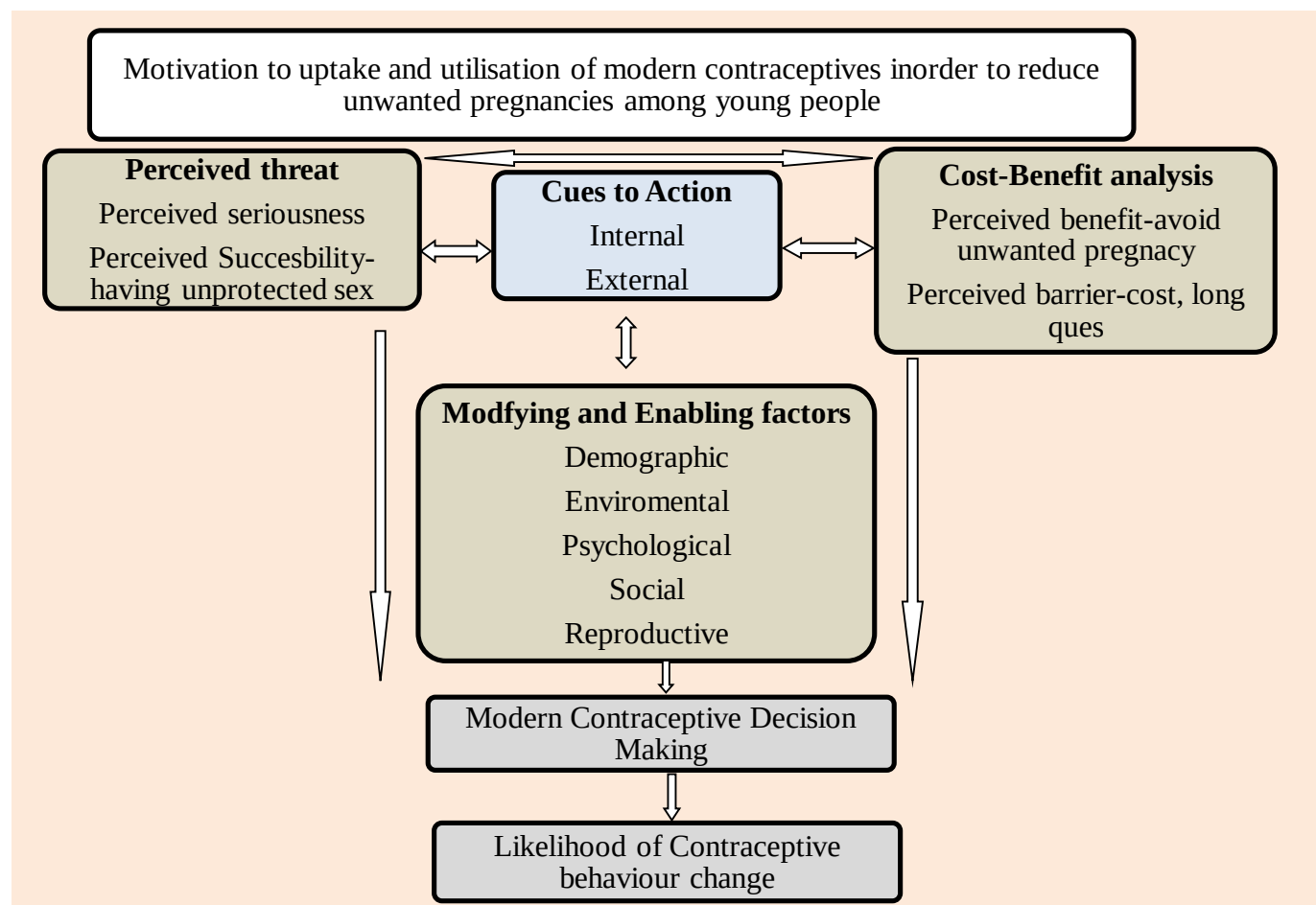


Figure 1: Diagrammatic Conceptual Framework – HBM

1.5 Justification of the Study

Access to modern contraceptives is an effective means of combating problems of unwanted pregnancies, unsafe abortions and maternal deaths among young people. Early sexual debut and teenage pregnancies among young people risks the health of young people in tertiary institutions. Tertiary institution students are at high risk of unwanted pregnancies, unsafe abortions and maternal deaths if they do not have knowledge and access to modern contraceptives. The study has helped in providing evidence based information for programmer's educational institutions to include modern contraceptive components in and extra curriculum for young people in tertiary institutions to become knowledgeable on issues of modern contraceptives. The results of the study will also help in identification of service needs for tertiary institutions young people in relation to modern contraceptives. The results will help to assess the quality of information students are having on contraceptives which often contribute to their attitude toward its use and assist achieve SDG's 3 and 4 which are good health and well-being as well as quality Education [29].

1.5.1 Research Questions

- What is the uptake and utilisation of modern contraceptives among young people in the tertiary institutions of LUANAR and KCN?
- What factors are associated with the low uptake and utilisation of modern contraceptives by young people in Tertiary institutions of LUANAR and KCN?

1.6 Objectives

1.6.1 Broad Objective

The main objective of the study was to assess uptake and utilisation of modern contraceptive method amongst young people in tertiary institutions of LUANAR and KCN in Lilongwe.

1.6.2 Specific Objectives

The specific objectives of this study were to explain the use of Health Belief model in predicting the susceptible conditions, consequences, recommendations and the benefits of individuals to protect and promote the health by:

1. Determining levels of uptake of modern contraceptives among young people in tertiary institutions of LUANAR and KCN.
2. Comparing contraceptive utilization among young people in tertiary institutions of LUANAR and KCN in Lilongwe.
3. Identifying barriers to contraceptive use among students of LUANAR and KCN in Lilongwe.

1.7 Definitions

According to World Health Organization (WHO):

Adolescent covers ages of 10 to 19 years, **Youth** covers the ages of 15 to 24 years and **Young people** covers the ages of 10 to 24. However, the National youth policy defines **young people** as ages of 10 to 35 years regardless of marital status. Therefore, this study used the age group of 10 to 35 years to define Young people.

Uptake of modern contraceptives in this study is defined as number of persons who receives the services and gets the services at the facility or actual reported of picking or buying of

contraceptives in the past one year. For example; number of young people who visits the clinic to get condoms [12].

Utilization of modern contraceptive in this study is defined as number of people who are able to use a service picked from either at the clinic, friends and private pharmacies or actual use of contraceptives in the past one year. For example: some young people may get condoms at the clinic and fail to use it while those who fail to visit the clinic can get a condom from a friend and use it [12].

Modern Contraceptives is an umbrella term used to describe the approaches or methods of preventing or avoiding pregnancy particularly unwanted or early/teenage pregnancy [12].

Health belief model (HBM) is the psychological health behaviour change model developed to explain and predict health related behaviours, particularly in regard to uptake of health services and this enables a stimuli or cue to action to be present in order to trigger the health-promoting behaviour [21].

Unsafe abortion is a procedure for terminating an unintended pregnancy either by individuals without the necessary skills or in an environment that does not conform to minimum medical standards or both [16].

Unprotected sex is any sexual activity taking place without use of barrier methods such as condoms or when there is a contraceptive accident (failure) or misuse, condom rupture, slippage or misuse, failure to abstain on a fertility day of the cycle in a women who uses the calendar method and in case of rape (forced sex) [17].

Confidentiality is the act of keeping a client's information between a provider and a client [12].

Privacy is the concept which determines an individual's right on what information to share and when those people can access that information [12].

Chapter 2 : Methodology

This chapter will discuss the methodology that was followed in this study. The chapter addresses the following: the study population and setting, sample size, data collection, data management, ethical considerations, inclusion and exclusion criteria. Other sections included in the chapter are consenting issues, data analysis, social demographics and variables used as well as limitations of the study.

2.1 Type of Research Study

This was a cross sectional exploratory study which employed both quantitative and qualitative study designs. The study used focus group discussions, self-administered questionnaires and records review to collect data.

2.2 Study Place

The study was conducted at public institutions in Lilongwe, namely: Lilongwe University of Agriculture and Natural Resources (LUANAR) - Bunda Campus, and Kamuzu College of Nursing (KCN) in Lilongwe city.

2.3 Study Population and Setting

The study was conducted on the students from Lilongwe University of Agriculture and Natural Resources (LUANAR), and Kamuzu College of Nursing (KCN) within Lilongwe City. LUANAR offers courses related to Agriculture, Natural resources and Economics, while KCN offers courses related to health, more especially nursing and midwifery courses. In addition, KCN is located in an urban setting whilst LUANAR is rural based. This provided us opportunity to compare contraceptive use behaviours among young people from diverse

backgrounds. Eight FGD's were conducted representing two FGD's from first years, second years, third years and fourth years respectively. Each class had two focus group discussions because the study involved two tertiary institutions hence, each year of study had two FGD's thus, one from KCN and the other from LUANAR. . The FGD's were conducted at quiet places, convenient to the students' choices. In-depths interviews were also conducted for key informants which included the dean of students, Institutional clinic managers and service providers from both clinic universities.

2.4 Sample Size

The study drew a sample for the quantitative and qualitative components to answer study objectives. For the quantitative study, a total of 271 participants were selected for the survey. However, only 220 were surveyed giving a response rate of 81%. The sample size was calculated using the formula below:

$n = N / 1 + N (e)^2$. Estimate measures were utilized during sample calculation and thus; 'n' for sample size, 'N' for population size where research was conducted and 'e' for marginal error or level of precision proportion of the standard deviation, thus the accuracy or standard error of estimate.

$$n = 846 / 1 + 846 (0.05)^2$$

$$n = 846 / 1 + 846 (0.05 \times 0.05)$$

$$n = 846 / 1 + 846 \times 0.0025$$

$$n = 846 / 1 + 2.115$$

$$n = 846 / 3.115$$

.

. . n = 271

271 plus 10% of 271 marginal error

For qualitative sample, a purposive sample of 96 participants with maximum variation was selected to participate in focus group discussions and key informants' interviews. A total of 8 focus groups were done and each had eight to twelve participants giving us a total sample of 80 participants. The in-depth interviews had a total sample 8 participants and this included 2 Dean of students, 2 Clinic managers and 4 service providers. These were included because they are directly involved with students in their respective institution.

2.5 Study Period

Study period was from June 2018 to December 2019.

Table 1: Gantt Chart

TIMELINE																					
Activity	2018								2019												
	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	
Protocol Writing		X	X	X	X																
Approval period						X	X	X													
Orientation of Research Assistants									X												
Data Collection period										X	X										
Transcribing											X	X									
Data Analysis											X	X									
Thesis writing													X	X	X	X	X	X	X		
Submission																			X		
Dissemination																				X	
Publishing of final paper																				X	

2.6 Data Collection

Data collection was done by Principal Investigator (PI) and RA's through a survey, FGD's, in-depth interviews and actual record review of family planning registers. Data was collected from students, key informants and service providers of LUANAR and KCN for a period of two months. Qualitatively, data was collected through FDG's to explore knowledge of modern contraceptives, uptake and utilization of modern contraceptives among students and barriers for accessing modern contraceptives. Whilst as In-depth interviews with key informants explored views on uptake and utilization of modern contraceptives, barriers for students to access modern contraceptives, policies available at the institutions regarding modern contraceptives. Records review data captured uptake and utilization of modern contraceptives from institutional clinics through the clinic managers. The selection of these tools was informed by the nature of the data to be collected, time available as well as the objectives of the study.

Before information was collected, RA's were trained and consent of respondents was sought. Further the respondents were assured of confidentiality of the information given by them. Respondents were identified by the codes placed on the questionnaires.

2.6.1 Inclusion and Exclusion Criteria

Inclusion criteria included students enrolled in generic undergraduate programmes only excluding students enrolled in mature (upgrading) and postgraduate programmes. The purpose was to reduce conflict of interest on modern contraceptives use based on assumptions that majority mature and postgraduate students are married and use modern contraceptives hence, their inclusion in the study would compromise the results.

2.6.1.1 Inclusion Criteria for Students

- ✓ Male and female undergraduate students aged between 18 – 35 years of age.
- ✓ Male and female students who have been learning at the institutions for more than 6 months.
- ✓ Students who consent for participation in the study.

