FACTORS ASSOCIATED WITH SELF-MEDICATION IN LUSAKA, ZAMBIA. A CROSS-SECTIONAL STUDY OF CHELSTON TOWNSHIP

BY

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DECLARATION

This dissertation is the original work of Luka Nkhoma. This work has been produced in accordance with the guidelines for MPH Health Policy and Management for the University of Zambia. The dissertation has not been submitted elsewhere for a degree at this or other University.

Signature…….

Date…….

DEDICATION

I would like to dedicate this work to my wife Mweene Masilani Nkhoma, my daughters Tionge, Twalumba, Chisomo, and Takondwa. I am grateful to them for their constant support, patience, and endurance during the long hours as I worked on the report. I thank them too for their encouragement.

CERTIFICATE OF COMPLETION OF DISSERTATION

I, Luka Nkhoma, hereby certify that this dissertation is the product of my words and has been submitted for a Master Degree in Health Policy and Management program. I further confirm that it has not been submitted to another University in part or whole for the award of any program.

Signature……

Date…….

I, Dr. Mpundu Makasa having supervised and read this dissertation is satisfied that this is the original work of the author under whose name it is being presented.
I further confirm that the work has been completed satisfactorily and is ready for presentation to the examiners.

Signature/ Supervisor……

Date…….

Head of Department…….

Date……

Department…….

CERTIFICATE OF APPROVAL

The University of Zambia approves this dissertation of Luka Nkhoma in partial fulfillment of the requirements for the award of the Degree in Master of Public Health in Health Policy and Management.

Examiner's

Signatures……...Date…….....

1……..... ……...

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ABSTRACT

Self-medication is treating self-diagnosed illnesses without the input of health professionals. Self-medication is a public health problem. The practice may lead to the development of drug resistant strains of micro-organisms, create difficulties for health professionals to evaluate the disease picture by masking the symptoms of diseases, lead to wrong dosages, increase side effects, and may deregulate policies which control drug usage. Although self-medication has disadvantages, the practice has some advantages. The practice improves health care delivery system by facilitating better use of clinical skills, reduces congestion in health facilities, saves time and money which would otherwise have been used for consultation. Self-medication can also save life especially in acute conditions.

The study objectives were to investigate whether people self-medicate, to determine the reasons for self-medication, to establish the sources of drugs, and to establish whether age, sex, education, employment status, and income are associated with self-medication.

The study was conducted in Chelston Township in Lusaka. This was a cross-sectional study design. Systematic sampling was used to select 422 participants from 6,395 households. Data was collected using structured interviewer administered questionnaires. SPSS version 16.0 was used to analyze data. All statistical tests were at 5% significance level. Logistic regression model was used to analyze the association between independent and dependent variables.

The findings established that three thirds of the participants self-medicate. In addition, the findings showed that self-medication was high among females 211 (65.9%). The majority of the participants 94(22.3%) self-medicated because of previous experience of treating similar illnesses. The results showed that private drug stores were the main source of drugs 173 (41%). Analgesics were found to be the most commonly used medicines 132 (31.3%) while headache was the most commonly treated condition 137(32.5%). Being female (OR=2.05, CI =1.37-3.09, $p<0.02$) and being in employment (OR = 1.85, CI= 1.17-2.93, $p<0.03$) were the predictors of self-medication.

Self-medication was high in the study area. Possible contributing factors are shortages of essential drugs in public clinics, understaffing, and long queues. Lack of enforcement of drug handling and

dispensing policies in private pharmacies and ignorance among community members of the dangers of self-medication may also be contributing factors.

Self-medication is a public health problem in the study area. The Ministry of Health should improve availability of drugs and other health services to deter people from seeking alternative sources of drugs. In addition, the Zambia Medicines Regulatory Authority should strengthen and enforce policies which control drug uses in Zambia. Further, the public needs to be educated on the dangers of self-medication. A larger study to assess the prevalence of self-medication in Zambia may be required.

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LIST OF ACRONYMS

B.C-	Before Christ
MOH-	Ministry of Health
OTC D-	Over the Counter Drugs
POD-	Prescription-Only Drugs
STI-	Sexually Transmitted Infection
UNZA-	University of Zambia
WHO-	World Health Organization
ZAMRA-	Zambia Medicines Regulatory Authority

DEFINITION OF KEY WORDS

Self-medication- the practice of treating self-diagnosed conditions without the input of health professionals

Diagnosis- the identification of the nature of a disease or other health problems by scrutinizing the symptoms.

Analgesic- a drug which gets rid of pain

Disease- a state of dysfunction of the human body which creates specific symptoms and does not arise from physical damage

Drugs- a chemical which when taken can kill germs and also influence the functioning of the human body.

Over the counter drugs – these are medicines dispensed only on prescription

Prescription only drug – these are medicines dispensed without prescription

Drug abuse - the misuse of prescription or over the counter drugs with negative consequences on an individual's wellbeing

CHAPTER ONE

INTRODUCTION

1.1 Background

Disease is unavoidable in a person's life. When a person is sick, it is natural that he or she will try to do something to reduce the discomfort and pain caused by the disease. In most cases, a sick person will try to manage their condition at home before they seek medical advice from health professionals. For instance, during the early times of man's existence, people who were sick or injured did whatever seemed suitable to alleviate their suffering at home (Leake, 1965). Although sick people try to ease discomfort by applying or taking something on their own, they of course also seek help from others. In Egypt, about 2000 B.C, the great Ebers papers indicate that sick people consulted emerging health professionals and close to 900 prescriptions of different types of unprocessed mineral, plant, and animal materials were prescribed to reduce symptoms of illnesses (Leake, 1965). The practice of taking drugs without consulting trained health professionals is known as self-medication.

Self-medication has been defined by Alghanim (2011) as "the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent diseases or symptoms". In addition, self- medication entails the preservation and re-use of drugs that are in fact supposed to be prescribed by trained medical personnel (Alghanim, 2011). In other words, self-medication is the tendency to either buy or ask for drugs from another person and use these drugs without the input of health professionals. Self-medication may involve the use of either Western or traditional medicine to treat minor ailments. The interest of this study was however to investigate the use of Western medicine in self-medication.

Self-medication is a world-wide problem and is attracting the attention of health professionals as well as policy makers (Salvaraj *et al,* 2014). Self-medication is becoming a source of concern not only because of the magnitude of the problem but also because of its demerits (Salvaraj *et al,* 2014).

At global level, self-medication accounts for between 22% and 70% (WHO, 2010). In Europe alone; self-medication is estimated to be around 68 % (WHO, 2010). In developing countries including Africa, self-medication is estimated to be around 60-80%. In Zambia, cases of self-medication are in the range of 36% (Diop et al, 1994). Although self-medication is a global problem, the statistics above show that the practice seems more serious in developing countries than in developed countries.

Self-medication has some serious public health consequences. The tendency to self-medicate may lead to the development of drug resistant strains of micro-organisms. In addition, self-medication may cause difficulties for health professionals to evaluate disease outcomes. Furthermore, self-medication has policy implications in that it may also lead to deregulation of those drugs which are supposed to be bought using prescriptions only.

In Zambia like in many other countries, self-medication is a public health problem which needs attention. In a study carried out to assess the emergency of drug resistant pathogens to antibiotics at the University Teaching Hospital, results showed that the failure rate of especially the Penicillin group of antibiotics was at 73.2% (Fwambo, 2007). The emergency of resistant strains to Anti-Malaria drugs was also reported. Among other reasons, self-medication and non-compliance to the recommended treatments was sited as the cause of drug resistance at the University Teaching Hospital. It can therefore be concluded that self-medication is a public health problem in Zambia. This study was carried out to investigate the reasons for self-medication, establish the sources of drugs, and investigate the factors associated with self-medication.

1.2 Statement of the problem

Self-medication is attracting the attention of health professionals as well as policy makers not only because of the magnitude of the problem but also because of its demerits. In Zambia, self-medication was estimated to be around 36% (Diop, 1998)

Self-medication has negative consequences at policy, professional, and individual levels. At policy level, self-medication affects the existing health policies especially those that regulate the use of drugs. The effect of self-medication with regards to deregulation is that drugs may change from prescription status to over the counter drugs (Alghanim, 2007). The problem of letting drugs become deregulated is that the regulatory authority may lose control of drug usage in the country and the end result of such a situation is that drugs may end up being abused. Apart from having policy implications, self-medication also has negative consequences on health professionals. Self-medication not only makes it difficult for health professionals to have a clear picture of the disease at first contact but may also create problems in evaluating the disease progress. This is because by the time a person consults a health professional, they will have already taken medicine which may mask the symptoms of the disease. Another problem of self-medication is that it may affect the individual who self-medicates. At individual level, self-medication may lead to the development of drug resistant strains of micro-organisms (Omolase et al, 2007). The findings of the study conducted by Fwambo (2007) at the University Teaching Hospital in Zambia suggest that self-medication may lead to the development of drug resistant micro-organisms. In this study, the failure rate of antibiotics, especially those belonging to the Penicillin group, was estimated to be around 73.2%. The failure rate of antibiotics was partly attributed to the tendency by people to self-medicate. Drug resistance is a public health problem because treatment of many diseases does not only become difficult but also expensive since new sensitive drugs have to be bought to replace the ineffective ones. In Zambia for instance, the Ministry of Health had to change the treatment of Malaria from using Chloroquine to Coartem as a result of drug resistance. The cost of Coartem is much higher compared to the cost of chloroquine.

