

**ASSESSMENT OF SELF-MEDICATION AMONG ADULTS IN
UGANDAN COMMUNITIES IN: A CASE STUDY IN MAKINDYE
DIVISION-KAMPALA**

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DECLARATION

I, **Joseph Zziwa**, declare that this research dissertation submitted as partial fulfilment for the award of Master's Degree in Public Health of Clarke International University is my original work. This dissertation has not formed the basis for the award of any degree, associateship, fellowship by any student or university

Signature: _____

Date: _____

APPROVAL

This is to declare that this research dissertation has been written under my supervision is ready to be submitted to the University.

Professor John Charles Okiria

Signature: 

Date: **18th February 2022**

DEDICATION

I dedicate this book to my family especially my wife Mrs Ninah Bayiga Zziwa and my children Jesse Gabriel Zziwa and Jordan Kyeyune Zziwa who have endured me through this journey. This work also goes as a dedication to my workmates especially Dr Ibrahim Ssentambule and my coursemates in particular Ms Ejang Racheal and Ms Judith Drazidio for whom this has been a trying journey.

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LIST OF ABBREVIATIONS/ACRONYMS

CIU	Clarke International University
CIU-REC	Clarke International University Ethics and Research Committee
COVID-19	Coronavirus Disease of 2019
FDG	Focus Group Discussion(s)
KII	Key Informant Interviews
MoH	Ministry of Health
NDA	National Drug Authority
PSU	Pharmaceutical Society of Uganda
UN	United Nations
WHO	World Health Organization

OPERATIONAL DEFINITIONS

Self-medication: is 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 disease or symptoms (WHO, 2000a).

Medicine: is any substance or preparation used or intended to be used for internal or external application to the human or animal body either in the treatment or prevention of disease or for improving physiological functions, or for agricultural or industrial purposes;

A valid prescription is a physician's order for the preparation and administration of a drug or device for a patient (Patrick, 2021). A valid prescription should be in indelible writing, dated and signed with the usual signature by the prescriber. It should have the name, qualification and address of the person signing it and the name and address of the patient among other details.

ABSTRACT

Introduction: This study assessed self-medication practices and its determinants among communities in Makindye-Kampala capital city. The main objective of the study was to assess self-medication practices among adults living in Makindye Division, Kampala District. The specific objectives were (i) To assess individual factors that influence self-medication practices among communities in Makindye Division, Kampala District, (ii) To assess socioeconomic factors that influence self-medication among communities in Makindye Division, Kampala District and (iii) To determine health system-related factors which influence to self-medication among communities in Makindye Division, Kampala District.

Methods: A cross-sectional study was conducted among a sample of 436 residents in selected parishes of Makindye division, Kampala district from November to December 2021. The study employed both quantitative and qualitative collection methods. Self-medication was defined as the use or purchase of drugs without a prescription from a qualified medical professional. Data on individual, socioeconomic and health system factors were collected using a pretested questionnaire and analyzed using logistic regression at 5% statistical significance level using STATA version 15. Qualitative data were inductively analyzed and themed by the study objective.

Results: A total of 436 were enrolled in the study. The participants had a mean age of 33.07(\pm 11.61) years and an age range of 18 - 66 years. The majority were females (53.21%) and most were unmarried (66.74%). Self-medication was more common among participants who rented their household premises (aOR 3.49 95% CI 1.76 - 6.89), didn't think a qualified medical provider's prescription was needed before taking any medication (aOR 4.11 95% CI 1.88 - 9.00) and those who were managed under community-based DOTS (aOR 1.91, 95% CI 1.25-2.92) and the practice of self-medication to prevent COVID-19 (aOR 11.48, 95% CI 3.36 - 39.25). Individual, socioeconomic and health-system related factors influenced self-medication.

Conclusion: The study found a high prevalence of self-medication among adults in Makindye division practised self-medication. To reduce self-medication, local councils, the Ministry of Health and the National Drug Authority should continually enforce standards and increase community awareness towards the importance of prescriptions and the dangers of self-medication.

CHAPTER ONE: INTRODUCTION

1.0 Introduction

Self-medication is 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 disease or symptoms (WHO, 2000a). The use of medicines is one of the most critical innovations in the provision of healthcare globally and has led to the saving of millions of lives globally. The availability and provision of medicines are essential for the effectiveness of any healthcare provision system, at no time has this become clearer than during the current global events concerning COVID-19 (WHO, 2020). Ensuring universal access to essential medicine is a fundamental human right that is pivotal to the attainment of the Sustainable Development Goals (SDGs), particular SDG 3: Ensure Healthy Lives and Promote Well-Being for All at All Ages (UN, 2021). However, with the increase in the development and availability of medicines (WHO, 2016), so has the increase been noted in self-medication rates globally (WHO, 2000b, 2012b, 2016).