2.6.1.2 Exclusion Criteria for Students

- ✓ Male and female students aged less than 18 years of age.
- ✓ Postgraduate and mature upgrading students.
- ✓ Male and female students who have been learning at the institutions for less than 6 months.
- ✓ Students who won't consent for participation in the study.

2.6.1.3 Inclusion Criteria for Health Care Workers

- ✓ Health care workers who have worked at the institutional health clinics for more than six months, aged 18 years and above.
- ✓ Health care workers involved in sexual and reproductive health services.
- ✓ Willingness to participate.

2.6.1.4 Exclusion Criteria for Health Care Workers

- ✓ Health care workers who have worked at the institutional health clinics for less than six months and aged less than 18.
- ✓ Unwillingness to participate
- ✓ Health workers not involved in sexual reproductive health services.

2.7 Data Management and Analysis

Data collected through FGDs was recorded using a digital recorder. Additional data was collected through informal observation and field notes. Qualitatively, data was transcribed verbatim and processed in Microsoft word. Analysis of qualitative data involved a process of reading, re-reading to familiarize with data, coding was done to extrapolate emerging codes and code categories. A thematic content analysis for qualitative data was done. To ensure trustworthiness of qualitative results, data was validated to ensure credibility. This was done through a process of data verification and data triangulation.

Quantitatively, data was analysed using SPSS software version 20 and presented in tables. Firstly, data was cleaned and some of the variables were recorded to suit the objectives of this study. Descriptive statistics were used to summarize the data and the results were presented as proportions (%). Bivariate analyses (Pearson chi square) were conducted to determine the associations between contraceptive use and each of the predictor variables. To adjust for clustering, all statistical analyses were performed using complex samples analysis of the Statistical Package for the Social Sciences (SPSS, IBM version 20), and statistical significance was set at *P*-value of less than 0.05. All analyses were weighted using a sample weight that was generated for the dataset to account for differences in sampling probabilities. In a bivariate analysis, a chi-square test was used to determine whether the institution of the participant had a significant effect on the utilization of modern contraceptive method amongst young people.

Further, age was added to control confounders and the results were statistically significant if the probability (*p*-value) of finding the observed value was less than 0.05.

2.8 Ethical Considerations

The study was approved by College of Medicine Research Ethics Centre (Ref: P.09/18/2476) – see appendix 4. Permission was also granted from LUANAR and KCN tertiary institutions before the onset of the study (see appendix 3). Study participants were asked to sign an informed consent before each and every interview. Participants were informed to withdraw from the study any time they wish to do so without any penalty. RAs were oriented on the importance of the study, the objectives to the study, data collection tools, confidentiality, consenting process and how to co-facilitate during FDGs.

Confidentiality issues were maintained throughout the study and participant's codes were used during FGDs sessions hence, names of participants were only recorded on informed consent forms which were kept in locked cabinets. Participation in this study was voluntary; therefore there was no monetary compensation to study participants for their time however, refreshments were provided during the FGD interviews.

Chapter 3 : Results

This chapter presents the major research findings and the important issues that emerged from the study. The key findings are categorised under quantitative and qualitative study designs. Quantitatively, the results are shown using tables and qualitative narratives have been presented according to key identified themes.

3.1 Characteristics of Study Participants

The study analysed 202 participants by Gender, age, Tertiary Institution, year of study, religion, source of funding, and history of modern contraceptive use. Majority 52% (n=115) of respondents were male students, aged between 18 and 33 with an assumption that students of this age group were sexually active. Kamuzu College of Nursing had more respondents than Lilongwe University of Agriculture and Natural Resources. On year of study, 45% (n=99) of the total study respondents were in first year of the academic period. 45% (n=98) of the total respondents had ever used modern contraceptives and 55% (n=122) respondents had no history of modern contraceptive use. For details of demographic characteristics, refer to Table 2 below.

Table 2: Characteristics of Respondents for LUANAR and KCN between May 2018 and 30 October 2019 - Students

Respondents Characteristics (n=220)	n	%
Total	220	100
Gender		
Male	115	52
Female	105	48
Age Group (years)		
18-20	92	42
21-25	104	47
25 and above	24	11
Tertiary Institution		
LUANAR ^a	102	46
KCN ^b	118	54
Year of study		
First year	99	45
Second year	33	15
Third year	39	18
Fourth year	49	22
Religion		
Christian	207	94
Muslim	13	6
Source of Funding		
Parents	139	63
Guardian	21	10
Salary	11	5
Farming	15	7
Loan	24	11
Sponsorship	10	5
History of modern contraceptives use among respondents		
Modern history Yes	98	45
Modern history No	122	55

^a= Lilongwe University of Agriculture and Natural Resources, ^b= Kamuzu College of Nursing, n-Number, % - Percentage

3.2 Actual Use of Modern Contraceptives for LUANAR and KCN Tertiary

Institution

Utilization of modern contraceptives for young people at LUANAR and KCN shown in table 2, was assessed through self-administered questionnaires where students were asked on the actual use of modern contraceptives for the period of one year and prevalence of unwanted pregnancies based on knowledge and perception. Overall results showed that KCN had a significantly higher utilisation of modern contraceptives than LUANAR. Utilization of modern

contraceptives was higher in age group of 25 years and above (46%) compared with those in 18 – 20 age range (43%).

Table 2: Actual Use of Modern Contraceptives by Age, Gender, Institution and Marital Status

Characteristics	Number using modern contraceptive n (%)	Total number of Students n (%)	P-value
Total	94 (42.7)	220 (100.0)	
Sex			0.11
<i>Male</i>	55 (47.8)	115 (100.0)	
<i>Female</i>	39 (37.1)	105 (100.0)	
Age group (years)			0.096
<i>18-20</i>	40 (43.4)	92 (100.0)	
<i>21-24</i>	43 (41.3)	104 (100.0)	
<i>25 and above</i>	11 (45.8)	24 (100.0)	
Tertiary Institution			0.02
<i>KCN</i>	59 (50.0)	118 (100.0)	
<i>LUANAR</i>	35 (34.3)	102 (100.0)	
Year of Study			0.12
<i>First Year</i>	43 (43.4)	99 (100.0)	
<i>Second Year</i>	12 (36.3)	33 (100.0)	
<i>Third Year</i>	12 (30.7)	39 (100.0)	
<i>Fourth Year</i>	27 (57.1)	49 (100.0)	
Religion			0.37
<i>Christian</i>	90 (43.4)	207 (100.0)	
<i>Moslem</i>	4 (30.7)	13 (100.0)	
History of modern contraceptives			0.03
<i>Yes</i>	34 (34.6)	98 (100.0)	
<i>No</i>	60 (49.1)	122(100.0)	

'n=number, p-value is according to Pearsons chi2, %=percentage

'LUANAR=Lilongwe University of Agriculture and Natural Resources, 'KCN=Kamuzu College of Nursing

Table 3: Factors Associated With Uptake and Utilization of Modern Contraceptives at KCN and LUANAR in 2019

Characteristics (n= 220)	Crude		Adjusted	
	OR (95%CI)	P-value	OR (95%CI)	P-value
Tertiary Institution				
<i>LUANAR</i>	1.00		1.00	
<i>KCN</i>	1.91 (1.11-3.30)	0.02	1.85 (1.06-3.22)	0.02
Sex				
<i>Male</i>	1.00		1.00	
<i>Female</i>	0.64 (0.37-1.10)	0.33	0.64 (0.37-1.11)	0.12
Age group (years)				
<i>18-20</i>	1.00		1.00	
<i>21-24</i>	0.92 (0.51-0.61)	0.76	0.90 (0.50-1.61)	0.74
<i>25 and above</i>	1.1 (0.44-2.71)	0.83	1.07 (0.42-2.72)	0.87
Year of study				
<i>First Year</i>	1.00			
<i>Second Year</i>	0.74 (0.33-1.67)	0.47		
<i>Third Year</i>	0.57 (0.26-1.27)	1.17		
<i>Fourth Year</i>	1.59 (0.80-3.18)	0.18		
History of Contraceptive				
<i>Yes</i>	1.00			
<i>No</i>	1.82 (1.05-3.14)	0.57		
Religion				
<i>Christian</i>	1.00			
<i>Moslem</i>	0.57 (0.17-1.93)	0.37		

'LUANAR=Lilongwe University of Agriculture and Natural Resources, 'KCN=Kamuzu College of Nursing

3.2.1 Bivariate Analysis for Actual Use of Modern Contraceptives

A bivariate analysis using a chi-square test as presented in table 3 shows that institution, where participants were studying, was statistically significant to utilization of modern contraceptive methods (P=0.02). Other variables such as marital status and sex were eliminated because they were found not to be statistically significant to utilization of modern contraceptives. Based on the results, the odds of utilizing modern contraceptive methods was almost 3 times higher for students at KCN than for students at LUANAR.

3.2.2 Multivariate Analysis of Modern Contraceptives Use among KCN and LUANAR

After controlling the effect of age and sex, KCN was associated with increased utilization of modern contraceptives than LUANAR. Modern contraceptives (OR = 1.85, 95% CI: 1.06-3.22, P = 0.02). The adjusted estimates of the effect of age and sex on utilization were not statistically significance (see Table 3). The adjusted OR for the effect of school on utilisation of contraceptives was lower than the crude and this confounding by age and sex.

3.3 Access of Modern Contraceptives at Institutional Clinics

Actual records review from family planning registers was conducted at the institutional clinics and records for a period of the past one year was reviewed. LUANAR showed a higher number of young people accessing modern contraceptives at the institutional clinic than KCN (see Table 4). Differences in contraceptive uptake was noted between students at KCN and LUANAR with more students at LUANAR accessing modern contraceptives than their counterparts as reported earlier. However, by gender, no major variations were seen in contraceptive use between males and females in both institutions. On methods used, records showed that male condoms were mostly accessed by males while as emergency contraceptives were mostly accessed by female students. Refer to Table 4 below on modern contraceptive methods that were accessed by LUANAR and KCN.

Table 4: Modern Contraceptives Methods Accessed by Young People at LUANAR and KCN through Institutional Clinics by Quantity Not By Number of People in 2019

Modern Contraceptive method	Number of persons	
	KCN	LUANAR
Emergency Contraceptive	612	1,071
Oral Pills	21	11
Implants	5	17
Male Condoms	1,891	4,192
Injectable	19	41
Intra Uterine Device	0	0

KCN= Kamuzu College of Nursing, LUANAR = Lilongwe University of Agriculture and Natural Resources

3.4 Cases of Unwanted Pregnancies for LUANAR and KCN

Reports of unwanted pregnancies at the institutions varied and these were based on perception and knowledge of participants. Majority reported that these were not common 37% (n=82) while 26% (n=56) of the total respondents said unwanted pregnancies were common at the institutions. Refer to

Table below:

Table 5: Cases of Unwanted Pregnancies among Young People at LUANAR and KCN Based on Participant's Perception and Knowledge

Characteristics (n=220)	n	(%)
Very common	56	26
Rare ^b	75	35
Not common ^c	82	37
I don't know	2	2

a= frequent occurrence, b=not occurring very often, c=scarce

3.5 Barriers to Modern Contraceptives

Findings under barriers to modern contraceptives were categorised using the five main themes and these are: availability of resources, lack of confidentiality and privacy, attitude of health workers, lack of information and clinic opening hours. Total number for FGD participants in

all groups was 96 aged 18 to 31 years of age. Majority of the FDG participants were females. The key barriers to modern contraceptives use are described below:

3.5.1 Availability

Quantitative findings show that male condoms are the most commonly used modern contraceptive method among students. However, narratives from FGDs, indicate that condoms are not always available at the convenient places for the students to access.

“We as student, we do prefer male condoms more than any other modern contraceptive, but condoms are not available to us in the places where we prefer to find them such as hostel toilets, which hinders us most to travel to the clinic just for a condom.” (D9 FGD.LUANAR. Male)

“Inadequate of resources is also a challenge because most of the contraceptive methods available favour boys than girls for example scarcity of female condoms at the college clinic.”(S1 FGD. KCN. Female).