The studies which have been done in Zambia have concentrated mainly on the prevalence and consequences of self-medication. Nothing much has been done in terms of finding out why people self-medicate, how people access the medicines, and also investigating the factors associated with self-medication. This research therefore focused on finding out whether people self-medicate, if so, establish why people self-medicate, establish how people access the drugs, and also determine the factors associated with self-medication.

1.3 Significance of the study

This study was conducted because a search of the published literature showed that no recent study was conducted on self-medication in Zambia. The previous investigation conducted on self-medication was conducted 15 years ago by Diop and others in 1998. The previous study was conducted in the Northern and Luapula Provinces of Zambia. The aim of the previous study was to understand the health seeking behaviours of patients in Zambia. The previous study was however old and another study needed to be conducted in order to come up with latest information on self-medication practices in Lusaka, Zambia. Further, this study was conducted because the previous study concentrated mainly on measuring the prevalence of self-medication and did not investigate the factors associated with self-medication. The current study however investigated the factors associated with self-medication. Conducting a research on self-medication in Lusaka was also necessary not only because it may add value to the existing body of knowledge on self-medication but may also provide helpful information for policy reviews, help health professionals to evaluate the picture of diseases correctly, and reduce the development of drug resistant micro-organisms in the country.

The significance of conducting this study cannot be overemphasized. This is because the findings of this investigation may act as an intervention tool for policy makers. The results of the research may help policy makers to evaluate the current policies that deal with drug use. Policy makers may therefore be able to determine whether such policies are sufficient in as far as regulating drug usage is concerned or whether these policies require strengthening. Secondly, the findings may also be used as a tool for health education and health promotion in the community. Strategic health education and health promotion campaigns may help to reduce self-medication practices by the general public. A reduction in self-medication practices may in turn help health professionals to evaluate the picture and progress of diseases effectively. Thirdly, the findings may be used as a tool for behavioral change towards self-medication. Once people's behaviour is changed, there may be a reduction in self-medication practices.

CHAPTER TWO

LITERATURE REVIEW

In many countries of the world, medicines are either classified as over the counter drugs or prescription -only drugs (WHO, 2000). Over the counter drugs are those drugs which a person can buy from a chemist without a prescription written by a health professional. Prescription –only drugs on the other hand, are those drugs that require a prescription from a health professional before you can buy the drug. Across the globe, prescription drugs account for 66% of dispensed drugs. In this study, the self-medication products of interest were antibiotics which are sold to consumers on a one off basis without written prescriptions from trained health professionals.

2.1 Demerits of self-medication

Self-medication can either be beneficial or harmful to human life. The practice of self-medicating is dangerous for several reasons. Self-medication may lead to inaccurate diagnosis by health professionals, may lead to the use of unsuitable medications which may cause side effects, and may also lead to the masking of symptoms of diseases which may be of serious nature. In addition, self-medication may also lead to delays in seeking medical advice, may result in incorrect dosages that may lead to accidental overdose, and may also result in the use of drugs which are for instance not safe to mix. The other danger of self-medication is that is that an individual may use of drugs which have legal consequences or may have health concerns. Further, the practice of self-medication carries the risk of misuse of drugs and also the risk of developing resistance or addiction especially if used for prolonged periods of time.

To begin with, self-medication is a harmful practice in public health because it is a possible contributor to the development of drug resistant strains of micro-organisms (Bennadi, 2013). Resistance to drugs takes place when the germs, especially bacteria, changes to become more or fully resistant to medications which previously could treat these same germs. For instance, inappropriate use of antibiotics and anti-malaria drugs has already becoming a common public health problem in many countries in the world. The problem that arises out of drugs becoming

resistant is that the health care delivery system gets affected. This is because drugs purchased may no longer control infections and people may even die from diseases which would easily be curable.
The second negative consequence of self-medication is that it may increase the likelihood of inappropriate, wrong, and unwarranted treatment of illnesses (Bennadi, 2013). When people self-medicate, the chances are that they may have difficulties with dosages, and timing for taking the drugs. In this case, people may either take fewer drugs than required or more tablets than what is advisable at any particular time. Other than taking wrong dosages, people may also not take these medicines at the time when they are expected to be taken. For instance, people may miss certain timings or may even take these drugs more times than it may be required. Problems arising from wrong drug dosages may lead to overdoses which in turn may result in undesired side effects and death in some cases.

The other danger of self-medication practice is that it may also lead to lack of clinical evaluation of a disease by health professionals (Omolase, 2007). When people self-medicate before consulting a health professional, the symptoms of a disease may be masked. Once symptoms are masked, a health professional may have difficulties to use their skill to come up with appropriate investigations as well as make the correct diagnosis. Failure to evaluate the disease picture of a patient may lead to missed or inaccurate diagnosis of diseases, time wasting, and delays in commencing appropriate treatment and this may result in complications.

Another danger that comes with the practice of self-medication is that individuals who self-medicate may end up using drugs that are not safe to mix. In a case where two drugs which are not supposed to mix are used together, there may be a problem of drug interaction. In addition, self-medication practice may also result in drug abuse which in the end may lead to drug addiction. While drug abuse may have legal implications, drug addiction may lead to overdependence on certain drugs by those individuals who take these drugs.

Self-medication practice may also have negative implications on policies that are formulated to control the use of drugs. In this case, the practice may result in drugs becoming deregulated and changing from prescription status to being sold over the counter (Alghanim, 2011). Once drugs become deregulated, people may easily access these drugs even without prescription and the end

result may be misuse of Prescription Only Drugs. Because of the above problems, it is therefore necessary that those that prescribe, dispense, as well as consume drugs take care when it comes to handling of medicines.

2.2 Merits of self-medication

Although self-medication has the above stated harmful effects, it also has some benefits. One of the benefits of self-medication are that patient's gain freedom and get empowered to make decisions regarding the management of minor illnesses (Hughes *et al*, 2001). When people are sick, it is not always necessary that they consult a health professional especially when the illness they have is minor. In a case where the complaint that an individual has is minor, self-medicating is beneficial because people are able to manage such conditions on their own.

The other benefit of self-medication is that it improves health care systems by facilitating better use of clinical skills and increasing access to medication (Hughes, 2001). Self-medication improves clinical skills by reducing pressure on health professionals. This happens as most of the patients; especially those with minor illnesses treat themselves at home instead of coming to health facilities. As a result, health professionals have time to use their skills to come up with the correct diagnosis of diseases.

Another benefit of self-medication is that it may help to cure minor illnesses at home, thereby saving time and money which could otherwise have gone towards paying consultation at health facilities (Hughes, 2001). Consulting health professionals on minor illnesses, may sometimes led to unnecessary costs especially when one decides to go to a fee paying health facility. In addition, consulting health professionals when the illness is minor may also be time wasting as the illness may easily be treated at home. In cases like these, it may therefore be beneficial to simply treat these

Conditions at home and save money and time. Well practiced self-medication may also save the life of a patient especially in cases where the illness is acute and there is no health facility nearby (Hughes, 2001). In a case where a condition is severe and there is presence of a trained health

professional to prescribe the drugs, self-medication may not only bring about quick relief to the condition but may also help to limit the severity of the condition.

2.3 Reasons for self-medicating

Studies conducted in different countries have suggested different reasons for self-medication. Some of the reasons for self-medicating are such as lack of time to visit health facilities, an individual's previous experience of treating similar illnesses in the past, and the belief that by self-medicating, a person will have quick relief from the illness they are suffering from.

A study conducted in Saudi Arabia, aimed at exploring the behavior of the general population Self-medication, revealed that most people self-medicate because of lack of time to visit health facilities (Alghanim, 2011). For instance, individuals are in employment or those who run their own businesses may be too busy or may have challenges to ask for permission to visit health facilities when they are sick. Such people may choose to self-medicate because they believe that it is time-saving especially in cases where people wait for a long time before being attended to. Long waiting time on queues lead people to become unwilling to succumb to the inconvenience of visiting a health facility especially if they feel that they can manage the illness on their own.