Globally, economic, political and cultural factors have been shown to influence self-medication with varying rates observed by region and country (WHO, 2000a). Self-medication has become a noticeable alternative to seeking health care services especially in developing countries and/or in communities that experience challenges in access to health services (Niwandinda *et al.*, 2020; WHO, 2000a). It could be influenced by the shortage of healthcare services or the lack of access to affordable healthcare services offered by trained healthcare workers. Consequently, self-medication has contributed to more than half (67%) of the global burden of disease (Karimy *et al.*, 2019) and is a core component of the health system that need great attention. Understanding self-medication practices and their drivers can promote the judicious use of medicines.

1.1 Background

Self-medication puts an individual at the risk of adverse consequences, it has been associated with increased antimicrobial resistance, drug wastage, delayed appropriate treatment leading to higher morbidity and mortality levels (Mbonye, 2014; Sridhar *et al.*, 2018; Sadio *et al.*, 2021). The increase in global self-medication rates is therefore of public health concern, although the proportion of people that self-medicate varies by country, self-medication has

been observed to be as high as 70% among some communities in some countries (Geissler *et al.*, 2000; Phalke, Phalke and Durgawale, 2006; Bennadi, 2013; Pandya *et al.*, 2017). The increase in self-medication has been persistent despite the efforts by the international community and governments to provide appropriate legislation and guidelines on the use on the effective use of medicines (WHO, 2000b, 2012b, 2016).

Similar to other countries, self-medication is a growing public health problem in Uganda. Upto 75% of Northern Ugandans(Ocan *et al.*, 2014), 64% of university students(Niwandinda *et al.*, 2020) and over up to 100% of urban dwellers (Mbonye, 2014)practice self-medication. This observation is despite the longstanding existence of national policies to regulate the use of drugs such as; Eddagala Luwangula, 1952; Poisons Guide, 1960; Dispensing Tariff, 1962; Trade Guild, 1963; The Pharmacy and Drugs Act, 1970 and The National Drug Policy and National Drug Authority (NDA) Act, 1993 (WHO, 2012a). Specifically, the National Drug Policy and National Drug Authority Act 1993 classifies drugs and regulates who may sell various types. It also sets out which groups of drugs may be sold without a prescription and which require a prescription from a duly qualified medical practitioner (NDA, 1993), however, self-medication persists in the community. This study examined the factors associated with self-medication in Makindye Division, Kampala district.

1.2 Problem statement

The Ministry of Health (MoH) and the NDA classify drugs and stipulate clearly how drugs may be dispensed with or without a prescription(NDA, 1993). However, a recent article inThe Daily Monitor (2021) indicates that self-medication is on the rise in Uganda. This is despite the devastating consequences related to the practice such as the risk of death, drug toxicity, drug reactions and drug interactions (WHO, 2016). Self-medication has particularly increased globally and within the country due to the fear of the COVID-19 pandemic (The New Vision, 2020; WHO, 2020).

Although various studies have examined the subject in the country (Mbonye, 2014; Ocan *et al.*, 2014; Niwandinda *et al.*, 2020), the most recent one was conducted among university students which are not representative of the general Ugandan communities. The other studies were conducted over 15 years ago and as noted, the situation in the country has been evolving at a fast pace. Consequently, the most recent information on the matter is not available providing a challenge to public health interventions and increasing the risk of drug resistance, morbidity, mortality, ineffective treatment, economic losses and drug wastage among

communities in the country (Pagán *et al.*, 2006; Kayalvizhi and Senapathi, 2020). In addition, no searchable studies have examined the matter during the COVID-19 pandemic. In Makindye division, there are no studies that have examined self-medication, therefore, creating a knowledge gap for which new material from a study could be useful for health programming in the district. This study, therefore, desired to assess self-medication among communities in Makindye-Kampala capital city.

1.3 Purpose of the study

The study assessed self-medication among communities in Kampala to provide information on policy formulation and ways of improving the quality of service in health care.

1.4 Objectives of the study

1.4.1 General objective

To assess self-medication among adults living in Ugandan communities, Makindye Division, Kampala District

1.4.2 Specific Objectives

- i. To determine the prevalence of self-medication among communities in Makindye Division, Kampala District.
- ii. To assess individual factors that influence self-medication among communities in Makindye Division, Kampala District.
- iii. To assess socioeconomic factors that influence self-medication among communities in Makindye Division, Kampala District.
- iv. To determine health provider-related factors which influence self-medication among communities in Makindye Division, Kampala District.

1.5 Research questions

- i. What is the prevalence of self-medication among communities in Makindye Division, Kampala District?
- ii. What are the individual factors associated with self-medication among communities in Makindye Division, Kampala District?
- iii. What are socioeconomic factors that influence self-medication among communities in Makindye Division, Kampala District?
- iv. What are the health provider-related factors that associated self-medication among communities Makindye Division, Kampala District?