Variations were reported in relation to opportunity for students to access modern contraceptives. For example, it was reported that access to contraceptive methods was easier for students who were Bunda Peer Educators Club (BUPEC) members. Also students from KCN reported better access than their counterparts at LUANAR because of their clinical placements as narrated below:

“There is shortage of condoms at the institution however BUPEC members have plenty of them and they give out as many as one wants when they are in stock.” (D3 FGD.LUANAR. Female).

“Modern contraceptives are not commonly available at the institution, however we do not find this as a problem, because we can always access these services on our own when we are doing our practicals at different health places.” (S10.FGD.KCN.Female)

Male condoms have been reported in both institutions as highly preferred compared with female condoms because they are easy to use and have no hormonal side effects. However, although some students preferred to use female’s condoms, they were not readily at the campuses. The quotes below illustrate this:

“Inadequate resources is also a challenge because most of the contraceptive methods available favour boys than girls for example scarcity of female condoms at the college clinic.” (S1.FGD.KCN.Female)

“Many students prefer using male condoms than other modern contraceptives for fear of side effects. Female condoms are not mostly used because they are not available and not easy to use.” (Key Informant)

3.5.2 Lack of Confidentiality and Privacy

Lack of confidentiality and privacy was identified as a barrier to modern contraceptive use. Evidence shows that the some service providers working in the institutional clinics were

students from the same universities. This compromised the privacy and confidentiality of the services resulting in students shying away from patronizing the clinics for fear of embarrassment as expressed below:

“In terms of privacy, this has been a challenge because some of the clinic personnel at our institutional clinic are our fellow students which makes it hard for most of us to acquire modern contraceptive methods from the clinic.” – T7 FGD.LUANAR.Male

“Some of the nurses and doctors working at institutional clinic are our fellow students hence people feel embraced to ask contraceptive methods from these people whenever they visit the institutional clinic. “Students are also afraid to be disclosed to their fellow students by student’s providers that they went to access modern contraceptives – A10 FGD.LUANAR.female.

In addition, fears of exposure by media were reported. For example, a case was cited where in the year 2017, a newspaper article describing cases of unwanted pregnancies and STI among students at LUANAR hit the front page. This has negatively affected student’s willingness to access modern contraceptives from the institutional clinics. The quotes below illustrate this:

“People think the institutional clinic provider’s acts unprofessional due to the issue which took place in the year 2017 where LUANAR was shown on the front page of the newspaper with 150 cases on STIs. Due to this many students feel there is lack of privacy by health workers at the institutional clinics.” – D5 FGD.LUANAR.Male.

“On the same issue of privacy and confidentiality, we students we are afraid that one day our name will be shown out there and our parents will see that on mmmmm... such...such my child went to the clinic for bra-bra service ,,,,laughing!” – D8 FGD.LUANAR.Female.

The lack of audio privacy was reported as a challenge since the clinic rooms are situated very close to each other. It was generally felt that people sitting outside the rooms listened to the conversations inside the consultation rooms:

“Yes, that’s very true! The clinic rooms are also very close to each other, students fail to express themselves because they feel that they are being heard by others who are outside that room” ...thus why many students opt to go to clinics outside the campus”.
– S9 FGD.LUANAR.female.

3.5.3 Attitude of Health Workers

Attitudes of many health workers were reported as a barrier to accessing services. Study results revealed that negative attitudes of health workers both at LUANAR and KCN were a hindrance to accessing modern contraceptives. This forced students to seek contraceptive services outside the campus. For example, students noted judgemental attitudes of service providers in the way they communicated with students who sought services as in the quotes below:

“...aaaa... The way the nurses act on students especially the first years, makes students not to feel free to continue asking for other services because they normally feel that

they are being judged over the services. Services which calls for such acts are seeking for modern contraceptives and VCT services.” – D10 FGD.LUANAR.Female.

“There are always serious questions which they ask you! It’s like the nurses have already made a decision on you, yet you have gone to the clinic for counselling and at the end, you fail to ask for something very important that you came for.” – D8 FGD.LUANAR.female.

3.5.4 Lack of Information

Results from respondents for this study showed that students from LUANAR and KCN lacked proper information on modern contraceptives. This resulted in negative perceptions that modern contraceptives are for married people only and not required among students.

“We do lack proper information on many things making students unaware of the contraceptive methods, how they work, how they can use it and where to access them.” – S6 FGD.

“You know these issues...laughing... Student’s mindset over contraceptive methods... They feel like contraceptive method are for marriage people only. Due to this mindset, it leads to them not using the contraceptive methods because they say they are single.” – S9 FGD.LUANAR.male.

On sources of information, the study established that peers have a greater influence in this age group. Results shows that Young people from LUANAR and KCN get more information from their fellow peers who influence each other's decision on the use of modern contraceptives.

“Lack of information issues are also greatly influenced by our fellow Peers who influence each other not to use the contraceptive methods due to other people's opinions and beliefs such as – not being able to give birth in the future.” –B7 FGD.LUANAR.Male.

Despite getting more information on modern contraceptives from peers, KCN showed to be more knowledgeable of modern contraceptive due to the nature of their course than LUANAR.

“We do learn about these things, and they are in our books too” (D4 FDG. KCN. Male)
“During orientation in first year, we are told where we can find these services, and also because we learn in class, we normally access them at the clinics during practical locations” (D1 FDG. KCN. Female)

3.5.5 Clinic Opening Hours

Young people from LUANAR and KCN expressed concerns that the clinic is normally closed after classes. Results also showed that many young people would like to visit the clinic after classes because they don't want to be seen by other people. Results also showed that the institutional clinics are labelled 24 hours, hence when services are needed after classes, the service provider on call shift were being called to attend the client at the clinic. Many young

people from these institutions were not happy with such arrangements and they expressed that such arrangements led to unprotected sex for many.

“The clinic closes at 4 pm which is not favorable for people who wish to visit during late hours, those who do not want to be seen by people.” (B5.FGD.LUANAR.Female)

“The clinic is labeled 24 hours but if you need night services you have to follow some processes which may even make you lose the appetite of having protected sex for the sake of safer sex practices.” (B6.FGD.LUANAR.Female)

3.5.6 Other Findings

Young people from LUANAR and KCN expressed concerns that the clinic is normally closed after classes. Results also showed that many young people would like to visit the clinic after classes because they don't want to be seen by other people. Results also showed that the institutional clinics are labelled 24 hours, hence when services are needed after classes, the service provider on call shift were being called to attend the client at the clinic. Many young people from these institutions were not happy with such arrangements and they expressed that such arrangements led to unprotected sex for many.

“The clinic closes at 4 pm which is not favorable for people who wish to visit during late hours, those who do not want to be seen by people.” (B5.FGD.LUANAR.Female)

“The clinic is labeled 24 hours but if you need night services you have to follow some processes which may even make you loses the appetite of having protected sex for the sake of safer sex practices.” (B6.FGD.LUANAR.Female)

The study also found out that issues of unwanted pregnancies and abortions cases have dropped compared to the past experience. It was noted that the decrease might be due to an increase to use of modern contraceptives by most young people from these institutions.

“Issues of unwanted pregnancies and abortions are rare nowadays compared to the past experiences where we used to have more cases of unwanted pregnancies and abortion. This is because of the increase in use of modern contraceptives by students especially male condoms. However, I am not sure if issues of abortions remain unreported as this is a sensitive issue that other students may access such services outside the campuses for privacy sake.” – KI

Chapter 4 : Discussion

The chapter discusses the results that were found in both qualitative and quantitative components of this study in relation to the study questions and literature review.

Our study found out that possible factors affecting uptake and utilization of modern contraceptives among young people from LUANAR and KCN were age, gender, and nature of institution. Uptake and utilization was higher in students who were 25 years or older in both institutions compared to those younger than 25 years. The differences observed in uptake and utilisation of modern contraceptives among the age groups suggests a likelihood of autonomy among older students who view themselves as independent and responsible adults. Another possible explanation for low uptake and utilisation of modern contraceptives among younger students could be due to low perceived susceptibility and perceived threat which agrees with the HBM and its approach to modern contraceptives. The HBM model suggests that an individual need to consider him/herself susceptible to a condition and must believe that the condition has potentially serious consequences to his/her life, for example the financial burden that comes with bearing children if one does not use modern contraceptives [28]. The findings of this study are inconsistent with the findings of a study conducted at Masinde Muliro University of Science and Technology (MMUST) in Kenya which indicated higher utilization in younger students than older ones [34]. Higher contraceptive use among younger students at MMUST was associated with fear of getting pregnant in the early stages of University life resulting into school dropout. The low modern contraceptive use among younger students implies an increased risk of undesired pregnancy among this age group. The results of this study on utilization of modern contraceptives should inform future comprehensive sexuality educators

and reproductive health programmers to incorporate policies and programs on modern contraceptives lessons in all age groups of tertiary institutions students.

Our study also found out that Female students had a significantly higher uptake and utilization of modern contraceptives than male students. A possible explanation of higher uptake and utilization among female students could be availability of a variety modern contraceptives choices for females to pick from, whereas for male students they only have the male condom as a choice. Furthermore, in agreement with the Health Belief model, our study results implies that there was a higher perceived risk of female students which motivated them to use modern contraceptives more than male students. This finding of this study is inconsistent with the findings from a study which was conducted in Uganda where non-use of contraception among Ugandan university students was higher in females than males due to gendered power relations [33]. The results from Uganda depict existing social cultural gender norms with men having a higher decision making authority on reproductive health issues, including use of modern contraceptives [33]. Sexual and reproductive health policies and programmes should be focused on existing gender imbalances by promoting participation of young men and women in issues of contraceptives. Women could also be imparted with communicating skills to negotiate contraceptive use, and by creating awareness on gender issues, particularly among men.

Overall results showed that KCN had a significantly higher utilisation of modern contraceptives than LUANAR. The results of the study could be linked to exposure of information and knowledge on modern contraceptives for KCN being a health related training institution. This is also supported by FGD findings, which showed that Students from KCN had a

better access to knowledge and information by the nature of their course as well as proximity to health services. Even though the findings of this study shows that one institution was more knowledgeable on issues of modern contraceptives than the other, evidence from literature suggests information on modern contraceptive alone cannot change health seeking behaviours [35]. Besides knowledge other factors that affect contraceptive uptake and utilization include confidentiality and privacy when accessing services. Similar finding was discovered in a Nigerian study where high levels of contraceptive knowledge did not match contraceptive usage due to fear of side effects and fear of being judged by health workers [35]. The result from this Nigerian study shows that high level of contraceptive knowledge does not translate into actual use. The findings of our study are in agreement with the findings from a Multi-country study which was conducted in 22 countries where contraceptive use was higher in health related colleges which also were proximal to health-related information through many sources such as websites [32]. Such institutions should act as pioneers and peer educators to their fellow young ones to build knowledge gap on modern contraceptives.

Findings from this study further revealed that male condoms were mostly accessed followed by emergency pill contraceptives from both institutions. Apart from male condoms and emergency contraceptive pills, oral pills, Injectables and implants were also accessed. The preference for condoms and emergency contraceptive pills over other modern contraceptives among young people of LUANAR and KCN would be due to reduced burden to side effects of some modern contraceptives. These findings also imply that students fear pregnancy more than sexually transmitted infections as evidenced by an increased use of emergency pills by most young people. This is similar to the Makerere University study which found out that male condoms were mostly accessed by young people from tertiary institutions followed by emergency pills

[11]. In addition, a study which was conducted in Malawi to solicit views on modern contraceptive use and barriers among university students, male condoms were found to be mostly accessed followed by emergency contraceptives pills [13]. Looking at the findings of this study, many young people from these institutions use emergency pills, which is a clear indication that students are practicing unprotected sex. This calls for Reproductive health unit and National Council for Higher Education to facilitate distribution of condoms in Tertiary institutions of Malawi.

This study also found out that barriers to modern contraceptives uptake and use among young people of LUANAR and KCN were lack of availability of modern contraceptives, provider attitude, privacy and confidentiality, clinic opening hours and lack of information. This finding is similar to a finding of another study which was conducted in Malawi to solicit views on sexual and reproductive health services among tertiary institutions which found that privacy and confidentiality, operating hours and schedule, service provider's attitude were some of the barriers to modern contraceptives among students [13]. However, a study done in Nigeria on contraceptive practice and reproductive health outcomes among Nigerian university students, revealed that utilization of contraceptives among university students were low due to lack of knowledge, attitude and high cost of contraceptives [8]. The differences in the results of the studies could be due to differences in health systems policies per country where Malawi provides most of its health services free of charge unlike other countries. There is need for providers to improve on attitude of modern contraceptives towards young people in tertiary institutions in order to promote and improve quality education and health.