The other reason why people self-medicate is the belief that such a practice will offer quick relief. (Badiger, 2014), argue that people may self-medicate because of the need for quick relief from minor illnesses. In such cases, people may self-medicate simply because they need immediate relief from the discomfort of disease.

Another reason for self-medicating is the seriousness of the condition. In another study conducted in Nigeria and aimed at determining the proportion of general patients who self-medicate, the drugs used, and the reasons why people self-medicate, the findings showed that people self-medicate because they may feel that their complaint is minor enough for self-care (Omolase, 2011). In this

Case, what determines whether a person consults a professional health worker or not is the perceived seriousness of their condition.

In a study conducted in Ethiopia and aimed at assessing the magnitude and factors which influence self-medication among Medical students, findings suggested that people self-medicate because they have had previous experience of treating similar illnesses (Abay and Amelo, 2010). In such cases, previous experience may be a factor in terms of self-medication. When an individual treat him or herself repeatedly, the chances are that in the long run, they will gain experience and become confident in managing similar illnesses in future.

Other than the above reasons, some people may self-medicate because they maybe ignorant of the dangers of such practices (Omolase, 2007). Ocan and others (2014) conducted a study with the aim of determining the prevalence and predictors of antimicrobial self-medication in post-conflict Northern Uganda and the findings indicated that some people self-medicate because they are ignorant about the consequences of such a practice. People who are ignorant of the negative consequences of self-medication may not be aware that there are dangers associated with such a practice.

2.4 Sources of medicine

People who self-mediate access drugs from different sources. In a study conducted in Ethiopia by Abay and Amelo in 2010, the findings revealed that 72% of the drugs were accessed from privately owned drug stores and these drugs were purchased without prescriptions. Another research conducted by Ocan (2014) in Uganda showed that people access leftover drugs from friends and relatives. In all these cases, it is clear that people access drugs for self-medication from different sources.

2.5 Factors associated with self-medication

There seem to be various factors associated with self-medication. An individual's education level, income, and employment status determines whether a person should self-medicate or not. In a study conducted by Salvaraj and others in 2014, the findings indicated that a person's income for instance is associated with self-medication. People who work and earn a regular income may decide to self-medicate because they may not want to lose income by spending time on lines at health facilities. According to Salvaraj (2014), the education level of a person is also associated with self-medication.

In the study conducted by Salvaraj, the educated were found to self-medicate less. The reason for this may be because the educated may only trust trained health professionals to handle and dispense drugs unlike people who work in Chemists who may not be well trained.

2.6 Research questions

. Do people self-medicate in Chelston Township in Lusaka?

. What are the reasons for self-medication in Chelston Township in Lusaka?

. How do people access drugs used for self-medication in Chelston Township in Lusaka?

. What factors are associated with self-medication in Chelston Township in Lusaka?

2.7 Objectives

2.7.1 General objective

(1) To investigate self-medication practices and associated factors in Chelston Township in Lusaka

2.7.2 Specific Objectives

(1) To establish whether people self-medicate in Chelston Township in Lusaka

(2) To determine the reasons for self-medication in Chelston, Lusaka

(3) To establish the sources of medicines used for self-medication in Chelston, Lusaka

(4) To establish factors associated with self-medication in Chelston Township in Lusaka

2.8 Identification of Variables, Measurement of Variables, Conceptual and Operational Definitions

Table 1: Identification of variables

INDEPENDENT VARIABLE	DEPENDENT VARIABLE
Sex	Self-medication
Education level	Self-medication
Income level	Self-medication
Employment status	Self-medication

CHAPTER THREE

METHODOLOGY

3.1 Study setting

The study was conducted in Chelston Township in Lusaka, in Zambia. This particular site was suitable for the study because it is made up of people from different socio-economic background. As such, the study location provided an opportunity to enroll participants onto the study from low, middle, and high socio-economic background.

3.2 Study design

This was a cross -sectional study design. A cross-sectional design was used because we wanted to have a snapshot of the self-medication practice in the study area at this particular time. A cross-sectional design was also used in order to identify and explain the factors which are associated with self-medication.

3.3 Study population

The population of interest in this study included male and female adults who were aged 18 years and above and were residents of Chelston Township in Lusaka. Chelston Township has 6,395 households with a population of 32,382 people who are aged 18 years and above (Central Statistical Office 2010 Census report). Out of this total number, 16,901 are females while 15,481 are males. Participants who consented to participate in the study were therefore enrolled onto the study. The exclusion criteria included age below 18 years, not being a permanent resident of Chelston Township as well as not consenting to the study.

3.4 Sample size

The sample size used in this study consisted of 422 male and female adult respondents. This sample size was picked based on the prediction of the sample size formula as shown below:

Sample size formula: $n = \frac{Z^2 \times p(1-p)}{\varepsilon^2}$

Where p= 50% (0.50%)

Z=1.96(95%)

ε =0.05 (precision)

$$= \frac{1.96^2 \times 0.50 (1-0.50)}{0.05^2}$$

$$= \frac{3.8416 \times 0.50 (0.5)}{0.0025}$$

$$= \frac{3.8416 \times 0.25}{0.0025}$$

$$= \frac{0.9604}{0.0025}$$

$$n = 384$$

Added 10% for non-response =384 +38 = 422

3.5 Sampling design

In this study, systematic random sampling was used to select participants from the population. Houses in the study area were assigned numbers starting with number one. A sampling fraction was then calculated. The lottery method was used to select the first house. The lottery method was also used to select the first participant who was aged above 18 years, was found at home at the time of the visit and consented to participate in the study. Thereafter, we selected every 15th house from the first house. A questionnaire was only administered to respondents aged above 18 years.

The sampling frame used in this study was the Central Statistical Office sampling frame for 2010.

The formula below was used to calculate the interval for selecting houses. The sampling interval was as follows:

Where n= Sample size

N = population size (households)

K= sampling interval

Formula:

$$K = \frac{N}{n} = \frac{6{,}395}{422}$$

$= 15^{th}$ house (interval)

3.6 Data collection

Data was collected using interviewer administered questionnaires. The questionnaires contained closed ended questions and were administered by the research assistants. The questionnaires consisted of questions on the sex, education level, employment status, and income of the participants. Further, the questionnaires comprised of questions on the sources of drugs, reasons for self-medication, commonly treated conditions, and commonly used drugs. Interviewer administered questionnaires was helpful especially for the respondents who were not able to read and write. Further, interviewer administered questionnaires also helped to reduce misinterpretation of questions by participants and this aided the researcher to collect clear responses. Data collection was done even in the evenings in order to capture those who work. Data was collected between 2nd September, 2015 and 30th November, 2015.

3.7 Data processing and analysis

After data was collected, questionnaires were checked for completeness in responses and also against inconsistencies in responses to questions. Data was analyzed using the statistical software package SPSS version 16.0. All statistical tests were at 5% significance level. The study used the logistic regression model and this was considered at $p < 0.05$. Logistic regression was used to find

the best fitting model which would describe the relationship between the dependent and independent variable.

3.8 Ethical consideration

Ethical clearance was sought at ERES before the study was conducted. The other ethical issue which was dealt with in this study was concerned with the enrollment of participants on the study. Anybody who participated in this study did so voluntarily without any form of coercion. This was done by seeking consent from participants before they were enrolled on the study. The participants were informed about the procedures to be used in the research and any risks that may be associated with the study were explained. The other ethical issue which may have arisen in this study involved confidentiality and anonymity. To deal with the problem of confidentiality and anonymity, identifying information of all the participants enrolled on this study was not made available to anyone who was not directly involved in the study.

One of the risks of this study is that the findings may lead to loss of business especially for people who own drug stores and sale prescription-only drugs without the input of professional health workers. This may be as a result of knowledge gained which may lead to a reduction in self-medication practices. The benefit of this study is that it may increase people's knowledge and awareness regarding the dangers of self-medication. An increase on knowledge regarding the dangers of self-medication may help change the behavior of people towards self-medication. The findings of this study may also add to the body of knowledge in the area of self-medication. Another benefit of this study is that a reduction in self-medication practices by the general public may help to reduce the development of drug resistant strains of germs.

3.9 Dissemination plan

The study findings will be published as an article in a peer reviewed journal. Hard copies of the final dissertation will be made available to the University of Zambia Library, Ministry of Health, and the Zambia Medicines Regulatory Authority. Dissemination to the local community will be done through community meetings.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.1 Results

4.1.1 Distribution of participants' demographic characteristics

The total number of participants enrolled on the study was 422 participants.