1.6 Conceptual framework

Independent variables

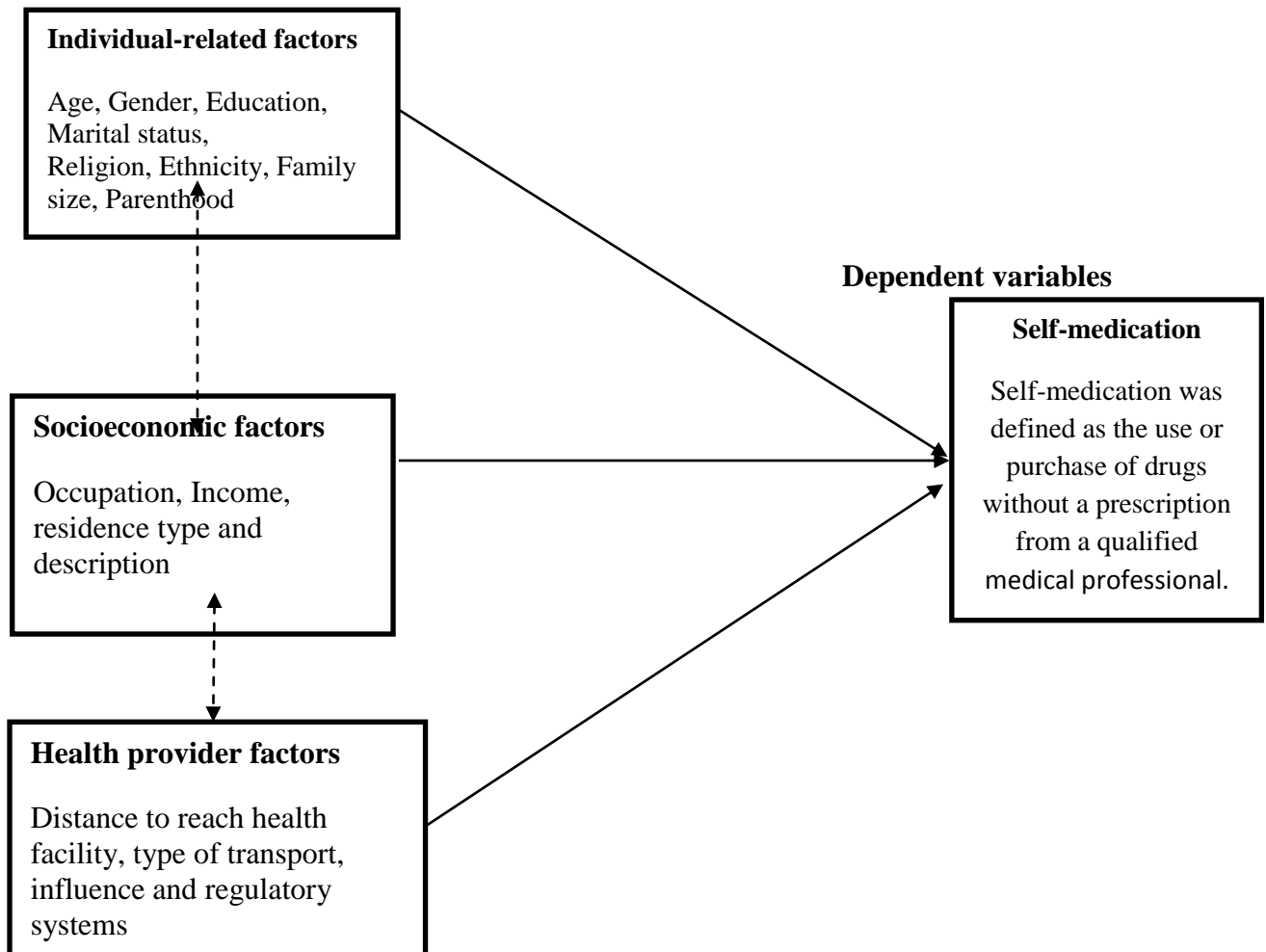


Figure 1: Conceptual framework

1.6.1 Narrative of the conceptual framework

The conceptual framework above illustrates the relationship between independent and dependent variables for this study. The independent variables believed to influence the practice of self-medication; are categorized into individual factors, health systems factors and socioeconomic factors. However, the independent factors can also influence each other, for example, individual factors such as age and sex can influence socioeconomic factors such as education level and occupation. Socioeconomic factors such as income can influence a person's ability to access medication due to affordability.

1.7 Significance of the study

The study is useful to policy formulators; The Ministry of Health (MoH) and the World Health Organization (WHO). Policy implementers like the National Drug Authority, National Medical stores and Pharmaceutical Society of Uganda (PSU), can also use it. Other potential implementers are; The Uganda Medical and Dental practitioners council, The Allied health professionals council, The nurses and midwives council, The Media, academia and research institutions, the police and the public at large. The findings of the study can be used to inform NDA policy on self-medication and NDA and MoH activity implementation towards detecting and reducing self-medication.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This study is an assessment of self-medication practices among communities in Makindye Division, Kampala, Uganda. This chapter provides a synthesis of the available literature on self-medication, its prevalence, outcomes, consequences and the factors associated with it and studied by other researchers.