4.1 Limitations

The study was designed to take place during full operation of both study tertiary institutions, However, this was not accomplished as many KCN students were out of the campus for their clinical placements due to nature of their course. Despite this, study staff managed to collect data from the consented students who were available during that period.

Due to nature of the study, many young people were not comfortable to talk on issues concerning modern contraceptives despite all measures taken to protect study participants privacy. However, during focus group discussions, students were assured that no names were to be used when responding to the question and instead, codes were used. The study was conducted in only two tertiary institutions which does not generalize the study results for the whole country.

Chapter 5 Conclusion and Recommendation

5.1 Conclusion

The study aimed at determining uptake, comparing utilisation and identifying barriers to modern contraceptives among young people in tertiary institutions of LUANAR and KCN in the city of Lilongwe, Malawi. This study was guided by the Health Belief Model (HBM) which assumes that persons weigh the perceived benefits of a health action against the cost of taking the proposed actions. Based on the findings of the study, uptake and utilisation of modern contraceptives is low among young people of tertiary institutions due to many barriers that have remained unaddressed. Uptake and utilisation of modern contraceptives is lowered by barriers identified. Higher Uptake and utilisation of modern contraceptives for KCN students is linked to exposure of knowledge and information by the nature of their course as well as proximity to health services hence, student's access modern contraceptive service without the help of the provider. Though Information on modern contraceptive alone cannot change an individual to adopt a health seeking behaviours, this may require other factors associated with modern contraceptives to be involved such as confidentiality and privacy, availability of services and providers attitude. The results of the study shows that access to modern contraceptives in tertiary institutions is influenced by variations in age, sex and nature of the institution.

5.2 Recommendations

Based on the conclusions and results of the study, institutions need programs on uptake and utilization of modern contraceptives issues to help students with relevant information relevant to the subject matter. The institutions also require school clubs addressing issues of modern contraceptives to sensitise their fellow students. Institutional clinics also need to be conducting

awareness campaigns every quarter for students to be equipped with relevant knowledge on uptake and utilisation of modern contraceptives. There is also need for institutional clinic staff to be trained in youth friendly health service and turn the clinics into youth friendly health service corners. Future studies should focus on ways of coming up with more evidence on issues of unwanted pregnancies and abortions among young people in tertiary institutions of Malawi.

Further investigations should also be conducted on more tertiary institutions to generalise issues of uptake and utilisation of modern contraceptives among young people in tertiary institutions of Malawi. Further studies should also have enough time to come up with enough data to support status on uptake and utilisation of modern contraceptives from tertiary institutions of Malawi.

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Appendices

Appendix 1: Information Sheet for Study Participants

English version of information sheet and consent form for students during focus group discussions, key informants interviews and in-depth interviews.

Study title:

Assessing uptake and utilization of modern contraceptive method amongst young people in tertiary institutions of Lilongwe University of Agriculture and Natural Resources and Kamuzu College of Nursing in Lilongwe, Malawi.

Principal Investigator: Yewo Kayira

The following text must be read to all participants – students and Key Informants (Dean of students, Clinic Managers and Service Providers), who will participate in the study. A copy of this can be taken home depending on participants' willingness:

Background

Globally, youth proportion is growing at an increased rate of 1.2 billion, with a projection growth to nearly 1.3 billion in the year 2030. Sixteen million adolescents give birth every year mostly in low and middle income countries. According to World Health Organisation (WHO) 2017, 23 million adolescents would like to use contraceptives but are not using contraceptives which results into early and mistimed pregnancies. In sub Saharan Africa the population of the youth is currently at 226 million accounting for 19% of the global youth population. About 19% of girls in developing countries become pregnant every year by the age of 18 and 3% by the age of 15. The overall contraceptive prevalence for female adolescents in developing world is currently at 21%.

Malawi's 40.5% of the population is below 10 - 29 years. Among sexually active adolescent girls and boys in Malawi, only 15% females' use contraceptives and 31% of males use contraceptives. 2015/16 Malawi Demographic Health Survey (MDHS) has shown an increase of teenage pregnancies from 25.6% in 2010 to 29% in 2015. The number of unsafe abortion amongst adolescents is still high and contributes to 18% of Malawi Maternal Mortality ratio which is estimated at 437/100000. Malawi is estimated to have 67,300 cases of induced abortions equivalent to 23 abortions per 1,000 women aged 15-44 and 7.4 percent of all abortions are from adolescents.

What is this research about?

This is a cross sectional exploratory study which will employ qualitative and quantitative study designs to assess uptake and utilisation of modern contraceptive methods among young people in tertiary institutions of LUANAR and KCN in Lilongwe. The study will involve students, key informants and service providers of LUANAR and KCN tertiary institutions in Lilongwe city. Data will be collected from the two institutions through focus group discussions where students will be involved, in-depth interviews which will involve key informants and records review to capture modern contraceptive use among young people in tertiary institutions.

A minimum of eight focus group discussions will be conducted representing four from each institution. Each year will have one focus group discussion to give space for students from

different classes to open up on contraceptive use. Each focus group will have eight to twelve members of mixed sex and age.

All participants will give their consent voluntarily through written signature or thumbprint before participating in the study. Data collected will be managed safely in lockable places and numbers will be used for participant's confidentiality. Ethical approval will be sort from COMREC.

Purpose of the study:

This study will help in generating evidence based information on the uptake and utilisation of modern contraceptives among youth in tertiary institutions for programmers to target interventions over the results. The study will also help in informing ministry of Education in developing an appropriate reproductive health education curriculum for young people in schools and the ministry of health on how to structure policies and strategies on health program for young people in order to reduce unwanted pregnancies and unsafe abortions among young people.

Cost and benefits?

Taking part in the study will not cost you anything. You shall not be given any money for participating in this study. However, the information generated will be very useful for making decisions in programming interventions and developing appropriate reproductive health curriculum for students in tertiary institutions of Malawi. The main disadvantage of being involved in the study is the time, as you will be required to attend the discussion for close to one hour.

Risks and discomforts:

There are no risks and discomforts associated in taking part in this interview. You will be asked on your views concerning uptake, utilisation and barriers of modern contraceptive use among young people in tertiary institutions of Malawi.

Confidentiality?

The information collected will not be shared with anyone beyond our research team. The knowledge gained from this research will be shared in summary form without revealing individuals' identities, with the Ministry of Health and Education in your district and National level. We will record the discussion using audio recorders and your name will not be mentioned during the session hence, numbers will be used instead of names.

What will happen if I refuse to participate?

Your participation in this research is voluntary. You are free to decide if want take part in the study or not. Even If you do agree, you can change your mind at any time. Your decision not to take part in this study will not affect your relationship with other members of the research team nor the investigators.

Who has allowed this research to take place?

This research has been approved by COMREC at College Of Medicine to make sure that the research is conducted properly and that participants' safety and rights are respected.

What if I have any questions?

If you have further questions concerning this study, feel free to ask me. Alternatively you may contact. College of Medicine, COMREC Secretariat, P/Bag 360 Blantyre 3, Telephone: 01971911 and its extension 334.

Appendix 2: Consent Form for Study Participants

INFORMED CONSENT FORM Consent declaration.

1. I have read or someone read to me the information sheet about the study which explains what you are trying to find out.
2. I have asked all the questions that I need to and am happy with the answers you have given me and that I have enough information about the study.
3. I understand that the answers provided will be confidential and that names will not be shared to anyone.
4. If I change my mind about my participation in the study, I understand that this will not affect either their right to take part in other aspects of the study or their interaction with other research team members and lectures.
5. I agree to take part in focus group discussion and in depth interviews

I _____ Voluntarily accept to take part in this study through focus group discussion and in depth interviews.

Signature or thumbprint _____ Date: _____

Study Team Member _____ (Name in BLOCK CAPITALS)

Signature: _____

Witness signature _____

Appendix 3: Questionnaire – for Students

Assessing uptake and utilization of modern contraceptive method amongst young people in tertiary institutions of Lilongwe University of Agriculture and Natural Resources and Kamuzu College of Nursing in Lilongwe, Malawi.

Introduction

My name is Yewo Kayira a Masters student at College of Medicine. I am conducting an academic study that seeks to assess uptake and utilization of modern contraceptive method

Your participation in the study is voluntary. You have the right to not participate in the study or withdraw at any time you wish to do so.

Do you agree to take part in the study? If yes; sign the consent form.....then answer the questions below:

Part A.

Age

- 1). Male ☐
2). Female ☐

Sex

- 1) 18-20 ☐
2) 21-25 ☐
3) 25 and above ☐

Year of Study

- 1) 1st year ☐
2) 2nd year ☐
3) 3rd year ☐
4) 4th year ☐

Number of my children

Religion

- 1) Christian ☐
2) Moslem ☐

Source of funding

- 1) Parent ☐
2) Guardian ☐
3) Salary ☐
4) Farming ☐
5) Loan ☐
6) Sponsorship ☐

Marriage Status

- | | |
|-------------|--------------------------|
| 1) Single | ☐ |
| 2) Married | ☐ |
| 3) Divorced | ☐ |
| 4) Widowed | ☐ |

History of Family Planning

- | | |
|--------|--------------------------|
| 1) Yes | ☐ |
| 2) No | ☐ |

Part B**Please answer the following Questions**

1. What do you know about modern contraceptives

2. What are some of the modern contraceptives that you know

- | | |
|--------------------------------|--------------------------|
| 1) Condoms | ☐ |
| 2) Pills | ☐ |
| 3) Implants –Jadelle, Implanon | ☐ |
| 4) Tubal Ligation | ☐ |
| 5) Vasectomy | ☐ |
| 6) Loop | ☐ |
| 7) Depo – Provera | ☐ |

3. Does this institution offer modern contraceptives to students

- | | |
|-----------------|--------------------------|
| 1) Yes | ☐ |
| 2) No | ☐ |
| 3) I don't know | ☐ |

4. If **yes**:

What are the commonly used modern contraceptives that are being offered at this institution?

- | | |
|-------------------|--------------------------|
| 1) Condoms | ☐ |
| 2) Pills | ☐ |
| 3) Implants | ☐ |
| 4) Tubal Ligation | ☐ |
| 5) Vasectomy | ☐ |

5. How do students access modern contraceptives at this institution?

- | | |
|--|--------------------------|
| 1) Through College Clinic | ☐ |
| 2) Through peer to peer groups | ☐ |
| 3) Through condom distribution sites (Corridors, Toilets etc.) | ☐ |
| 4) Through out of campus clinics | ☐ |
| 5) No access | ☐ |

6. What support does the institution offer to students to access modern contraceptive?
- 1) Through peer to peer clubs ☐
 - 2) Through NGO's ☐
 - 3) No support ☐
7. Barriers faced while accessing modern contraceptives...
- 1) Service Charge ☐
 - 2) Attitude of health workers ☐
 - 3) Lack of Privacy ☐
 - 4) Lack of Confidentiality ☐
 - 5) Availability ☐
 - 6) Clinic not user friendly ☐
 - 7) No challenge ☐
8. In your own opinion what do you think should be done to improve quality access of modern contraceptives among youth at this institution?
- 1) No Service Charge ☐
 - 2) Improve on health workers attitude ☐
 - 3) Improve on Privacy ☐
 - 4) Improve on Confidentiality ☐
 - 5) Improve on opening hours ☐
 - 6) Clinic should be user friendly ☐
 - 7) Improve on availability of services ☐
9. How common are issues of unwanted pregnancies at this institution?
- 1) Very common ☐
 - 2) Rare ☐
 - 3) Not Common ☐
 - 4) I don't know ☐
10. Does this institution have any guiding policy on issues of unwanted pregnancies?
- 1) Yes ☐
 - 2) No ☐
 - 3) I don't know ☐
11. How common are cases of abortions at this institution?
- 1) Very common ☐
 - 2) Rare ☐
 - 3) Not Common ☐
 - 4) I don't know ☐
12. Are there any interventions/initiatives that are conducted at this institution on education or raising awareness for students on modern contraceptives? Who conducts such initiatives?
- 1) Yes ☐
 - 2) No ☐
 - 3) Not Sure ☐

13. If “YES” what interventions are being implemented?

- | | |
|---|--------------------------|
| 1) Condom campaigns & distribution | ☐ |
| 2) Peer to peer Groups | ☐ |
| 3) Orientation for 1 st Year | ☐ |
| 4) Through NGO's | ☐ |
| 5) Continuous Orientation awareness to students | ☐ |

14. Have you ever collected or buy modern contraceptives for the past one year?

- | | |
|-------------|--------------------------|
| 1) Yes | ☐ |
| 2) No | ☐ |
| 3) Not Sure | ☐ |

15. Have you ever accessed and used modern contraceptives for the past one year?

- | | |
|--------|--------------------------|
| 1) Yes | ☐ |
| 2) No | ☐ |

.....Thank you for taking part in this study.....