The findings in table 2 below showed that the majority (140) of the participants were aged above 39 years while the minority (61) of the participants was those in the age range 18 to 23 years. In addition, the findings showed that 265 (62.8%) of the participants were females while 157(37.2%) of the participants were males**.** Further, the findings showed that the biggest number (191) of the participants had attained tertiary level of education while the smallest number (15) of participants had not been to school. The findings also showed that 217 (51.4%) of participants were employed while 205(48.6%) of the participants were not employed. During the study,participants were asked to indicate their monthly income and the findings showed that the majority (64%) of the participants earn a monthly income of less than K 1,500 while the minority (7.3%) of the participants indicated that they earn between K1,500 and K2,500 per month.

Table 2: Participant's background characteristics (N=422)

Characteristics	Frequency	Percent
Age (years)		
18-23	61	14.5%
24-28	84	19.9%
29-33	67	15.8%
34-38	70	16.6%
Above 39	140	33.2%
Sex		
Males	157	37.2%
Females	265	62.8%
Educational level		
Not been to school	15	3.6%
Primary	47	11.2%
Secondary	169	40%
Tertiary	191	45.2%
Employment		
Yes	217	51.4%
No	205	48.6%
Income		
No income	188	44.5%
K1- K 1,499	75	17.7%
K 1,500 –K 2,500	33	7.8%
Above K 2,500	127	30%

4.1.2 Reasons for self-medication, sources of drugs, commonly used drugs, and commonly treated conditions

Participants who indicated that they self-medicate when they are sick, were asked to indicate the reasons for self-medicating. Various reasons were given for self-medicating. The findings in table 3 below showed that the majority (22.3%) of the participants self-medicate because they have had previous experience of treating similar illnesses while the minority of the participants (10%) gave other reasons for self-medicating. Participants were also asked to indicate the source of the medicines used for self-medication and the findings showed that most (41%) participants obtain medicines from private drug stores. A smaller percentage (4.5%) of the participants indicated that they obtain drugs for self-medication from relatives.

Participants who indicated that they self-medicate were further asked to indicate the type of drugs which they use to treat themselves when they are sick. The findings showed that 31.3% of the participants self-medicate using pain killers. The findings also showed that the second most commonly used medicines for self-medication were antibiotics (27.2%).

The study also investigated the kind of conditions which participants treat through self-medication. The findings showed that headache is the commonest (32.5%) condition which participants treat through self-medication. The findings further established that although headache was the most commonly treated condition, respiratory tract related infections such as coughs and sneezing were the second commonest (27%) condition participants treated using self-medication.

Table 3: Reasons for self-medication, sources of medicines, commonly used drugs, and commonly Treated conditions (N = 422)

Response	Frequency	Percentage
Reasons for self-medication		
Not applicable	102	24.2%
Lack of time to visit health facilities	57	13.5%
For quick relief	83	19.6%
Previous experience of treating similar illness	94	22.3%
Illness not serious enough to consult	44	10.4%
Other reasons	42	10%
Sources of medicines		
Not applicable	102	24.2%
Local store/Supermarket	55	13%
Private drug store	173	41%
From relatives	19	4.5%
From friends	20	4.7%
Other sources	53	12.6%
Commonly used medicines		
Not applicable	102	24.2%
Painkillers	132	31.3%
Antibiotics	115	27%
Antimalarial medicine	50	11.8%
Other medicine	23	5.5%
Commonly treated conditions		
Not applicable	102	24.2%
Headaches	137	32.5%
Respiratory tract related infections	114	27%
Diarheoal diseases	56	13.3%
Other conditions	13	3%

4.2 Bivariate analysis for association with self-medication

Participants were asked to indicate whether they self-medicate or not and table 4 below shows participants responses. The findings established that the majority (75.8%) of the participants self-medicate while the minority (24.2%) of the participants do not self-medicate. In addition, the findings showed that participants who were aged 39 years and above self-medicates more (34%) than any other age group. In addition, the findings showed that of the participants who self-medicate, females (65.9%) self-medicates more than males (34.1%). The findings also established that participants who had attained tertiary level of education (47.8%) self-medicates more than participants who had attained other levels of education. Further, the findings showed that the participants who were employed self-medicate more (54.4%) than participants who were unemployed (45.6%).

At 5% significance level, sex and employment status were significantly associated with self-medication, P-value 0.02 and 0.03 respectively [Table 4]

Table 4: Bivariate analysis for association with self-medication status (N = 422)

Variable	Yes Self-medication		No Self-medication		p-value
	N	%	N	%	
Age (years)					
18-23	44	13.8%	17	16.7%	0.53
24-28	60	18.8%	24	23.5%	
29-33	55	17.2%	12	11.8%	
34-38	52	16.2%	18	17.6%	
Above 39	109	34%	31	30.4%	
Sex					
Male	109	34.1%	48	46.6%	0.02
Female	211	65.9%	55	53.4%	
Education level					
Never been/Primary	41	12.8%	21	20.4%	0.09
Secondary	126	39.4%	43	41.7%	
Tertiary	153	47.8%	39	37.9%	
Employment status					
Yes	174	54.4%	43	41.7%	0.03
No	146	45.6%	60	58.3%	
Income					
No income	134	41.9%	54	52.4%	0.19
K 1- K 1,499	62	19.4%	13	12.6%	
K 1,500 – K 2,500	24	7.5%	9	8.7%	
Above K 2,500	100	31.3%	27	26.2%	

4.3 Logistic regression analysis

Compared to participants with primary level of education or no education, participants with tertiary level of education had on average 82% increased odds for self-medication [Odds ratio(OR) = 1.82,95% Confidence Interval (CI)=1.09-3.04, P-value =0.02].

Participants with Secondary level of education had on average 50% increased odds for self-medication but this was not statistically significant (OR=1.50, CI=0.95-2.38, P-value=0.08).
Females had on average 2 times increased odds for self-medication (OR=2.05, CI=1.37-3.09, P-value < 0.01).

Participants in employment had on average 85% increased odds for self-medication (OR=1.85, CI=1.17-2.93, P-value = 0.01) [Table 5].

Table 5: Logistic regression analysis predicting self-medication

Variable	Crude Odds Ratio (95% Confidence Interval)	Adjusted Odds Ratio (95% Confidence Interval)	P-value
Education			
Never been/Primary	1	1	
Secondary	2.93(2.07-4.14)	1.50(0.95-2.38)	0.08
Tertiary	3.92(2.76-5.78)	1.82(1.09-3.04)	0.02
Sex			
Male	1	1	
Female	3.84(2.85-5.16)	2.05(1.37-3.09)	0.01
Employment			
No	1	1	
Yes	1.91(1.66-2.21)	1.85(1.17-2.93)	0.01

CHAPTER FIVE

DISCUSSION

The purpose of this study was to establish whether people in the study location self-medicate or not, determine the reasons for self-medication, establish the sources of the medicines used in self-medication, and establish whether age, sex, education, employment status, and income are factors associated with self-medication. It was established that participants in the study location self-medicate and that they self-medicate because they have previous experience of treating similar illnesses. Further, it was established that participants obtain medicine for self-medication mainly from private drug stores. In addition, it was also established that although the most commonly used medicines for self-medication were painkillers, antibiotic use was also quiet high. The commonly treated condition was headaches. The logistic regression analysis performed demonstrated that there was a significant level of association between sex, employment, level of education and self-medication.

5.1 Self-medication practice

Seventy-Five point eight percent (75.8%) of the participants indicated that they treat themselves when they are sick. The fact that people in the study location self-medicate means that they treat common illnesses on their own without the input and supervision of trained health professionals. Secondly, the finding may also mean that participants treat themselves with medicines which may have not been approved by health professionals as being effective in treating specific illnesses as well as being harmless to human life.

There are a number of possible factors which may be contributing to self-medication in the study location. Some of the factors are such as the poor state of health care delivery system, shortages of essential drugs, low levels of key trained health personnel, and inadequate infrastructure.

The first factor which may be contributing to self-medication in the study location is the poor state of health care service delivery system in the public health facilities. When the health care delivery

system is poor, especially in non-fee paying facilities such as public health facilities, access to essential health care is affected (Salvaraj et al, 2014). In a case where the state of health care delivery is poor, members of the community may not find it necessary to go to these facilities as they already know that they may not get the required standard of service. In the end, people may choose alternative means of treating their illnesses and in most cases they may decide to treat themselves at home.

The other factor which may be contributing to self-medication is absence or shortages of essential medicines in health facilities. When people are sick, they go to health facilities with the hope of receiving complete care which also include receiving medicines. But in an event that a person visits a health facility and does not get medicine, it is natural that they will do everything possible to find an alternative source of drugs to relieve the pain and discomfort caused by disease. In many public health facilities, essential drugs are not always available. One of the causes of the shortages of medicines in public health facilities may be the large numbers of patients who seek medical services in these facilities. An increase in patient attendance levels at health facilities means that drugs run out quickly due to the increase in the demand for medical supplies. In a case where drugs are in short supply, people would rather obtain medicines from convenient and more reliable alternative sources than to go to these health facilities where they will not get any drugs.