2.1 Self-medication

Self-medication is 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 disease or symptoms (WHO, 2000a). It is considered an element of self-care that is practised worldwide and generally thought to be one of the oldest forms of health practice (Caamaño *et al.*, 2000; WHO, 2000b; Hassali *et al.*, 2011). Under certain guidelines, self-medication has the approval of the global approval for quick and effective relief of symptoms of minor ailments (Rodrigues, 2020). This reduces the burden on health care services, most especially in understaffed, inaccessible rural or remote areas. Generally, self-medication is the first medical response to minor health ailments or everyday illnesses. This happens particularly for symptoms that are perceived by patients as non-serious or minor (Padilla *et al.*, 2010). It is now believed that self-medication is one of the most essential components of health care not just in developed countries but as well as in developing countries (WHO, 2000b; Rodrigues, 2020).

The prevalence of self-medication varies by country, the practice of self-medication has been observed to range between 40% to up to 100% among some communities in some countries in Europe, India, Ethiopia and Uganda (Geissler *et al.*, 2000; Phalke, Phalke and Durgawale, 2006; Bennadi, 2013; Mbonye, 2014; Pandya *et al.*, 2017). In developing countries, where the highest proportion of the practice is observed, the purchase of medications from drug vendors without consulting a qualified health care practitioner is a widespread practice (T. O. Fakeye, 2012). Up to 100% of Ugandans were established to practice self-medication according to Mbonye (2014) and more than 70% of Sudanese practice self-medication (Awad *et al.*, 2017). The medicines commonly approved for self-medication in certain conditions are paracetamol and other analgesics. However, in developing countries, antibiotics are

commonly sold medications as well even though antibiotics are not supposed to be sold without a doctor's prescription. This has significantly led to the prevalent antibiotic resistance and the common adverse drug reactions being witnessed in this era (Tesfamariam *et al.*, 2019).

The cornerstone of any health care delivery system is the availability of drugs. Without medicine to treat symptoms, a health care system inspires no confidence or interest in its users. It is difficult to mobilize people for preventive measures if curative drugs are not provided. However, if the drugs are not used rationally, they can result in economic loss and medical consequences such as ineffective treatment, adverse effects and the development of bacterial resistance to drugs. For these reasons, the problem of drug misuse in Uganda is a very relevant factor in the country's health care delivery system. The National Drug Policy of 1993 classifies drugs and regulates who may sell various types. It also sets out which groups of drugs may be sold without a prescription and which require a prescription from a qualified medical practitioner. Although non-prescription drugs may not be sold without a license, many unlicensed drug shops and private clinics sell antibiotics and other prescription-only drugs quite openly. The wide gap between policy and practice is a general characteristic of drug use in Uganda.

2.2 Consequences of self-medication

Self-medication has been being linked to poor health and public health outcomes. A WHO study in Mongolia by Togoobaatar *et al.*, (2010) showed that the emergence and spread of antimicrobial resistance were related to the irrational use of antibiotics due to the purchase of 50% without a prescription. Aslam *et al.*, (2020) also reported that the inappropriate antibacterial treatment and overuse of antibiotics have contributed to the emergence of antibacterial resistant bacteria.

Dulal *et al.*, (2020) concluded that long time intervals to presentation, diagnosis, and treatment of gastrointestinal cancer among some patients were attributed to self-medication practices. In this study, over 88% of the patients had a history of self-medication before their time of medical consultation. The medium time to patient presentation was 150 days and the time to diagnosis was 220 days. The findings of the WHO (2012) states that adverse drug reactions are among the leading causes of death in many countries, majorly attributed to self-medication and a recent study by Dulal *et al.*, (2020) concluded that the ageing population in the world is an issue for the proper medication use. Overall, self-medication increases the risk

of drug resistance, morbidity, mortality, ineffective treatment, economic losses and drug wastage among communities in the country (Pagán *et al.*, 2006; Kayalvizhi and Senapathi, 2020).