Appendix 4: Questionnaire – for Key Informants (Dean of Students)

Assessing uptake and utilization of modern contraceptive method amongst young people in tertiary institutions of Lilongwe University of Agriculture and Natural Resources and Kamuzu College of Nursing in Lilongwe, Malawi.

Introduction:

My name is Yewo Kayira a Master of Science in Global Health Implementation student at College of Medicine in my final year. I am conducting a study on uptake and utilization of modern contraceptive methods among young people in tertiary institutions of LUANAR and KCN. Your institution is one of the institutions that has been randomly Selected from a list of tertiary institutions in Lilongwe, Malawi to participate in this exercise. The purpose of this discussion is to solicit your views, ideas, facts and opinions on modern contraceptive use at this institution. The information that you are going to share with us will enable us to jointly identify opportunities, strengths and gaps on modern contraceptives needs for students in tertiary institutions.

I would like to assure you that this discussion will be confidential and the information collected here will be treated in that manner. I will NOT disclose your name or personally associate you with any particular contents of our findings. However, I shall use the information collected here in order to guide the summarization of information shared. I know you are a busy person and I expect that this discussion will not take us more than 1 hour. At the end of this discussion, there might be need for me to check in your records to get actual figures of some of things that we will discuss.

I would therefore want to get your consent to proceed with this discussion interview.

Modern contraceptive methods – uptake and utilization among students in tertiary institutions of LUANAR and KCN

- i. Name of participant
- ii. Age
- iii. Position/cadre
- iv. Institution Name
- v. How many years have you worked with this institution?
- vi. Does your institution offer modern contraceptive services to students?
Yes ☐ No ☐

vii. What are some of the modern contraceptives that are offered to students at this institution?

.....
.....
.....
.....
.....
.....
.....

viii. Out of the services mentioned above which ones are most commonly used by students in this institution and why?

.....
Why.....
.....
Why.....
.....
Why.....
.....
Why.....

ix. (a). What are the health facilities where students from this institution normally seek modern contraceptive services?

.....
.....

(b). In your own view, why do you think students seek services from these facilities which you have mentioned?

.....
.....
.

x. In your own view, what are some of the challenges that students from this institution face in accessing modern contraceptive services from the facilities you have mentioned? What do you think should be done in order to address these challenges?

.....
.....
.....
.....

xi. Are issues of modern contraceptives reflected in any of the existing policies or strategies of this institution?

Yes ☐

No ☐

If yes, what are the specific provisions in these policies and guidelines?

.....

.....

Unwanted pregnancies issues

- i. Are students here at risk of unplanned pregnancies?
 Yes ☐ No ☐
- ii. How common are cases pregnancies in this institution?
 Rare ☐ very common ☐ Not common ☐
- iii. In your own view, why do you think students in this institution engage in unprotected sex that exposes them to unwanted pregnancies?

- iv. Have you ever had cases of abortion in this institution?
 Yes ☐ No ☐ Not Sure ☐

Interviewer should probe to understand common methods of undertaking abortions, where abortion services are sought, etc. Interviewer should also probe how often such cases have been observed

.....

Information, Education and Communication related to modern contraceptive use

- i. What are the types of Modern contraceptives IEC materials that are available at this institution? Where are they put or found?

- ii. What common messages are contained in these IEC materials?

- iii. In what languages are these IEC materials?

- iv. Are there any interventions/initiatives that are conducted at this institution on educating or raising awareness of students on modern contraceptives?
 Yes ☐ No ☐ Not sure ☐

Who conducts such initiatives?

- v. Which organizations are working with this institution in the area of modern contraceptives uptake and utilization?

.....
.....
Which particular interventions are undertaken by each organization?

.....

Is there anything else that I have not asked you as regards to modern contraceptive uptake, utilization and challenges among students, BUT you would want to share?

.....
.....
.....

Thank you for taking part in the study. Note that all information shared here will be confidential

Appendix 5: Questionnaire – Key Informants (Institutional clinic Managers and Service Providers)

Assessing uptake and utilization of modern contraceptive method amongst young people in tertiary institutions of Lilongwe University of Agriculture and Natural Resources and Kamuzu College of Nursing in Lilongwe, Malawi.

Introduction:

My name is Yewo Kayira a Master of Science in Global Health Implementation student at College of Medicine in my final year. I am conducting a study on uptake and utilization of modern contraceptive methods among young people in tertiary institutions of LUANAR and KCN. Your institution is one of the institutions that has been randomly Selected from a list of tertiary institutions in Lilongwe, Malawi to participate in this exercise. The purpose of this discussion is to solicit your views, ideas, facts and opinions on modern contraceptive use at this institution. The information that you are going to share with us will enable us to jointly identify opportunities, strengths and gaps on modern contraceptives needs for students in tertiary institutions.

I would like to assure you that this discussion will be confidential and the information collected here will be treated in that manner. I will NOT disclose your name or personally associate you with any particular contents of our findings. However, I shall use the information collected here in order to guide the summarization of information shared. I know you are a busy person and I expect that this discussion will not take us more than 1 hour. At the end of this discussion, there might be need for me to check in your records to get actual figures of some of things that we will discuss.

I would therefore want to get your consent to proceed with this discussion interview.

.....sign the consent form on the next page.....

Modern contraceptive methods – uptake and utilization among students in tertiary institutions of LUANAR and KCN

- xii. Name of participant
- xiii. Age
- xiv. Position/cadre
- xv. Institution Name
- xvi. How many years have you worked with this institutional clinic?
- xvii. Does your clinic offer modern contraceptive services to students?
Yes ☐ No ☐

- xviii. What are some of the modern contraceptives that are offered to students at this institution?

- xix. Out of the services mentioned above which ones are most commonly used by students at your clinic and why?

 Why.....

 Why.....

 Why.....

 Why.....
- xx. (a). what are other health facilities where students from this institution normally seek modern contraceptive services?

 (b). In your own view, why do you think students seek services from these facilities mentioned above while they have an institutional clinic within the campus?

- xxi. (a). In your own view, what are some of the challenges that students from this institution face in accessing modern contraceptive services from the facilities you have mentioned?

 (b).What do you think should be done in order to address these challenges?

- xxii. What are the policies and guidelines that student need to follow when visiting this clinic?

- xxiii. (a). What is the working time for this clinic?

(b). if it's not 24 hour working clinic, how do students access modern contraceptives services when they need them after hours?

.....
.....

Unwanted pregnancies issues

v. Are students here at risk of unplanned pregnancies?

Yes ☐ No ☐

.....

vi. How common are cases pregnancies in this institution?

Rare ☐ very common ☐ Not common ☐

vii. As service Provider, why do you think students in this institution engage in unprotected sex that exposes them to unwanted pregnancies?

.....

viii. Have you ever had cases of abortion in this institution through your clinic?

Yes ☐ No ☐ Not Sure ☐

Interviewer should probe to understand common methods of undertaking abortions, where abortion services are sought, etc. Interviewer should also probe how often such cases have been observed

.....
.....

Information, Education and Communication related to modern contraceptive use

vi. What are the types of Modern contraceptives IEC materials that are available at this institution? Where are they put or found?

.....
.....

vii. What common messages are contained in these IEC materials?

.....
.....
.....

viii. In what languages are these IEC materials?

.....

ix. (a). Are there any interventions/initiatives that are conducted at this institution on educating or raising awareness of students on modern contraceptives?

Yes ☐ No ☐ Not sure ☐

.....

(b).Who conducts such initiatives?

.....

x. Which organizations are working with this institution in the area of modern contraceptives uptake and utilization?

.....
.....

Which particular interventions are undertaken by each organization?

.....
Is there anything else that I have not asked you as regards to modern contraceptive uptake, utilization and challenges among students, BUT you would want to share?

.....
.....
.....
Thank you for taking part in the study. Note that all information shared here will be confidential

Appendix 6: Approval Letter for LUANAR

To:
The Registrar,
Lilongwe University of Agriculture and Natural Resources (Bunda Campus),
P.O. Box 219,
Lilongwe.

From:
Yewo Kayira (Masters Student),
College of Medicine,
P/Bag. 360,
Blantyre.
Cell: 0999 415 318
Email: yeshphiri@yshec.com

6th August 2018.

Dear Sir/Madam,

REQUEST FOR PERMISSION TO CONDUCT FOCUS GROUP DISCUSSIONS AND KEY INFORMANTS INTERVIEWS WITH STUDENTS AND KEY INFORMANTS (DEAN, CLINIC SUPERVISOR, SERVICE PROVIDER) TO ASSESS UPTAKE AND UTILIZATION OF MODERN CONTRACEPTIVES AMONG STUDENTS

I write to seek permission to conduct a study at your institution on uptake and utilization of modern contraceptives among students.

I am a student at College of Medicine studying Master of Science in Global Health Implementation (MScGHI) in my final year. As part of my fulfillment to attain my Master Degree, I am required to conduct a study and present my paper to members of the faculty.

The study will involve Focus groups discussions (FDG's) with students and Key Informants Interviews with the Dean of students, Clinic Supervisor and Service Provider from the clinical department.

Participants (students) who will be selected purposively are the only ones who will be required to participate in the study. The focus groups discussions and key informants interviews will be arranged properly to avoid disrupting of the classes.

Your assistance will be highly appreciated.

Yours Sincerely,



Yewo Kayira
Master of Science in Global Health Implementation Student.



Yewo Kayira
This is approved
AR-AC
23/08/18

Appendix 7: Approval Letter from KCN

To:
The Registrar,
Lilongwe University of Agriculture and Natural Resources (Bunda Campus),
P.O Box 219,
Lilongwe.

From:
Yewo Kayira (Masters Student),
College of Medicine,
P/Bag 360,
Blantyre,
Cell: 0999 415 318
Email: yeehpturi@yahoo.com

6th August 2018.

Dear Sir/Madam,

REQUEST FOR PERMISSION TO CONDUCT FOCUS GROUP DISCUSSIONS AND KEY INFORMANTS INTERVIEWS WITH STUDENTS AND KEY INFORMANTS (DEAN, CLINIC SUPERVISOR, SERVICE PROVIDER) TO ASSESS UPTAKE AND UTILIZATION OF MODERN CONTRACEPTIVES AMONG STUDENTS

I write to seek permission to conduct a study at your institution on uptake and utilization of modern contraceptives among students.

I am a student at College of Medicine studying Master of Science in Global Health Implementation (MScGHI) in my final year. As part of my fulfilment to attain my Master Degree, I am required to conduct a study and present my paper to members of the faculty.

The study will involve Focus groups discussions (FGDs) with students and Key Informants Interviews with the Dean of students, Clinic Supervisor and Service Provider from the clinical department.

Participants (students) who will be selected purposively are the only ones who will be required to participate in the study. The focus groups discussions and key informants interviews will be arranged properly to avoid disrupting of the classes.

Your assistance will be highly appreciated.

Yours Sincerely,



Yewo Kayira
Master of Science in Global Health Implementation Student.