The third factor which may be contributing to self-medication is the low numbers of key trained health personnel in health facilities. When the numbers of health personnel are not sufficient at a health facility, patients spend long periods of time without being attended to. If people who are sick cannot be attended to quickly, they again resort to treating themselves.

Congestion and long queues at health facilities is another factor which may force people to resort to self-medication. In most townships in Lusaka including Chelston, the population of people who seek health care services is higher than what the few available health facilities can manage to handle. Because of the congestion and long queues, a number of people feel discouraged to wait on the queues. Instead, some patients may choose other sources of health care services which may not only be convenient but also faster. In this case, people may therefore decide to treat themselves when they are sick.

Inadequate infrastructure may also contribute to self-medication especially when such facilities have to accommodate large numbers of patients. Although Chelston township has private clinics, the area only has one public health facility which does not charge medical fees. This means that most of the people who cannot afford to pay medical fees at the private clinics depend on this one government facility for their health care needs.

Another factor which may be contributing to self-medication is a weakness in the enforcement of regulations which deal with the handling and dispensing of drugs in Zambia especially in the private drug stores. In this case, it may mean that access to drugs even without prescription is so easy for people that they may even obtain drugs over the counter even if such drugs may require prescription. In addition, the fact that people self-medicate may also be a reflection of the poor attitude of members of society towards self-medication. Treating oneself without proper guidance from trained health professionals may lead to serious consequences ranging from overdose, under dose, and side effects. In extreme cases, people who self-medicate may even die. Members of society may therefore be self-medicating because they are ignorant of the dangers posed by self-medication. Community members may therefore be taking such a practice casually. The tendency to self-medicate may also be a reflection of the difficulties people with special conditions have to access health care services. For instance, people who suffer from conditions such as Sexually Transmitted Infections (STDs) or drug addicts may have problems to easily access medicines from health facilities and such, they prefer to self-medicate. In Zambia, people suffering from Sexually Transmitted Infections are in many cases asked to bring their partners before they can be treated. Such practices may discourage them from seeking health care services at public health facilities but instead, they may prefer to obtain medicines from other sources.

5.2 Reasons for self-medication

There were several reasons given by participants as to why they self-medicate when they are sick rather than consult health professionals. The most notable reason given was that participants had previous experience of treating similar illnesses. In this sense, it means that participants had practiced self-medication on more than one occasion.

Past experience of treating similar illnesses is a determinant factor in self-medication for a number of reasons. In many communities in the world, including Zambia, many people may suffer from recurrent episodes of a particular illness. When people suffer repeatedly from a particular illness, they come to know more about the condition. Once a person is given a drug for an illness for the first time and he or she recovers well, the temptation is to try and use past experience to use the same medicine to treat a similar episode of the illness or symptoms in future. Dependency on previous experience is very common especially for people who suffer from recurrent illnesses such as common cold, headaches and diarrhea. Past success in treating an illness creates a sense of confidence and increases someone's knowledge regarding which drugs to use to treat specific kinds of illnesses. In addition, past experiences of treating similar illnesses make people begin to know which drug is appropriate to relieve certain symptoms. In fact, with repeated success in treating similar illnesses, people do not only begin to have a basic understanding of minor illnesses but also develop some level of confidence in managing such illnesses to the point that they begin to feel that it may not be necessary to consult trained health personnel.

The second commonest reason given for self-medicating was the need for quick relief. When people are sick, they may have pain or discomfort in their bodies. People may resort to self-medicating as a means of getting better faster. Although pain relieving has some benefits, the practice may result in complications especially if an individual has no knowledge of what is causing the pain. Pain is symptom that there is an underlying problem which may require investigation by a trained health personnel and taking a pain killer without consulting a health professional may not only mask the symptom but may also lead to delays in seeking health care services. The other problem of treating oneself for the same of reducing pain is that one may end up over using pain killers and some of the pain killers may cause complications if taken repeatedly.

The other reason given for self-medicating was a lack of time to visit health facilities. This may particularly be true for those who are busy or those who work. Such groups of people may self-medicate because they may have difficulties to leave work and visit a health facility.

Other participants indicated that they self-medicate because of the belief that they illness they were suffering from was not serious enough to warrant consultation. This may be common practice for people who suffer from headaches and other minor complaints. The danger of self-medicating

because of the belief that the illness is not serious enough is that by the time a person may decide to consult a health professional, it may be too late. Such a practice may be dangerous especially for people who may not be knowledgeable enough about diseases.

5.3 Sources of medicines for self-medication

The present study investigated the sources of drugs which participants use to self-medicate. The largest percent of the drugs used in self-medication were obtained from private drug stores.

Members of society may obtain medicines for self-medication from private drug stores for a number of reasons. First of all, people may choose to obtain medicines from private drug stores because they may find it cheaper to do. At private drug stores, people are not charged consultation and laboratory fees. If a person decides to consult a Pharmacist on which drug would best treat the condition they are suffering from, no consultation will be charged. Instead, the customer will only pay for the drug. As such, when an individual obtains drugs from a drug store, they save money which should ideally been paid for consultation and other charges such as laboratory fees. In the case of Zambia, private drug stores may seem more appealing as a source of drugs because private drug stores are closer to community members than are public health facilities. This means that people find it convenient and easy to access drugs from private drug stores when they are sick. In addition, the health care system in Zambia may have shortfalls such as lack of drugs, a shortage of health personnel, and poor attitude by health professionals, which all may contribute to the practice of self-medication. The above mentioned challenges may influence individuals to prefer to obtain medicines from private drug stores where they are assured of quick service, availability of drugs, and decent reception from the owners of the drug stores rather than go to health facilities.

The findings of the present study also established that apart from private drug stores, the second commonest source of medicines was local supermarket. Members may find it easy to obtain drugs from local supermarkets because these are easy sources of drugs. Most supermarkets are found within the community where people live and as such they find it easy to go a nearby local market

and buy medicines when they are sick. The danger of allowing local supermarkets sale medicine is that they may end up selling even drugs which require prescription.

Some participants indicated that they obtain medicines for self-medication from relatives and friends. These drugs may be leftover drugs from relatives. Although it may be cheaper and easier to obtain drugs from friends and relatives, such a practice may mean that drugs are sourced from people who themselves have not completed taking a full course of drugs. There is is a danger in people sharing medicine because they end up not only sharing wrong drugs but also sharing inadequate amounts of medicines which should be discouraged.

5.4 Commonly used medicines

The most commonly used medicine by the participants in the study location was pain killers (analgesics).

In the present study, pain killers may be the commonly used medicine for various reasons. To start with, most diseases present with pain. Pain causes discomfort which in most cases requires painkillers for it to reduce or to go. This therefore may explain why pain killers were the most used medicines by the participants in the study location. Secondly, pain killers may have commonly been used due to the fact that a pain killer can easily be bought over the counter without much restriction. In Zambia, pain killers are one of the categories of drugs which can be bought over the counter without prescription. This therefore means that whenever a person has pain, they can easily go to a private drug store and purchase pain killers with easy.

The second most commonly used medicines were antibiotics. In Zambia, antibiotics are drugs which one can only buy with a prescription. Self-medicating with antibiotics is a dangerous practice for a number of reasons. One of the dangers of unguided use of antibiotics is that the practice may lead to drug resistance. Antibiotics are supposed to be taken with clear instructions and should be used to treat conditions which have been diagnosed by trained health professionals. The other danger of self-medicating with antibiotics without proper guidance from trained health professionals is that such a practice may result in undesirable side effects. It therefore necessary that the use of antibiotics has to be done under the guidance of trained health professionals.

Antimalarials were the third commonly used drugs for self-medication. The use of antimalarial medicine without the input of health personnel poses a big danger especially in Zambia where resistance to Chloroquine has already been recorded.

5.5 Commonly treated conditions

The present study established that the commonly treated symptoms were pain related such as headaches.

In the present study, headache may be the commonest treated condition due to a number of reasons. In both minor and major diseases, headache is generally a common symptom presented by people. In Zambia for instance, conditions such as Malaria, Respiratory tract infections, dental conditions, and even ear conditions all cause some form of headache. This may therefore be the reason why headache was the common condition treated through self-medication.

Although headaches were the commonest conditions treated through self-medication, respiratory tract related conditions were the second commonest conditions being treated through self-medication. In order to treat respiratory tract infections adequately, it is necessary to consult trained health professionals as these conditions may not only be serious in nature but may also require the use of more specialized drugs such as antibiotics. It is therefore dangerous for individuals to treat these conditions on their own without consulting health professionals.