2.3 Factors influencing self-medication

2.3.1 Individual-related factors

In their study conducted in Nigeria, Enato, Sounyo and Einarson (2011) concluded that persons who got ill more frequently were more likely to self-medicate. A study conducted in Northern Uganda by Ocan *et al.*, (2014) observed a higher proportion of self-medication among female respondents (72%) compared to male respondents (28%). In another study by Jember *et al.*, (2019) on self-medication practices and associated factors among households at Gondar town, Ethiopia, the frequency of self-medication was lower among males (39.2%) and compared to females (60.8%) and among the married (58%) compared to the single. A recent study by Kifle *et al.*, (2021) in Gondar Town, North West Ethiopia, found that self-medication was higher among females participants compared to males (AOR = 3.11, 95% CI = 1.55, 6.25) and among Muslim followers (AOR = 2.78, 95% CI = 1.30, 5.91) and protestant followers (AOR = 4.25, 95% CI = 1.38, 13.07). However, a study conducted in western Kenya by Geissler *et al.*, (2000) established that concerning a younger age, male participants were twice to self-medicate compared to female participants (62 versus 32% of the self-treatments, respectively). In older ages, male participants were nearly three times more likely to self-medicate compared to female participants (75 versus 25%, respectively). A cross-sectional study assessing the self-medication practice of 313 students in Asmara College of Health Sciences, Eritrea established that a tertiary level of education was associated with higher odds of self-medication (COR: 4.15 95% CI: 1.20-14.34], $p < 0.05$). Similarly, in their study conducted in Nigeria, Enato, Sounyo and Einarson (2011) concluded that self-medication was higher among the less educated compared (57.9%) to the highly educated (11.5%). Also, in their community-based study of 600 households in Khartoum State, Sudan, Awad *et al.*, (2017) established that self-medication was more common among university graduates compared to those that had lower education. A cross-sectional descriptive study of 404 participants in Pereira, Colombia found being older than 60 years was associated with lower odds of self-medication (OR = 0.36; 95% CI: 0.206–0.632, $p < 0.001$) (Machado-Alba *et al.*, 2014). Similarly, a study conducted in western Kenya by Geissler *et al.*, (2000) established that self-treatment increased with age from 44% in the youngest age group to 63% in the oldest. A study examining the prevalence and factors

associated with dermatology-related self-medication in Togo revealed that the duration of illness was associated with higher odds of self-medication (aOR = 1.44; 95% CI = 1.01, 2.05) (Kombaté *et al.*, 2017).

2.3.2 Socioeconomic factors

A study by Padilla *et al.*, (2010) among Latin Americans living in the United States found that among this group of people self-medication was culturally acceptable. The study also found that poverty due to lack of health insurance (leading to the inability to afford health care) and mistrust of doctors was the most predominant reasons for this practice. In Gondar Town, North West Ethiopia, a study of 554 students of whom 78.2% practised self-medication found that self-medication was observed to be more those with higher monthly income compared to a lower monthly income (AOR = 2.49, 95% CI = 1.12, 5.56). The study also found that those who travelled a longer distance of health institution (<30 min) compared to a shorter distance (AOR = 2.79, 95% CI = 1.39, 5.61) were more likely to self-medicate. Also, accessibility of pharmacy compared to lack of access to the pharmacy was associated with higher odds of self-medication (AOR = 4.85, 95% CI = 2.08, 11.29) (Kifle *et al.*, 2021).

In Pereira, Colombia, a cross-sectional descriptive study of 404 participants established recommending drugs to others (OR=2.25; 95% CI:1.121–4.553, p=0.23) and storing drugs at home (OR=1.96; 95% CI:1.187–3.266, p=0.009) were associated with higher odds of self-medication (Machado-Alba *et al.*, 2014). A cross-sectional study assessing the self-medication practice of 313 students in Asmara College of Health Sciences, Eritrea established that having any kind of job was associated with higher odds of self-medication (COR: 2.56 95% CI: 1.15–5.68, p <0 .05) (Araia, Gebregziabher and Mesfun, 2019). Also, in their community-based study of 600 households in Khartoum State, Sudan, Awad *et al.*, (2017) established was more common among people who were the middle-income group (OR: 3.7; 2.6-5.3) compared to other income groups. The study concluded that financial constraints were a primary reason why people practised self-medication.

A cross-section study on self-medication among 729 university students at the University of Gondar College of Medicine and Health Sciences 729 established that students who had an income between USD 44.01–175.87 category of income per month were less likely to use self-medication compared to those that had an income of USD 22 or less (AOR: 0.47; 95% CI: 0.29–0.78)(Zeru *et al.*, 2020). Similarly, although they did not find any statistically

significant association between socioeconomic status and self-medication, de Moraes *et al.*, (2011) found that having a job (which typically increases your socioeconomic status) was associated with an increased risk of self-medication (aPR 1.21 95% CI 1.01-1.44, $p < 0.05$). In their cross-sectional study of 649 medical and non-medical students self-medication at the Malaysian National Defence University in Malaysia, Haque *et al.*, (2019) concluded that one of the primary reasons for self-medication was the need to save costs on health expenditure. Both medical and non-medical students were more asserted that it was much cheaper to get drugs from the local pharmacy than to seek the care of a qualified health professional.

2.3.3 Health provider factors

Free access to drugs has been observed to influence self-medication in some communities. A study by Anyama and Adome (2003) carried out in Uganda found that the majority of clients (22.4%) seeking community pharmaceutical services at the two pharmacies self-medicated with accessible antibiotics. Similarly, another study in Asmara Eritrea conducted by Tesfamariam, (2019) conclude that easy accessibility of antibiotics drugs was the main reason for self-medication among respondents. The findings of a study in Gondar Town, North West Ethiopia by Kifle *et al.*, (2021) found that ease of accessibility of pharmacy compared to lack of access to the pharmacy was associated with higher odds of self-medication (AOR = 4.85, 95% CI = 2.08, 11.29).