Appendix 8: COMREC Certificate of Approval

	CERTIFICATE OF ETHICS APPROVAL This is to certify that the College of Medicine Research and Ethics Committee (COMREC) has reviewed and approved a study entitled: P.09/18/2476 - Assessing the uptake and utilisation of modern contraceptive method amongst young people in tertiary institutions of Lilongwe University of Agriculture and Natural Resources (LUANAR) and Kamuzu College of Nursing (KCN) in Lilongwe. Version 2.0 by Yewo Kayira On: 12 Nov-18 <i>As you proceed with the implementation of your study, we would like you to adhere to international ethical guidelines, national guidelines and all requirements by COMREC as indicated on the next page</i> <i>YBWA Combe</i> Dr. YB. Wianho - Chairperson (COMREC) 12 NOV 2018 (COMREC) Research and Ethics Committee 12-Nov-18 Date
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Appendix 9: Budget of the Study

	ITEM	NUMBER	TOTAL IN KWACHA	COMMENTS
1.0	Human Resource			
1.1	Principal Investigator	1	0	Global Health student research paper
1.2	Research Supervisor	1	0	Already employed
1.3	Research Assistance	2	2 @ 25,000=50,000.00	To employ RA's for data collection
1.4	Transcribers	2	2 @ 25,000 = 50,000.00	To employ transcribers for transcribing data collected.
1.5	Training of RA's	2	0	To be conducted same days of data collection
1.6	Training of Transcribers	2	0	To be so brief which won't require funds
	SUB TOTAL		100,000.00	
2.0	Field Cost			
2.1	Refreshments for participants during FDG and RAs	60	60 @ 500 = 30,000 times 4 sessions = 120,000.00	This will include both snacks and a drink
2.2	Vehicle Cost	1	0	To use personal vehicle
2.3	Drivers cost	1	0	PI to drive the vehicle
2.4	Transport for participants	10	10 @ 1,000 = 10,000.00	Only for those who stay out of school campuses because they will be delayed with study protocols.
2.5	Communication	0	0	
	SUB TOTAL		130,000.00	
3.0	Office Cost			
3.1	Stationary (reams)	5	5 @ 3,000 = 15,000	
	Note pads	4	4 @ 500 = 2,000	
	Thumb print and ink pad	1	1 @ 3,000 = 3,000	
	Writing pens	4	4 @ 500 = 2,000	
3.2	Laptop	1	0	To Use personal Laptop
3.3	Printer and Tonner	1	0	To use personal one
3.4	Digital recorder	2	0	To borrow from working place
	SUB TOTAL		22, 000.00	
4.0	COMREC Cost			
4.1	COMREC fee for proposal processing	1	150USD @ 726 = 108,000.00	
	SUB TOTAL		108, 000.00	
5.0	Dissemination cost			
5.1	Dissemination of study results to both institutions	2	@ 25,000 for each institution = 50,000.00	
	SUB TOTAL		50,000.00	
6.0	COM Overheads	1	10% of the total budget (410,000) = 41,000	
	SUB TOTAL		41,000.00	
	TOTAL BUDGET		410,000.00	

Appendix 10. Manuscript

Assessing Uptake and Utilization of Modern Contraceptive Method Amongst Young People in Tertiary Institutions of Lilongwe University of Agriculture and Natural Resources (LUANAR) and Kamuzu College of Nursing (KCN) in Lilongwe: A Cross-sectional exploratory study

Yewo Kayira¹, Wanangwa Manda² and Effie Chipeta^{2*}

Abstract

Background: Modern contraceptive uptake and utilization still remains a significant global health issue among young people. Despite a number of interventions on modern contraceptive services targeting young people in primary and out of schools, evidence on Modern contraceptive use in Malawi tertiary institutions is limited. Hence, an assessment on uptake and utilisation of modern contraceptives among tertiary institutions of Lilongwe University of Agriculture and Natural Resources and Kamuzu College of Nursing was carried out in Lilongwe between 2017 and 2019.

Methods: A cross sectional exploratory study which used a mixed methods approach to assess uptake and utilisation of modern contraceptive methods among young people in tertiary institutions of LUANAR and KCN in Lilongwe. 8 focus groups were conducted, 6 key informants were interviewed and 220 females and male students were interviewed using self-administered questionnaires from the two institutions which were purposively selected.

Results: Modern contraceptives uptake was higher among young people of LUANAR and KCN while utilisation was lower. On comparative basis, utilisation and knowledge of modern contraceptives was higher among students at KCN than LUANAR. Male condoms and emergency contraceptive services were frequently accessed. The type of tertiary institution was statistically significant to utilization of modern contraceptives. The odds of utilizing modern contraceptives was almost 2 times higher for students at KCN than LUANAR students. Barriers to access modern contraceptives were noted and included: provider attitudes, privacy and confidentiality, shortage of some modern contraceptives and long waiting time at the clinics.

Conclusion: Access to modern contraceptives among young people in tertiary institutions is influenced by individual, health system related and environmental factors. Tertiary institutions students need information on modern contraceptives to reduce sexual and reproductive health problems. Providing young people with access to modern contraceptives in tertiary institutions can reduce teenage pregnancies, abortions and maternal deaths.

Key words: uptake, utilisation, modern contraceptives, tertiary institutions, young people and adolescents.

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Background

Modern contraceptive uptake and utilization remains a significant global health issue among young people [1]. Globally, the population of young people is high, currently at of 1.2 billion, with a projection growth to nearly 1.3 billion in the year 2030 [2]. The United Nations Department of Economic and social Affairs population division shows that Sixteen million adolescents give birth every year mostly in low and middle income countries [3]. According to World Health Organisation (WHO) 2017, 23 million adolescents want to use contraception but are not using anything resulting into early and mistimed pregnancies [4]. The overall contraceptive prevalence for female adolescents in developing world is at 21% [4]. Despite growing international attention to sexual and reproductive health and rights of young people, uptake of modern contraceptive methods remains low, especially in Sub-Saharan Africa [5].

Malawi's population is youthful with 40.5% of the population between 10 - 29 years [6]. Contraceptive use among sexually active adolescent girls and boys is low [6]. Only 15% females' and 31% of males use contraceptives [6]. This has resulted in an increase of teenage pregnancies from 25.6% in 2010 to 29% in 2015 [2]. In addition, the number of unsafe abortion amongst adolescents is still high contributing to 18% of Malawi Maternal Mortality ratio which is currently estimated at 439/100000 [7].

Contraceptive uptake in tertiary institutions is dependent on many factors which include demographic, economic, school, socio-cultural and health system factors [7]. Previous studies on uptake and utilisation of modern contraceptives shows low uptake and utilisation of modern contraceptives among university students [8]. Male condoms and Emergency contraceptives have been shown to be the most commonly used methods among tertiary institutions students [8]. The studies also revealed privacy and confidentiality, unavailability of own institutional clinics, operating hours and schedule, service provider's attitude and waiting time as barriers

to modern contraceptives among university students [8]. Several reasons for low contraceptive use have been cited. For example, in Nigeria a study on contraceptive practice and reproductive health outcomes among Nigerian university students, revealed that utilization of contraceptives among university students were low due to lack of knowledge, attitude and high cost of contraceptives [9]. Previous studies have shown that there are many factors contributing to young people's choice for modern contraceptives method. In a study which was conducted at Makerere University in Uganda, male condoms were found to be the commonest method used by young people [10].

Malawi has put in place several strategies for young people to access modern contraceptives in and out of schools. However, there is little evidence on ground to support uptake and utilisation of modern contraceptives among young people in Tertiary institutions of Malawi, hence the study was conducted. The results will help to assess the quality of information students are having on contraceptives which often contribute to their attitude toward its use and assist achieve SDG's 3 and 4 which are good health and well-being as well as quality Education [11]. The Health Belief Model (HBM) underpins this study. The constructs of this model postulates how individuals' consider themselves susceptible to a health problem with severity of consequences and how benefits outweighs the barriers associated with behaviour change to prevent the health related problem or condition [12]. According to the HBM and its approach to modern contraceptives, perceived susceptibility was conceptualized to unwanted pregnancy to motivate young people in tertiary institutions to use modern contraceptives. The belief of university students that unwanted pregnancies has potentially serious consequences to their lives - perceived severity/threat motivated the use of modern contraceptives. We linked the negative outcome, pregnancy, as avoidable through the use of effective modern contraception and thus perceived benefits. The factors were then weighed against the costs of using modern

contraceptives -perceived barriers. The HBM suggests that once the threat of pregnancy is recognized, if the perceived benefits of modern contraceptive outweigh its perceived costs, an individual is likely to use that modern contraceptive [12].

Methods

A cross sectional exploratory study which employed both quantitative and qualitative study designs was conducted to assess uptake and utilisation of modern contraceptives among young people in the tertiary institutions of LUANAR and KCN. The study used focus group discussions, self-administered questionnaires and records review to collect data.

Study Setting

The study was conducted at two public institutions of Lilongwe, namely: Lilongwe University of Agriculture and Natural Resources (LUANAR) - Bunda Campus, and Kamuzu College of Nursing (KCN) in Lilongwe city. LUANAR offers courses related to Agriculture, Natural resources and Economics, while KCN offers courses related to health, more especially nursing and midwifery courses. In addition, KCN is located in an urban setting whilst LUANAR is rural based. This provided us opportunity to compare contraceptive use behaviours among young people from diverse backgrounds. Eight FGD's were conducted representing two FGD's from first years, second years, third years and fourth years respectively. Each class had two focus group discussions because the study involved two tertiary institutions hence, each year of study had two FGD's thus, one from KCN and the other from LUANAR. The FGD's were conducted at quiet places, convenient to the students' choices. In-depths interviews were also conducted for key informants which included the dean of students, Institutional clinic managers and service providers from both clinic universities.

Study population and Sample Size

The study targeted young people from tertiary institutions, key informants and service providers from institutional clinics. The study drew a sample for the quantitative and qualitative components to answer study objectives. Quantitatively, a total of 271 participants were selected for the survey. However, only 220 were surveyed giving a response rate of 81%. The sample size was calculated using $n = N / (1 + N(e)^2)$ formula where, 'n' stands for sample size, 'N' for population size where research was conducted and 'e' for marginal error or level of precision proportion of the standard deviation, thus the accuracy or standard error of estimate. Qualitatively, we drew a purposive sample of 96 participants with maximum variation selected to participate in focus group discussions and key informants' interviews. A total of 8 focus groups were done and each had eight to twelve participants. The in-depth interviews had a total sample of 8 participants and this included 2 Dean of students, 2 Clinic managers and 4 service providers. These were included because they are directly involved with students in their respective institution.

Data Collection and Data Analysis

Data collection was done by Principal Investigator (PI) and Research Assistants (RA's) through a survey, FGD's, in-depth interviews and actual record review of family planning registers from April to June 2019. Qualitatively, data was collected through FDG's to explore knowledge of modern contraceptives, uptake and utilization of modern contraceptives among students and barriers for accessing modern contraceptives. Whilst as In-depth interviews with key informants explored views on uptake and utilization of modern contraceptives, barriers for students to access modern contraceptives, policies available at the institutions regarding modern contraceptives. Records review data captured uptake and utilization of modern contraceptives from institutional clinics through the clinic managers. The selection of these tools was informed by the nature of the

data to be collected, time available as well as the objectives of the study. Data collected through FGDs was recorded using a digital recorder. Additional data was collected through informal observation and field notes. Qualitatively, data was transcribed verbatim and processed in Microsoft word. Analysis of qualitative data involved a process of reading, re-reading to familiarize with data, coding was done to extrapolate emerging codes and code categories. A thematic content analysis for qualitative data was done. To ensure trustworthiness of qualitative results, data was validated to ensure credibility. This was done through a process of data verification and data triangulation.

Quantitatively, data was analysed using SPSS software version 20 and presented in tables. Data was cleaned and some of the variables were recorded to suit the objectives of this study. Descriptive statistics were used to summarize data and the results were presented as proportions (%). Bivariate analyses (Pearson chi square) were conducted to determine the associations between contraceptive use and each of the predictor variables. To adjust for clustering, all statistical analyses were performed using complex samples analysis of the Statistical Package for the Social Sciences (SPSS, IBM version 20), and statistical significance was set at *P*-value of less than 0.05. All analyses were weighted using a sample weight that was generated for the dataset to account for differences in sampling probabilities. In a bivariate analysis, a chi-square test was used to determine whether the institution of the participant had a significant effect on the utilization of modern contraceptive method amongst young people. Further, age was added to control confounders and the results were statistically significant if the probability (p-value) of finding the observed value was less than 0.05.