The third commonest condition treated through self-medication was diarrheal diseases. Diarrheal diseases require special care especially if the condition is serious. The problem of treating such conditions without the input of health professionals is that once complications set in, a person may easily die.

5.6 Inclination to self-medication

The findings of the present study revealed that females are more inclined to self-medicate than males. Females may be inclined to self-medicate because they are the ones who have the responsibility of taking care of the sick thereby being exposed to minor infections. The exposure to

infections and the presence of left over drugs may be contributing factors for females to self-medicate.

The present study also found out that those participants who are 39 years and above self-medicated more than other participants of younger ages. The reason for this may be because above 39 years of age, people tend to suffer from many minor illnesses. At this age, the immune system may be getting weaker hence the frequent attacks of different illnesses. The other reason why participants aged 39 years and above may resort to self-medication when they are sick is that at this age, people have many responsibilities both at home and at work. Leaving work and going to health facilities each time a person is sick may be difficult and may be seen a s time wasting hence the tendency to self-medicate and get quick relief. The present findings are different from the study conducted in Kenya where the findings indicated that participants of younger age are more inclined to self-medicate. The difference may be because the health status of younger participants in Masaba's Gemisa location may be poorer than participants in Lusaka's Chelston Township.

In this study, the educated were found to self-medicate more than the uneducated. This may be because the educated have knowledge regarding diseases and medicines to be used for self-medication. The educated, especially those who have gone beyond secondary level have access to internet, books, and even adverts on diseases and medicines. From these sources, the educated gain vital information and are able to relate their symptoms to specific diseases. From the same sources of information, the educated are able to search for drugs which can help treat the conditions they may be suffering from.

5.7 Association between age, sex, level of education, employment status, income, and self-medication

This study was interested in establishing whether there was an association between age, sex, employment status, income, level of education and self-medication.

The logistic regression test results ($P < 0.05$) established that there was a significant association between sex, education, employment status and self-medication.

The logistics regression analysis test results ($P < 0.05$) indicated that there is a significant association between a person's level of education and self-medication. Among other reasons, one reason why educated people may be inclined to self-medicate is that in some cases, educated people tend not to be patient enough to undergo the inconvenience of visiting public health facilities and wait on the queue especially for illnesses which they feel that they can treat on their own. In this era of where knowledge is abundant on the internet and with plenty of medical books which the educated can easily read and gain an understanding of the illness they are suffering from, the educated would rather treat themselves when they are sick rather than spend time on the queue. Another reason why the educated may be inclined to self-medicating is that with so any advertisement on drugs, the educated are able to know which drugs can treat certain illnesses. For these reasons, it is therefore expected that the higher the education level of the person the less likely it is that they will self-medicate since they understand the dangers of self-medication.

The logistic regression analysis showed that there was a significant association between employment status and self-medication. Employment status may be associated with self-medication due to a number of reasons. Those individuals who are in employment may first of all have challenges to find time to visit health facilities when they are sick. Secondly, people who are employed may self-medicate because some employers may not easily grant permission to their employees to visit health facilities when they are sick as a result these people may resort to self-medicating.

The logistic regression results also indicated an association between sex and self-medication. Sex may be associated with self-medication because of the nature of diseases. For instance, women in most communities have the responsibility of looking after the sick as such, they may have leftover drugs at their disposal and when they are sick, they easily use these leftover drugs to self-medicate. The other reason why women may self-medicate is that in the process of taking care of the sick, they may contract a number of infections themselves. In order to treat these infections, women may resort to self-medicate. Another reason why women in Zambia may self-medicate is that unlike in other countries where women are not free to move alone and buy these drugs, women in Zambia have the freedom to go to drug stores and buy medicine when they are sick without restriction from their spouses.

5.8 Strengths of the study

This study has uncovered a significant rate of self-medication in Chelston Township in Lusaka City in Zambia. The fact that 75.8% of the participants self-medicate should attract the attention of policy-makers to acknowledge that self-medication is a real problem in Chelston Township. Further, the findings of this study may motivate further research on the role of self-medication in health care delivery system in Zambia. In addition, the findings of this study may help refocus health policies so that access to health care services, especially drug accessibility is improved especially in the public sector. The findings of the study may also help health educators to put more emphasis on the dangers posed by self-medication.

3.9 Study limitations

This research study had some unforeseen limitations. To start with, the study was confined to Chelston Township in Lusaka and as such, the findings may only be generalized to the residents of the study location or other urban townships with similar socio-economic background. To generalize the research findings to other townships outside Lusaka may be difficult due to the fact that there may be a number of cultural, economic and social differences which may exist among townships in Zambia and these differences may influence the findings of the study. Further, the sample size was not nationally representative and therefore the findings could not be generalized to the rest of the country. The second possible limitation of this study may have arisen from the nature of this study. Since this was a cross-sectional, the study may have precluded the assessment of self-medication by seasonal patterns.

5.10 Conclusion

Self –medication practice is high in Chelston Township in Lusaka. The practice differs considerably with a number of socio-demographic factors such as sex, education, and employment status of the people. Since there seems to be an increasing level of drug resistant micro-organisms to antibiotics world-wide, the findings have a major public health policy implication for a country like Zambia. Antibiotics are expensive drugs and the development of drug resistant strains of micro-organisms would be expensive for Zambia.

5.11 Recommendations

The following are the recommendations:

1. The Ministry of Health (MOH) needs to improve availability of drugs and other health care services to deter people from seeking alternative sources of drugs
2. The Zambia Medicines Regulatory Authority (ZAMRA) needs to strengthen regulation on the operations of private drug stores.
3. Individuals need to be educated on the dangers of self-medication.
4. A larger study to assess the prevalence of self-medication may be required.

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APPENDICES

Appendix One (1): English Information Sheet

Research Topic: Factors Associated With Self-Medication In Lusaka. A Cross-Sectional Study of Chelston Township

Self-medication is a public health problem which has some negative consequences on the lives of people. The tendency to self-medicate may among other problems lead to the development of drug resistant strains of micro-organisms. The development of drug resistant micro-organism not only makes it difficult for health professionals to treat diseases but also increases government and individual expenditure as new drugs have to be introduced.

The main objective of this study is to establish the factors associated with self-medication in Chelston Township in Lusaka. The reason you are being requested to participate in this study is that your responses may help the researcher to establish whether people self-medicate, determine the reasons for self-medication, find out the sources of drugs, and also establish the factors associated with self-medication. Your responses may also help to find solutions to the problem of self-medication. Kindly read this form and understand its contents before agreeing to participate in this study. Ask any questions you may have before you sign this form.

What the Study is about

The purpose of conducting this study is to establish whether age, sex, education, and income are associated with self-medication. In addition, the study also intends to find out the reason for self-medication and establish the sources of drugs. In order for you to participate in the study, you must be aged 18 years and above.

What you will be asked to do

If you agree to participate in this study, the research assistants will interview you. The interview will involve questions concerning your age, your employment status, your educational level, your income level, whether you self-medicate or not, the reasons for self-medicating, and how you access the medicines. The interview may not take more than 30 minutes.

Risks and benefits

In this study, there is a potential risk that you may feel uncomfortable with some sensitive questions concerning your occupation and your income.

We have to mention that there are no benefits to you as an individual. The likely benefit which may be to the whole community is that the findings may enable the researcher to come up with solutions to reduce self-medication as a public health problem.

Compensation

There is no any form of compensation to be given to anybody who will participate in this study.

Confidentiality

Any answer which you will give will be kept confidential. Any records generated from this study will be kept confidential and only researchers will have access to them. In an event that the report from this study is made public, any information which may make it possible for you to be identified will not be included.

Participation

Participation in this study is voluntary. In case you decide not to participate in this study, you are free to refuse to participate in the study and there will be no penalties to you for deciding not to participate in the study. If you decide to participate; you are completely free to withdraw from participating at any time. If there is any question you may feel that it is personal, you are free not to answer it.

Questions/clarifications

The researcher conducting this study is a student from the University of Zambia, School of Medicine. In case you have any questions or are seeking clarification, you may contact the individuals and institutions listed below. The reason you may contact ERES is that ERES has been mandated by law to ensure that research is carried out in an ethical way. ERES ensures that the rights of a participant are taken care of before a study can be carried out. Furthermore, ERES will also answer and address your ethical concerns regarding how the study has been conducted.