A study by Sadio *et al.*, (2021) in Togo established that there was an increase in the prevalence of self-medication to prevent the contraction of COVID-19 by 34.2% and some of the driving factors were the level of education and the influence of social media (Sadio *et al.*, 2021).

A 2014 cross-sectional study among 892 adults (≥ 18 years) in Northern Uganda by Ocan *et al.*, (2014) concluded that health system barriers were some of the most significant predictors of self-medication. Participants who thought that there was a long waiting time at the health facility to see a doctor were more likely to self-medicate compared to those that did not think so (AOR 2.44 95% CI 1.54-3.88, $p < 0.0001$). Also, the study found that participants who thought that the distance to the health facility was long were more likely to self-medicate compared to those that thought that the distance was short (AOR 2.33 95% CI 1.58-3.41, $p < 0.0001$). Another significant finding of the study was that participants who had a poor attitude towards hospital services had higher odds of self-medication compared to those who

thought that hospital services were good and reliable (AOR 1.82 95% CI 1.09, 3.04, p=0.021).

In their community-based study of 600 households in Khartoum State, Sudan, Awad *et al.*, (2017) established that one of the reasons for self-medication in communities was that the private pharmacies were cheaper as compared to the primary healthcare sources. Consequently, the community members found seeking services in the public health system more costly than the public health system. Similarly, in their cross-sectional study of 649 medical and non-medical students self-medication at the Malaysian National Defence University in Malaysia, (Haque *et al.*, 2019) concluded that one of the primary reasons for self-medication is the convenient location of retail pharmacies.

2.4 Conclusion

This literature has been purposed to look at available research on self-medication from studies of various researchers. The review self-medication is of a public health concern as observed globally and in Uganda as cited by the WHO and the NDA. The review also shows that there are various factors associated with self-medication in all categories of the variables to be studied (individual, socioeconomic and health system factors). Overall, self-medication makes the modern person take a greater role (empowerment) in the management of their health, it is influenced by self-care and the need to care for others, lack of time, lack of access to health services, financial limitations, lack of knowledge, perceptions, beliefs and media advertisements. In Uganda, the topic has been studied by three peer-reviewed studies, however, two of the studies are more than 15 years old while the most recent study was conducted among university students. A gap exists regarding updates on the subject in the community especially in the current COVID-19 pandemic context that has affected the country, especially in the urban areas. Consequently, an assessment of self-medication practices was conducted within Makindye Division, Kampala district.

CHAPTER THREE: METHODOLOGY

3.0 Introduction

This chapter presents the study research methodology comprising of the following sections described in detail; Study area, Study design, Population, Sampling, Study variables, Data collection tools, Data analysis, Quality control and Ethical considerations.

3.1 Study design

The study adopted a cross-sectional survey design which entailed the collection of data on self-medication at a certain point in time. The study employed both quantitative and qualitative collection methods and it was conducted within the communities of Makindye division, Kampala district. The study design was suitable because of its ability to answer the research questions sufficiently also its other advantages including requiring less time and the ability to collect data on multiple variables.

3.2 Study area

In Makindye Division, there are over 1,000 registered drug outlets, the majority of which are registered Pharmacies (NDA, 2022). These outlets are distributed over the 20 parishes of Makindye division, Kampala capital city authority (KCCA). Makindye is in the southeastern corner of KCCA, bordering Wakiso district to the south and the west and its coordinates are 0°16'45.0"N, 32°35'10.0"E (Latitude:0.279175; Longitude:32.586120). Makindye division has a population of 395,276 people according to the 2014 National population and housing census(UBOS, 2016). The division also has 21 parishes, which are Bukasa, Buziga, Ggaba, Kabalagala, Kansanga-Muyenga, Katwe I, Katwe II, Kibuli, Kibuye I, Kibuye II, Kisugu, Lukuli, Luwafu, Makindye I, Makindye II, Nsambya Central, Nsambya Housing Estate, Nsambya Police Barracks, Nsambya Railway, Salaama, and Wabigalo. The parishes are comprised of a total of 955 villages.

3.3 Population

3.3.1 Target population

The target population for the study were all adults (aged 18 years and above).

3.3.2 Study population

All adults (aged 18 years and above) who reside or work in Makindye division, Kampala district were part of the study population.

3.3.3 Study unit

The study unit was an adult person(aged 18 years and above).

3.4 Eligibility criteria

3.4.1 Inclusion criteria

All adults (18 years and above) of sound mind (i.e. those who could fully understand and respond to the questions)who consented to participate in the study were included in the study.