Results

Demographic Characteristics of Study Participants

Majority (n=115) of respondents were male students, aged between 18 and 33 with an assumption that students of this age group were sexually active. Kamuzu College of Nursing had more respondents than Lilongwe University of Agriculture and Natural Resources. On year of study, 45% (n=99) of the total study respondents were in first year of the academic period. 45% (n=98) of the total respondents had ever used modern contraceptives and 55% (n=122) respondents had no history of modern contraceptive use (Table 2).

Table 3: Characteristics of Respondents for LUANAR and KCN between May 2018 and 30 October 2019 – Students (n = 220)

Variable	n	(%)
Gender		
Male	115	52
Female	105	48
Age Group (years)		
18-20	92	42
21-25	104	47
25 and above	24	11
Tertiary Institution		
LUANAR ^a	102	46
KCN ^b	118	54
Year of study		
First year	99	45
Second year	33	15
Third year	39	18
Fourth year	49	22
Religion		
Christian	207	94
Muslim	13	6
Source of Funding		
Parents	139	63
Guardian	21	10
Salary	11	5
Farming	15	7
Loan	24	11
Sponsorship	10	5
History of modern contraceptives use among respondents		
Modern history Yes	98	45
Modern history No	122	55

^a= Lilongwe University of Agriculture and Natural Recourses, ^b= Kamuzu College of Nursing, n- Number, % - Percentage

Access of Modern Contraceptives at Institutional Clinics

Actual records review from family planning registers was done for a period of the past one year. LUANAR showed a higher number (104) of young people accessing modern contraceptives at the institutional clinic than KCN (61). Differences in contraceptive uptake was noted between students at KCN and LUANAR with more students at LUANAR accessing modern contraceptives than their counterparts as reported earlier. However, by gender, no major variations were seen in contraceptive use between males and females in both institutions. On methods used, records showed that male condoms were mostly accessed by males while as emergency contraceptives were mostly accessed by female students (Table 3).

Table 4: Actual Use of Modern Contraceptives by Age, Gender, Institution and Marital Status

Characteristics	Number using modern contraceptive n (%)	Total number of Students n (%)	P-value
Total		220 (100.0)	
Sex			0.11
<i>Male</i>	55(47.8)	115(100.0)	
<i>Female</i>	39(37.1)	105(100.0)	
Age group (years)			0.096
18-20	40(43.4)	92(100.0)	
21-24	43(41.3)	104(100.0)	
25 and above	11(45.8)	24(100.0)	
Tertiary Institution			0.019
KCN	59(50.0)	118(100.0)	
LUANAR	35(34.3)	102(100.0)	
Year of Study			0.116
First Year	43(43.4)	99(100.0)	
Second Year	12(36.3)	33(100.0)	
Third Year	12(30.7)	39(100.0)	
Fourth Year	27(57.1)	49(100.0)	
Religion			0.369
Christian	90(43.4)	207(100.0)	
Moslem	4(30.7)	13(100.0)	
History of modern contraceptives			0.031
Yes	34(34.6)	98(100.0)	
No	60(49.1)	122(100.0)	

'n=number, p-value is according to Pearsons chi2, %=percentage

'LUANAR=Lilongwe University of Agriculture and Natural Resources, 'KCN=Kamuzu College of Nursing

Table 3: Factors associated with uptake and utilization of modern contraceptives at KCN and LUANAR in 2019

Characteristics (n= 220)	Crude		Adjusted	
	OR (95%CI)	P-value	OR (95%CI)	P-value
Tertiary Institution				
<i>LUANAR</i>	1.00		1.00	
<i>KCN</i>	1.91 (1.11-3.30)	0.02	1.85(1.06-3.22)	0.02
Sex				
<i>Male</i>	1.00		1.00	
<i>Female</i>	0.64 (0.37-1.10)	0.33	0.64(0.37-1.11)	0.12
Age group (years)				
<i>18-20</i>	1.00		1.00	
<i>21-24</i>	0.92(0.51-0.61)	0.76	0.90(0.50-1.61)	0.74
<i>25 and above</i>	1.1 (0.44-2.71)	0.83	1.07(0.42-2.72)	0.87
Year of study				
<i>First Year</i>	1.00			
<i>Second Year</i>	0.74(0.33-1.67)	0.47		
<i>Third Year</i>	0.57(0.26-1.27)	1.17		
<i>Fourth Year</i>	1.59(0.80-3.18)	0.18		
History of Contraceptive				
<i>Yes</i>	1.00			
<i>No</i>	1.82(1.05-3.14)	0.57		
Religion				
<i>Christian</i>	1.00			
<i>Moslem</i>	0.57(0.17-1.93)	0.37		

‘LUANAR=Lilongwe University of Agriculture and Natural Resources, ‘KCN=Kamuzu College of Nursing

Bivariate Analysis for actual use of modern contraceptives

A bivariate analysis using a chi-square test as presented in **Error! Reference source not found.** shows that institution, where participants were studying, was statistically significant to utilization of modern contraceptive methods (P=0.02). Other variables such as marital status and sex were eliminated because they ‘n=number, p-value is according to Pearsons chi2, %=percentage

‘LUANAR=Lilongwe University of Agriculture and Natural Resources, ‘KCN=Kamuzu College of Nursing were found not to be statistically significant to utilization of modern contraceptives. Based on the results of **Error! Reference source not found.**5, the odds of

utilizing modern contraceptive methods was almost 3 times higher for students at KCN than for students at LUANAR.

Multivariate analysis of modern contraceptives use among KCN and LUANAR

After controlling the effect of age and sex, KCN was associated with increased utilization of modern contraceptives than LUANAR. Modern contraceptives (OR = 1.85, 95% CI: 1.06-3.22, P = 0.02). The adjusted estimates of the effect of age and sex on utilization were not statistically significance (see table 5 above). The adjusted OR for the effect of school on utilisation of contraceptives was lower than the crude and this confounding by age and sex.

Table 4: Modern contraceptives accessed by young people at LUANAR and KCN through institutional clinics by quantity not by number of people.

Modern Contraceptive method	Number of methods accessed	
	KCN	LUANAR
Emergency Contraceptive	612	1,071
Oral Pills	21	11
Implants	5	17
Male Condoms	1,891	4,192
Injectable	19	41
Intra Uterine Device	0	0

Actual use of modern contraceptives for LUANAR and KCN Tertiary Institution

Utilization of modern contraceptives for young people at LUANAR and KCN was assessed through self-administered questionnaires where students were asked on the actual use of modern contraceptives for the period of one year and prevalence of unwanted pregnancies based on knowledge and perception. Overall results showed that KCN had a significantly higher utilisation of modern contraceptives than LUANAR. Utilization of modern contraceptives was higher in age group of 25 years and above (46%) compared with those in 18 – 20 age range (43%). Refer to

Table below for more details:

Table 5: Cases of unwanted pregnancies among young people at LUANAR and KCN based on participant's perception and knowledge

Characteristics (n=220)	n	(%)
Very common	56	26
Rare ^b	75	35
Not common ^c	82	37
I don't know	2	2

a= frequent occurrence, b=not occurring very often, c=scarce

Barriers to modern contraceptives

Barriers to modern contraceptives were categorised using the five main themes and these are: availability of resources, lack of confidentiality and privacy, attitude of health workers, lack of information and clinic opening hours. The key barriers to modern contraceptives use among young people of LUANAR and KCN are described below:

Availability of modern contraceptive methods

Quantitative findings show that male condoms are the most commonly used modern contraceptive method among students. However, narratives from FGDs, indicate that condoms are not always available at the convenient places for the students to access.

“ We as student, we do prefer male condoms more than any other modern contraceptive, but condoms are not available to us in the places where we prefer to find them such as hostel toilets, which hinders us most to travel to the clinic just for a condom.” (D9 FGD.LUANAR. Male)

“Inadequate of resources is also a challenge because most of the contraceptive methods available favour boys than girls for example scarcity of female condoms at the college clinic.”(S1 FGD. KCN. Female).

Variations were reported in relation to opportunity for students to access modern contraceptives. For example, it was reported that access to contraceptive methods was easier for students who were Bunda Peer Educators Club (BUPEC) members. Also students from KCN reported better access than their counterparts at LUANAR because of their clinical placements as narrated below:

“There is shortage of condoms at the institution however BUPEC members have plenty of them and they give out as many as one wants when they are in stock.” (D3 FGD.LUANAR. Female).

“Modern contraceptives are not commonly available at the institution, however we do not find this as a problem, because we can always access these services on our own when we are doing our practicals at different health places.” (S10.FGD.KCN.Female)

Male condoms have been reported in both institutions as highly preferred compared with female condoms because they are easy to use and have no hormonal side effects. However, although some students preferred to use female’s condoms, they were not readily at the campuses. The quotes below illustrate this:

“Inadequate resources is also a challenge because most of the contraceptive methods available favour boys than girls for example scarcity of female condoms at the college clinic.” (S1.FGD.KCN.Female)

“Many students prefer using male condoms than other modern contraceptives for fear of side effects. Female condoms are not mostly used because they are not available and not easy to use.” (Key Informant)

Lack of Confidentiality and privacy

Lack of confidentiality and privacy was identified as a barrier to modern contraceptive use. Evidence shows that some service providers working in the institutional clinics were students from the same universities. This compromised the privacy and confidentiality of the services resulting in students shying away from patronizing the clinics for fear of embarrassment as expressed below:

“In terms of privacy, this has been a challenge because some of the clinic personnel at our institutional clinic are our fellow students which makes it hard for most of us to acquire modern contraceptive methods from the clinic.” (T7 FGD. LUANAR. Male)

“Some of the nurses and doctors working at institutional clinics are our fellow students hence people feel embraced to ask contraceptive methods from these people whenever they visit the institutional clinic. “Students are also afraid to be disclosed to their fellow students by student’s providers that they went to access modern contraceptives.”

(A10.FGD.LUANAR.female)

In addition, fears of exposure by media were reported. For example, a case was cited where in the year 2017, a newspaper article describing cases of unwanted pregnancies and STI among students at LUANAR hit the front page. This has negatively affected student's willingness to access modern contraceptives from the institutional clinics. The quotes below illustrate this:

"People think the institutional clinic provider's acts unprofessional due to the issue which took place in the year 2017 where LUANAR was shown on the front page of the newspaper with 150 cases on STIs. Due to this many students feel there is lack of privacy by health workers at the institutional clinics." (D5.FGD.LUANAR.Male)

"On the same issue of privacy and confidentiality, we students we are afraid that one day our name will be shown out there and our parents will see that on mmmmm ... such...such my child went to the clinic for bra-bra service ,,,,laughing!" (D8.FGD.LUANAR.Female)

Apart from the above, labelling of the consultation rooms as Voluntary Counselling testing (VCT) and Family planning rooms were reported as a barrier for many students to access services. Respondents felt that the labelling, exposed them as people around had full knowledge of the type of services they sought at the clinic.

"Privacy and confidentiality will never be there because the clinics have written on the rooms that this is family planning room and this is VCT room, meaning everyone who goes in these rooms will be known that he/she is going for such service" – sounded angry." (S4.FGD.LUANAR.female)

The lack of audio privacy was reported as a challenge since the clinic rooms are situated very close to each other. It was generally felt that people sitting outside the rooms listened to the conversations inside the consultation rooms:

"Yes, that's very true! The clinic rooms are also very close to each other, students fail to express themselves because they feel that they are being heard by others who are

outside that room” ...thus why many students opt to go to clinics outside the campus.”
(S9.FGD.LUANAR.female)

Attitude of health workers

Attitudes of many health workers were reported as a barrier to accessing services. Study results revealed that negative attitudes of health workers both at LUANAR and KCN were a hindrance to accessing modern contraceptives. This forced students to seek contraceptive services outside the campus. For example, students noted judgemental attitudes of service providers in the way they communicated with students who sought services as in the quotes below:

“...aaaa... The way the nurses act on students especially the first years, makes students not to feel free to continue asking for other services because they normally feel that they are being judged over the services. Services which calls for such acts are seeking for modern contraceptives and VCT services.” (D10.FGD.LUANAR.Female)

“There are always serious questions which they ask you! It’s like the nurses have already made a decision on you, yet you have gone to the clinic for counselling and at the end, you fail to ask for something very important that you came for.”
(D8.FGD.LUANAR.female)

Lack of information

Results from respondents for this study showed that students from LUANAR and KCN lacked proper information on modern contraceptives. This resulted in negative perceptions that modern contraceptives are for married people only and not required among students.