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APPENDIX TWO (2): PEPALA LA UTHENGA WA CHIDZIWITSO

(NYANJA INFORMATION SHEET)

MUTU WA KAUNDULA: ZINTHU ZIMENE ZIMALENGETSA KUTI ANTHU AZIDZIPATSA MANKHWALA OKHA MU M'ZINDA WA LUSAKA, ZAMBIA. KAUNDULA WOCHITIKIRA MUKOMBONI YA CHELSTON

Kudzipatsa mankhwala ndi bvuto ya zaumoyo yomwe imadzetsa bvuto pa umoyo wa anthu. Khalidwe ya kudzipatsa mankhwala ingabweretse zobvuta zochuluka. Zina mwa izo ndi kutindira kwa kalombo kodzetsa matenda mthupi ku mankhwala. Bvutoli la kutindira kwa kalombo ku mankhwala kumapangitsa kuti adotolo achipeze chobvuta kuchilitsa matenda mthupi mwa munthu komanso ndi chinthu chomwe chifunika ndalama zochuluka chifukwa chakuti mankhawala atsopano ayenera kuperekedwa kwa munthuyo.

Cholinga cheni-cheni cha kaundula uyu ndi kufuna kukhazikitsa kapena kufufuza mabvuto yomwe yamadza kamba ka kudzipatsa mankhwala popanda uphungu wa adotolo mkomboni ya chelstone muno mu mzinda wa Lusaka. Chifukwa chomwe mukufunsidwira kuti mutengeko mbali mkaundula uyu ndi chakuti mayankho yanu yadzathandiza anthu ochita kafukufuku kudziwa kapena anthu amadzipatsa okha mankhwala, kukhazikitsa zifukwa zomwe amadzipatsira mankhwala, kudziwa komwe amatenga mankwala komanso kufufuza mabvuto omwe amakhalapo ngati munthu akudzipatsa yekha mankhwala. Mayankho yanu yangathandizenso kupeza njira zoyenera zomwe zingathandize kuthetsa bvutoli la kudzipatsa mankhwala popanda kufunsa uphungu wa adotolo. Chonde werengani chipepalachi ndi kumvetsetsa za mkati mwake pomwe mukalibe kubvomera kuti mutengeko mbali mkaundulayu. Funsani funso iliyonse mungakhale nayo pomwe mukalibe kusaina pepalali.

CHOLINGA CHA KAUNDULAYU

Cholinga cha kaundulayu ndi kupeza kapena msinkhu wa munthu, chibadwidwe chake (mkazi kapena mwamuna), muyeso wa maphunziro kapena ndalama zomwe apata ndi zomwe zimapangitsa kuti munthu ayambe kudzipatsa mankhwala. Kuonjezapo, kaundulayu ufuna kupeza zifukwa zomwe anthu amadzipatsira mankhwala ndi kupeza komwe amatenga mankhwalawa. Kuti mutengeko mbali mkaundulayu muyenera kukhala ndi zaka zosachepekera pa 18 ndi kupyolapo.

CHOMWE MUDZAPEMPHEDWA KUCHITA

Ngati mwabvomera kutengako mbali, anthu omwe akuthandiza kuchita kaundulayu adzayamba kulankhula nanu. Kulankhulana kwanuku kudzakhala ndi mafunso omwe adzakhudza pa zaka zanu za kubadwa, nchito yomwe mugwira, muyeso wanu wa maphunziro, muyeso wa zopata zanu za panchito, ngati mumadzipatsa mwekha mankhwala kapena ai, zifukwa zomwe mumadzipatsira nokha mankhwala ndi momwe mumapezera mankhwala amene mumadzipatsa. Kukambirana kwanuku sikudzatenga mphindi zopitirira pa theka la ola limodzi.

ZIOPSEZO NDI PHINDU

Mu kaundulayu, pali chiopsezo chakuti simungakhale omasuka kuyankha mafunso ena monga omwe akhudza pa nchito yomwe mugwira komanso ndalama zomwe mupata pa nchitoyo.
Tafotokoza kuti palibe phindu yomwe inu mudzapatapo pa mwekha. Phindu yomwe mungapeze ndi yakuti zotuluka pa kaundulayu zidzathandiza anthu omwe akuchita kaundula kupeza njira zomwe zitha kuchepetsa bvuto la kudzipatsa mankhwala popanda kufunsa anthu a nchito za umoyo.

MALIPIRO

Palibe malipiro omwe adzapatsidwa kwa aliyense yemwe atengako mbali mu kaundulayu.

KUSUNGA CHINSINSI

Yankho ina iliyonse yomwe idzaperekedwa idzasungidwa mwa chinsinsi. Zolembedwa zilizonse zomwe zidzatuluka mu kaundulayu zidzadziwika ndi munthu ochita kaundula basi. Ngati zotuluka za kaundulayu zasindikizidwa ndi kuperekedwa ku anthu, ndiyekuti uthenga ulionse omwe ungapangitse kuti inu mudziwike sudzaikidwa mkati mwake.

KUGWAPO

Kugwapo kwanu mu kaundulayu ndi kwa ulele kopanda malipiro. Ngati mwaganiza kuti musatengeko mbali mukaundulayu, ndinu omasuka kukana kutengako mbali ndipo palibe bvuto yomwe ingakutsateni pokana kutengako mbali. Ngati mwaganiza kuti mutengeko mbali, ndinu omasukanso kuleka pa nthawi ina iliyonse. Ngati pali funso iliyonse yomwe muona kuti ikhudza inu, ndinunso omasuka kuileka osaiyankha funsolo.

MAFUSNO/KUMASULIRA

Munthu yemwe akuchita kaundula umeneu ndi mphunzi ochokera pa sukulu la pa mwamba la ukachenjede la university of Zambia, sukulu losulirako adotolo. Ngati muli ndi mafunso kapena mufuna kumasulilidwa pa zina zilizonse, mungathe kutumila munthu ochita kaundula kapena mutha kutumira sukulu lomwe latchulidwa pamwambapa. Chifukwa chomwe mungatumile kabungwe ka ERES ndi chakuti ERES yapatsidwa danga ndi lamulo lopatsa chilolezo kwa aliyense yemwe akufuna kuchita kafukufuku mdzikoli la Zambia. Bungwe la ERES ionetsetsa kuti madanga ya anthu omwe agwapo pa kafukufuku otere yatetezedwa pomwe kafukufuku ukalibe kuyambika. Kuonjezapo, bungwe ya ERES idzayankhanso ndi kuyang'ana pa momwe kafukufuku ukuchitidwira popanda kuphwanya ufulu wa umunthu wanu. Ngati muli ndi mafunso ena alionse, kambani ndi:

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Appendix three (3): English consent form

Research topic: factors associated with self-medication in Lusaka. A cross-sectional study of Chelston Township

The purpose of this study has been explained to me and questions have been answered. I now understand the purpose, risks, benefits, discomforts, and confidentiality of the study.

I also understand that should I decide to participate in this study, I am at liberty to withdraw at any time without giving any explanation to anyone. I further understand that I am participating in this study voluntarily.

I …… (Names)

Agree that I take part in this study

Participant's Signature/thumb print……...Date……...

Researcher's signature……Date…….

Note: Participants are free not to answer any question which they feel is personal.

Appendix four (4): Chilolezomu Chinyanja

MUTU WA KAUNDULA: ZINTHU ZOMWE ZIMALENGETSA KUTI ANTHU AZIDZIPATSA OKHA MANKHWALA MU M'ZINDA WA LUSAKA, ZAMBIA. KAUNDULA OCHITIKIRA MUKOMBONI YA CHELSTON

Cholinga cha kafukufuku uyu mwandimasulira ndiponso mafunso onse omwe ndinafunsa yayankhidwa. Tsopano ndamvetsa cholinga,uipa, ubwino, ndiponso chinsinsi cha kafukufuku uyu.

Ndamvetsanso kuti ngati ndidzatengako mbali pa kafukufuku uyu, ndine omasuka ulekautengako mbali mu kafukufuku uyu nthawi iliyonse popanda ulonjeza munthu alionse.Ndamvetsanso kuti ndidzatengako mbali mu kafukufuku uyu modzifunira.

Ine…….... (Dzina)

Ndavomerakutengakombali mu kafukufukuuyu.

Ndasaina(Otengakombali)……Tsiku……

Sinaniapa (ofufuza)……. Tsiku…….