3.4.2 Exclusion criteria

The study excluded residents of Makindye division who are; those who were sick or had any disability that made them unable to speak well, unable to hear well, unable to understand well. Residents of Nsambya Police Barrackswere excluded from the study due to anticipated failure to obtain clearance for the study in the area related to security reasons. All residents who refused to consent to the study were excluded.

3.5 Sampling

3.5.1 Sample size determination

Sample size was calculated from the simplified formula by Yamane (1967)as follows:

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

Where

n = Desired sample size

N= Population size ((UBOS, 2016)

e= Acceptable sampling error ($\pm 5\%$)

$$n = \frac{395276}{1+395276(0.05)^2}$$

$$n = \frac{395276}{988.19}$$

$$n = 395.99$$

$$\approx 396.$$

Therefore, the study considered a 10% non-response rate, so, the final sample space was 436 respondents.

3.5.2 Sampling procedure

For the sampling process, Makindye Division was stratified by parish and the sample was distributed proportionately to each parish based on the parish population from the National Population and Housing Census to project the proportion of households needed per parish (UBOS, 2016) (See table 1 below). A total of 20 parishes were included in the study, Nsambya Police Barracks Parish was excluded from the study because the researcher may not get clearance to conduct the study due to security reasons. Also, proportionate sampling was used to determine the ratio of male-female participants needed for each parish. At the parish level, simple random sampling was used to select the interview respondents for the study.

Table 1: Sample size distribution by parish and sex.

Parish	Population Size by Parish			Proportion required			Sample allocation		
	Male	Female	Total	Proportion population contribution	% Male	% Female	Sample required	Male	Female
Bukasa	14,387	15,019	29,406	8%	49%	51%	33	16	17
Buziga	7,443	8,534	15,977	4%	47%	53%	18	8	10
Ggaba	11,264	13,144	24,408	6%	46%	54%	28	13	15
Kabalagala	8,219	8,207	16,426	4%	50%	50%	19	9	9
Kansanga	11,120	11,767	22,887	6%	49%	51%	26	13	13
Katwe I	3,796	4,071	7,867	2%	48%	52%	9	4	5
Katwe II	6,253	7,239	13,492	3%	46%	54%	15	7	8
Kibuli	12,857	13,333	26,190	7%	49%	51%	30	15	15
Kibuye I	12,526	13,758	26,284	7%	48%	52%	30	14	16
Kibuye II	4,320	4,731	9,051	2%	48%	52%	10	5	5
Kisugu	9,400	9,835	19,235	5%	49%	51%	22	11	11
Lukuli	14,281	16,487	30,768	8%	46%	54%	35	16	19
Luwafu	8,858	10,713	19,571	5%	45%	55%	22	10	12
Makindye I	10,811	11,502	22,313	6%	48%	52%	25	12	13
Makindye II	6,935	8,849	15,784	4%	44%	56%	18	8	10
Nsambya Central	17,269	19,461	36,730	10%	47%	53%	42	20	22
Nsambya Estate	256	269	525	0%	49%	51%	1	0	0
Salaama	15,464	17,666	33,130	9%	47%	53%	37	17	20
Wabigalo	7,166	8,099	15,265	4%	47%	53%	17	8	9
Nsambya Railway	99	88	187	0%	53%	47%	0	0	0
Total	182,724	202,772	385,496	100%	47%	53%	436	207	229

NB: Nsambya Police Barracks Parish was excluded from the study because the researcher may not get clearance to conduct the study due to security reasons.

For the qualitative aspect, both key informant interviews (KIIs) and focus group discussions (FDGs) were conducted. Purposive sampling was used to select participants for both categories. One participant per parish was chosen for the KII, the participant was a Medicine Seller within the most prominent drug store in the parish. The selection of the participant was made with support from the Local Parish Council/Chief. Five FDGs were conducted at villagecommunity halls, with a total of 8 – 10 participants for maximum saturation (Charmaz, 2006). These participants included village members who are accessible, available and willing to participate in the study through help from the LC I. These were selected from 5 randomly-selected villages from 5 randomly selected parishes of the 20 parishes of Kabalagala, Katwe II, Luwafu, Nsambya Central and Salaama.

3.6 Study variables

The independent and dependent variables for the study are shown in the table below

Table 2: Study variables

Independent variables	Dependent variable
<u>Individual-related factors</u> Age Gender Education, Marital status, Religion Ethnicity Family size Parenthood Influence	Prevalence of self-medication
<u>Socioeconomic factors</u> Occupation Income Residence type	
<u>Healthy systems factors</u> Distance to reach a health facility Type of transport Regulatory systems	

3.7 Data collection tools

3.7.1 Qualitative data collection

A KII guide and an FGD guide were developed to collect qualitative data (see Appendix III and Appendix IV) from the participants. The KII guide had predetermined responses related to the study objective while the FGD guide provided an exploratory response for the

responses. The Principal Investigator (PI) led the moderation of the FDG and supervised the Research Assistants to collect data for the KIIs.