“We do lack proper information on many things making students unaware of the contraceptive methods, how they work, how they can use it and where to access them.”
(S6.FGD.LUANAR. Female).

“You know these issues...laughing... Student’s mindset over contraceptive methods... They feel like contraceptive method are for marriage people only. Due to this mindset, it leads to them not using the contraceptive methods because they say they are single.”
(S9.FGD.LUANAR.male)

On sources of information, the study established that peers have a greater influence in this age group. Results shows that young people from LUANAR and KCN get more information from their fellow peers who influence each other's decision on the use of modern contraceptives.

“Lack of information issues are also greatly influenced by our fellow Peers who influence each other not to use the contraceptive methods due to other people's opinions and beliefs such as – not being able to give birth in the future.” (B7 FGD. LUANAR. Male).

Despite getting more information on modern contraceptives from peers, KCN showed to be more knowledgeable on issues of modern contraceptives than LUANAR.

“We do learn about these things, and they are in our books too” (D4 FDG. KCN. Male)
“During orientation in first year, we are told where we can find these services, and also because we learn in class, we normally access them at the clinics during practical locations” (D1 FDG. KCN. Female)

Clinic opening hours

Young people from LUANAR and KCN expressed concerns that the clinic is normally closed after classes. Results also showed that many young people would like to visit the clinic after classes because they don't want to be seen by other people. Results also showed that the institutional clinics are labelled 24 hours, hence when services are needed after classes, the service provider on call shift were being called to attend the client at the clinic. Many young people from these institutions were not happy with such arrangements and they expressed that such arrangements led to unprotected sex for many.

“The clinic closes at 4 pm which is not favorable for people who wish to visit during late hours, those who do not want to be seen by people.” (B5.FGD.LUANAR.Female)

“The clinic is labeled 24 hours but if you need night services you have to follow some processes which may even make you lose the appetite of having protected sex for the sake of safer sex practices.” (B6.FGD.LUANAR.Female

Discussion

Our study found out that possible factors affecting uptake and utilization of modern contraceptives among young people from LUANAR and KCN were age, gender, and nature of institution. Uptake and utilization was higher in students who were 25 years or older in both institutions compared to those younger than 25 years. The differences observed in uptake and utilisation of modern contraceptives among the age groups suggests a likelihood of autonomy among older students who view themselves as independent and responsible adults. Another possible explanation for low uptake and utilisation of modern contraceptives among younger students could be due to low perceived susceptibility and perceived threat which agrees with the HBM and its approach to modern contraceptives. The HBM model suggests that an individual needs to consider him/herself susceptible to a condition and must believe that the condition has potentially serious consequences to his/her life, for example the financial burden that comes with bearing children if one does not use modern contraceptives [12]. The findings of this study are inconsistent with the findings of a study conducted at Masinde Muliro University of Science and Technology (MMUST) in Kenya which indicated higher utilization in younger students than older ones [13]. Higher contraceptive use among younger students at MMUST was associated with fear of getting pregnant in the early stages of University life resulting into school dropout. The low modern contraceptive use among younger students implies an increased risk of undesired pregnancy among this age group. The results of this study on utilization of modern contraceptives should inform future comprehensive sexuality educators and reproductive health programmers to incorporate policies and programs on modern contraceptives lessons in all age groups of tertiary institutions students.

Our study also found out that Female students had a significantly higher uptake and utilization of modern contraceptives than male students. A possible explanation of higher uptake and utilization among female students could be availability of a variety modern contraceptives choices for females to pick from, whereas for male students they only have the male condom as a choice. Furthermore, in agreement with the Health Belief model, our study results implies that there was a higher perceived risk of female students which motivated them to use modern contraceptives more than male students. This finding of this study is inconsistent with the findings from a study which was conducted in Uganda where non-use of contraception among Ugandan university students was higher in females than males due to gendered power relations [14]. The results from Uganda depict existing social cultural gender norms with men having a higher decision making authority on reproductive health issues, including use of modern contraceptives [14]. Sexual and reproductive health policies and programmes should be focused on existing gender imbalances by promoting participation of young men and women in issues of contraceptives. Women could also be imparted with communicating skills to negotiate contraceptive use, and by creating awareness on gender issues, particularly among men.

Overall results showed that KCN had a significantly higher utilisation of modern contraceptives than LUANAR. The results of the study could be linked to exposure of information and knowledge on modern contraceptives for KCN being a health related training institution. This is also supported by FGD findings, which showed that Students from KCN had a better access to knowledge and information by the nature of their course as well as proximity to health services. Even though the findings of this study shows that one institution was more knowledgeable on issues of modern contraceptives than the other, evidence from literature suggests information on modern contraceptive alone cannot change health seeking behaviours

[15]. Besides knowledge, other factors that affect contraceptive uptake and utilization include confidentiality and privacy when accessing services. Similar finding was discovered in a Nigerian study where high levels of contraceptive knowledge did not match contraceptive usage due to fear of side effects and fear of being judged by health workers [15]. The result from this Nigerian study shows that high level of contraceptive knowledge does not translate into actual use. The findings of our study are in agreement with the findings from a Multi-country study which was conducted in 22 countries where contraceptive use was higher in health related colleges which also were proximal to health-related information through many sources such as websites [16]. Such institutions should act as pioneers and peer educators to their fellow young ones to build knowledge gap on modern contraceptives.

Findings from this study further revealed that male condoms were mostly accessed followed by emergency pill contraceptives from both institutions. Apart from male condoms and emergency contraceptive pills, oral pills, Injectables and implants were also accessed. The preference for condoms and emergency contraceptive pills over other modern contraceptives among young people of LUANAR and KCN would be due to reduced burden to side effects of some modern contraceptives. These findings also imply that students fear pregnancy more than sexually transmitted infections as evidenced by an increased use of emergency pills by most young people. This is similar to the Makerere University study which found out that male condoms were mostly accessed by young people from tertiary institutions followed by emergency pills [9]. In addition, a study which was conducted in Malawi to solicit views on modern contraceptive use and barriers among university students, male condoms were found to be mostly accessed followed by emergency contraceptives pills [17]. Looking at the findings of this study, many young people from these institutions use emergency pills, which is a clear indication that students are practicing unprotected sex. This calls for Reproductive health unit

and National Council for Higher Education to facilitate distribution of condoms in Tertiary institutions of Malawi.

This study also found out that barriers to modern contraceptives uptake and use among young people of LUANAR and KCN were lack of availability of modern contraceptives, provider attitude, privacy and confidentiality, clinic opening hours and lack of information. This finding is similar to a finding of another study which was conducted in Malawi to solicit views on sexual and reproductive health services among tertiary institutions which found that privacy and confidentiality, operating hours and schedule, service provider's attitude were some of the barriers to modern contraceptives among students [17]. However, a study done in Nigeria on contraceptive practice and reproductive health outcomes among Nigerian university students, revealed that utilization of contraceptives among university students were low due to lack of knowledge, attitude and high cost of contraceptives [7]. The differences in the results of the studies could be due to differences in health systems policies per country where Malawi provides most of its health services free of charge unlike other countries. There is need for providers to improve on attitude of modern contraceptives towards young people in tertiary institutions in order to promote and improve quality education and health.

Limitations

Although the study provided insight about modern contraceptives among young people in the two public institutions, the study had some limitations. The study was designed to take place during operation full operation of both institutions, however, this was not accomplished as many KCN students were out of campus for their clinical placements due to nature of their course. Despite this, the study staff managed to collect data from the consented students who were available during that period. Due to nature of the study, many young people were not comfortable to discuss issues concerning modern contraceptives despite all measures taken to

protect study participants privacy. However, during focus group discussions, students were assured on anonymity and codes were used for participant's identification. The study was conducted in only two institutions which does not generalise the study results for the country.

Conclusion

The study aimed at determining uptake, comparing utilisation and identifying barriers to modern contraceptives among young people in tertiary institutions of LUANAR and KCN in the city of Lilongwe, Malawi. This study was guided by the Health Belief Model (HBM) which assumes that persons weigh the perceived benefits of a health action against the cost of taking the proposed actions. Based on the findings of the study, Uptake and utilisation of modern contraceptives will remain low among young people of tertiary institutions if barriers to modern contraceptives remain unaddressed. Uptake and utilisation of modern contraceptives is lowered by barriers identified and this is relation to the study done in Nigerian which revealed that low utilisation of modern contraceptives was due to knowledge gap and Health workers knowledge[8]. Higher Uptake and utilisation of modern contraceptives for KCN students is linked to exposure of knowledge and information by the nature of their course as well as proximity to health services hence, student's access modern contraceptive service without the help of the provider. Though Information on modern contraceptive alone cannot change an individual to adopt a health seeking behaviours, this may require other factors associated with modern contraceptives to be involved such as confidentiality and privacy, availability of services and providers altitude. Regardless of respondents responses, the results of the study shows that access to modern contraceptives in tertiary institutions is influenced by variations in age, sex and nature of the institution.

Abbreviations

COM: College of Medicine; COMREC: College of Medicine Research Ethics Committee; FDG Focus Group Discussion; FP: Family Planning; HBC: Health Belief Model; HRSC: Health Sciences Research Committee; KCN: Kamuzu College of Nursing; KII: Key Informant Interview; LUANAR: Lilongwe University of Agriculture and Natural Resources; MDGS: Malawi Demographic Health Survey; MscGHI: Master of Global Health Implementation; PI: Principal Investigator; RAs: Research Assistants; RSC: Research Support Centre; SDG: Sustainable Development Goals; SPSS: Statistical Product for Service Solution; STI: Sexually Transmitted Infections; UNDP: United Nations Development Programmes

Ethics approval and consent to participate

The study was approved by College of Medicine Research Ethics Centre (COMREC) - Ref: P.09/18/2476. Permission was also granted from LUANAR and KCN tertiary institutions before the onset of the study. Study participants were asked to sign an informed consent before each and every interview and were informed to withdraw from the study any time they wish to do so without any penalty. RA's were oriented on the importance of the study, the objectives to the study, data collection tools, confidentiality, consenting process and how to co-facilitate during FDGs. Confidentiality issues were maintained throughout the study and participant's codes were used during FGDs sessions hence, names of participants were only recorded on informed consent forms which were kept in locked cabinets. Participation in this study was voluntary; therefore there was no monetary compensation to study participants for their time however, refreshments were provided during the FGD interviews.

Consent for publication

Not applicable

Availability of data and material

The datasets used are available from the corresponding author on request.

Competing interests

The authors declares that there are no competing interests

Funding

No funding is available

Authors' contributions

YK conceptualized the idea and designed the study, performed the literature search, data collection, performed statistical analysis, interpretation of data and wrote all drafts of the manuscript. EC, and WM provided substantial feedback on the drafts of the paper and interpretation of data and analysis. All authors read and approved the final manuscript.

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Appendix 11: A Proof of Manuscript Submission to the Journal

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Sent: Wednesday, September 2, 2020, 09:57:38 PM GMT+2
Subject: Confirmation of your submission to Reproductive Health - REPH-D-20-00605

REPH-D-20-00605

Assessing uptake and utilization of modern contraceptives among young people in Tertiary Institutions of Lilongwe University of Agriculture and Natural Resources (LUANAR) and Kamuzu College of Nursing (KCN) in Lilongwe.
Yewo Kayira Phiri, HEALTH MANAGEMENT SYSTEMS; Wanangwa Manda Chimwaza, Master of Science in Public Health; Effie - Chipeta, PHD in Sociology, Centre for Reproductive Health - College of Medicine.

Dear Mrs. Phiri,

Thank you for submitting your manuscript 'Assessing uptake and utilization of modern contraceptives among young people in Tertiary Institutions of Lilongwe University of Agriculture and Natural Resources (LUANAR) and Kamuzu College of Nursing (KCN) in Lilongwe.' to Reproductive Health.

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