Appendix five (5): scheduled structured questionnaire

QUESTIONNAIRE no……

THE UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

RESEARCH TOPIC: FACTORS ASSOCIATED WITH SELF-MEDICATION IN LUSAKA. A CROSS-SECTIONAL STUDY OF CHELSTON TOWNSHIP

SECTION A: BACKGROUND INFORMATION

NO	Question	Response Code		Official use only
Q 1	What is your age?	(1) 18-23 years (2) 24-28 years (3) 29-33 years (4) 34-38 years (5) Above 39 years	*(circle one)* 1 2 3 4 5	☐ ☐ ☐ ☐ ☐
Q 2	What is your sex?	(1) Male (2) Female	*(circle one)* 1 2	☐ ☐

SECTION B: SOCIO-ECONOMIC STATUS

Q 3	What is your education level?	Have not been to school……1 Primary level……..2 Secondary level……..3 Tertiary level……..4 Post Graduate level or above……5	*(circle one)* **1** **2** **3** **4** **5**	☐ ☐ ☐ ☐ ☐
Q4	Are you currently working?	(1) Yes (2) No	*(circle one)* **1** **2**	☐ ☐
Q5	If yes, what is your occupation?	……..		
Q 6	If no, you are a:	Student…… 1 Housewife……2 Unemployed…….3 Retired……..4 Other (specify)…….5	*(circle one)* **1** **2** **3**	☐ ☐ ☐ ☐

					4 **5**	
Q7	What is your monthly income?		Less than K1,500	K1,500-K2,500	**Above K2,500**	
						☐
						☐
						☐

SECTION C: KNOWLEDGE

Q 8	Do you treat yourself (self-medicate) when you are sick? *Note: Tick one response* If no, go to question 10	(1) Yes (2) No	*(circle one)* 1 2	☐ ☐
Q 9	If yes, when did you last treat yourself (self-medicate)?	Less than 2 weeks……..1 2 weeks – 1 month…….2 1-6 months……..3 More than 6 months……4	***(circle one)*** 1 2 3 4	☐

			(Circle one)	
Q10	What is the reason for self-medicating?	Lack of time to visit a health facility……..1 For quick relief…….2 I have previous experience of treating similar illness……3 Illness was not serious enough to warrant consultation…….4 Other reasons (specify)……	1 2 3 4	☐ ☐ ☐ ☐
Q 11	What kind of drugs do you buy for self-medication?	Pain killers…….1 Anti-biotic…….2 Anti-malaria……...3 Other (specify)……. 4	(circle one) 1 2 3 4	☐ ☐ ☐ ☐
Q	How severe are the	Very severe……1 Severe…….2	(circle one) 1	☐

12	conditions you treat using self- medication?	Moderate……3 Less severe……..4	2 3 4	☐
Q 13	Are there any consequences of self-medication?	(1) Yes (2) No	*(circle one)* 1 2	☐
Q 14	If yes, which one are you aware of?	…….. ……		
Q 15	Where did you get the medicines from (tick all applicable)?	local store /supermarket…….1 Private drug Store……2 From relatives…….3 From friends……...4 other sources (Specify)…….	(circle one) 1 2 3 4	☐ ☐ ☐ ☐

SECTION D: ATTITUDE

Q 16	What kind of reception do you receive where you get drugs from?	Very good……...1 Good……...2 Fair……3 Bad……4	(circle one) 1 2 3 4	☐ ☐ ☐ ☐
Q 17	Does the reception given to you by the vendors encourage you to Self-medicate?	(1) Yes (2) No	*(circle one)* 1 2	☐ ☐
Q18	Do the vendors resist selling drugs to you without Prescription?	(1) Yes (2) No	*(circle one)* 1 2	
Q19	Is self-medication good?	(1) Yes	*(circle one)* 1	☐

		(2) No	2	
Q 20	If yes, how is self-medication good?	Saves time……...1 Saves consultation fee...2 gives me quick relief….3 Other (specify) ……4	(circle one) 1 2 3 4	☐ ☐ ☐

Appendix six (6): Nyanja questionnaire

STRUCTURED SCHEDULED QUESTIONNAIRE no…….

THE UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

MUTU WA KAUNDULA: ZINTHU ZOMWE ZIGWIRIZANA NDI KUDZIPATSA MANKHWALA MU MZINDA WA LUSAKA. KAFUKU-FUKU OCHITIKIRA MU KOMBONI YA CHELSTONE.

CHIGAWO CHOYAMBA: ZA MBIRI YANU

NO	MAFUNSO	MAYANKHO		Official use only
Q 1	Muli ndi zaka zingati?	(1) 18-23 years (2) 24-28 years (3) 29-33 years (4) 34-38 years (5) kupyola 39 years	*(circle one)* 1 2 3 4 5	☐ ☐ ☐ ☐ ☐
Q 2	Kodi ndinu mwamuna kapena mkazi?	(1) Mwamuna (2) Mkazi	*(circle one)* 1 2	☐ ☐

CHIGAWO CHA CHIWIRI: ZA CHUMA

Q 3	Kodi muyeso wanu wamaphunziro ndi otani?	Sindinaphunzireko…….1 Primary chabe……2 Secondary chabe……3 Ndinafikaku College……..4 Ndinachita maphunziro yaukachenjede apamwamba……..5			*(circle one)* **1** **2** **3** **4** **5**	☐ ☐ ☐ ☐ ☐
Q4	Kodi mukugwira nchito palipano?	(1) inde (2) ai			***(circle one)*** **1** **2**	☐ ☐
Q5	Ngati yankho yanu ndi inde,mukugwira nchito yotani?	……..				
Q 6	Ngati ai, mukuchitanji?	Mwana wa sikulu……1 Mkazi wa panyumba……..2 Sindigwira nchito……3 Ndinapuma nchito…….4 zina (fotokozani)……..			*(circle one)* **1** **2** **3** **4**	☐ ☐ ☐ ☐
Q7	Kodimumapatandala mazingati pa mwezi?		Zochepekera K1,500	K1,500 - K2,500	**Above K2,500**	
						☐
						☐
						☐

GAWO LA CHITATU: KUDZIWA NDI MCHITIDWE

Q 8	Kodi mumadzipatsa nokha mankhwala mukadwala? *Chonde sankhani yanhko limodzi chabe* Ngati ai, pitani kufunso 10	(1) Inde (2) ai	*(circle one)* 1 2	☐ ☐
Q 9	Ngati yankho ndi inde,papita nthawi yotani kuchoka pomwe munadzipatsa mankwala?	Milungu iwiri yapita……..1 Pakati pa milungu iwiri ndi mwezi…2 Pakati pa mwezi ndi minyezi isanu ndi umodzi……..3 Kupyola minyezi isanu ndi umodzi……4	*(circle one)* 1 2 3 4	☐ ☐ ☐ ☐

			(circle one)	
Q 10	Nchifukwa chiyani mumadzipatsa nokha mankhwala?	Kusowa nthawi yopita ku Chipatala…….1 Kufuna kupola mwa change……2 Ndinadzichizapo matenda otere kale…….3 anali matenda aang'ono……..4 Zifukwa zina……	1 2 3 4	

Q11	Ndi mankhwala otani omwe mumagula omwe mumadzipatsa mwekha?	Mankhwala oletsa zowawa……1 Mankhwala ophela tudoyo…….2 Mankhwala oletsa malungo…….3 Zina (fotokozani)…… ……..	(circle one) 1 2 3	☐ ☐ ☐
Q12	Ndi matenda otani omwe mumachiritsa kugwiritsa nchito njira yodzipatsa mwekha mankhwala?	Akulu kwambiri……1 Akulu……..2 Akulu pang'ono..3 Ochepa……4	(circle one) 1 2 3 4	☐ ☐ ☐ ☐
Q 13	Kodi pali zobvuta zomwe zimadza kamba kakudzipatsa mankhwala?	(1) inde (2) ai	***(circle one)*** **1** **2**	☐ ☐

Q 14	Ngati zilipo, ndizotani Zomwe mudziwa?	…… ……		
Q 15	Munatenga kuti mankhwala omwe munagwiritsa nchito?	Ku sitolo……1 Kusitolo komwe agulitsa Mankhwala……2 kwa abale……...3 kwa a bwenzi……4 Kwina kwache…….	*(circle one)* **1** **2** **3** **4**	☐ ☐ ☐ ☐

CHIGAWO CHA CHINAI: MCHITIDWE

Q 16	Kodi amakulandirani motani komwe mumatenga mankhwala omwe mugwiritsa nchito?	Bwino kwambiri…….1 Bwino……..2 Bwino telo……..3 Satilandira bwino…...4	*(circle one)* 1 2 3 4	☐ ☐ ☐ ☐
Q 17	Kodi malandiridwe yomwe mumalandira ngati mugula mankhwala yamakulimbikitsani kudzipatsa mankhwala?	(1) inde (2) ai	*(circle one)* 1 2	☐
Q18	Kodi mumagula mankhwala kopanda muyeso?	(1) inde (2) ai	*(circle one)* 1 2	☐
Q19	Kodi ndibwino kudzipatsa mankhwala?	(1) inde (2) ai	*(circle one)* 1 2	☐

Q 20	Ngati ndichabwino, ubwino wake ndi otani?	sinataya nthawi…….1 sindi ononga ndalama zofunsira akatswiri……2 ndimapola mwamusanga……...3 Zina (Fotokozani)…….. …….	(circle one) 1 2 3	