3.7.2 Quantitative data collection

Quantitative data were collected using a structured questionnaire in English that was also translated in Luganda (See Appendix II) which was administered by trained research assistants. The questionnaire was divided into four sections. The first section collected information on individual factors, the second section collected information on socioeconomic factors, the third section on health provider related factors and the fourth section on self-medication aspects. The research assistants were trained by the PI on matters regarding the study objectives and they were endowed with the necessary skills for this research. The PI closely monitored the process to ensure compliance with ethical procedures and quality data collection. The questionnaire was developed using Open Data Kit, an collection software (ODK, 2020) to ease data transmission and reduce the number of errors.

3.8 Plan for data analysis

3.8.1 Qualitative data analysis

Data from the KIIs were analyzed for summaries using Ms-Excel and presented descriptively using frequencies and percentages. For the FDG, the discussions were recorded in Luganda and translated at transcription word for word by two independent transcriptions. The transcriptions were reviewed for confirmation of accuracy and validation. Thereafter, the transcriptions were read repeatedly to align the subjects with the research objectives, subjects were merged accordingly and presented in tabular form. For more meaningful and relatable analysis, some responses from the participants were quoted verbatim and meaning provided.

3.8.2 Quantitative data analysis

The data collected were extracted from ODK using the PI's secure Google Cloud Account into Microsoft Excel for further cleaned then it was exported into STATA 16 for analysis (StataCorp, 2017), Descriptive statistics were presented in the form of percentages, means, standard deviations, and frequencies.

At the bivariate level, the Chi-squared (for cell counts ≥ 5) or Fisher's exact test (for cell counts < 5) was used to determine the existence of an association between independent categorical variables and the dependent variable. The dependent variable was having bought/used medication without a prescription within 12 months preceding the study. It was

categorized as a binary variable (Yes=1, No=0). A logistic regression analysis was used for unadjusted odds ratios (UOR) with 95% confidence intervals and probability values (p-values) of less than 5% statistical significance. At the multivariate level, all variables with statistically significant p-values were included, and a modified logistic regression was used for adjusted odds ratios (aOR). At 5% significance, variables with an odds ratio greater or less than 1 were interpreted to increase or decrease the odds of self-medication respectively.

3.9 Quality control

To ensure quality in the data collected, the PI conducted a one-day training of the Research Assistants on the objectives of the study. The Research Assistants were also trained on the questionnaire and how to use the ODK data collection software. The questionnaire was then pre-tested in Mulago II Village, Central division, a village/division that was not participating in the study. The pre-testing helped to determine content validity and the ability of the respondents to comprehend the questions. The pretest returned a content validity index of 0.95% which was sufficient for the questionnaire to be used. However, the questionnaire was further edited for content for any further clarification needed. The PI employed the use of quality checks with data collection software that minimized errors in data collection compared to paper-based systems.

3.10 Ethical considerations

The study sought the approval of the Clarke International University Ethics and Research Committee (CIU REC). Also, the study sought the administrative approval of the Makindye District Health Office, the Parish Chiefs and the Local Council Committees from where the study will be conducted. Participants were fairly selected and informed consent was sought before recruitment into the study. They were informed of the purpose of the study and the research procedures. Withdrawing without penalty was their right. Research goals were presented in a language the participants understand best and all questions asked were answered. All information given by participants was treated with confidentiality. All participants were anonymized. The benefits of the study were the useful information obtained after analysis and conclusion.

3.10.1 Limitations of the study

This study had some limitations. One was the findings generated may not be sufficient to be generalizable to the entire population in Makindye Division given that only a sample was chosen. Also, the study was conducted at a point in time so the findings do not guarantee to be previous or future practices on self-medication. Finally, the findings of this study cannot be used to analyze behaviour over some time and are not able to determine cause and effect.

3.10.2 Dissemination plan

The PI expects to present the study report as part of the dissertation defence for the partial fulfilment of the award of a Master's Degree of Public Health of Clarke University. A summarized copy of the report will be shared with Makindye Division Offices, each of the Parish Offices and the LCs of the participating villages. The PI expects to work with his Supervisor to refine the dissertation into a manuscript for possible publication in a reputable journal.

CHAPTER FOUR: RESULTS

4.0 Introduction

This chapter presents the findings of the undertaking of the study to examine self-medication among residents of Makindye Division, Kampala District. It includes sections; the description of the distribution of the characteristics of the participants, the relationship between individual, socioeconomic and health-system factors with the practice of self-medication.

4.1 Descriptive characteristics of the study participants

The study involved a total of 436 participants who had a mean age of 33.07 (standard deviation \pm 11.61) years. The age range of the participants was 18 - 66 years. Most of the participants (54.59%) were in the age group of 30 years and older and the majority were females (53.21%). The majority of participants were unmarried (66.74%) and most were of a central region based ethnic origin (58.72%). Also, the majority of the participants were catholic (42.89%), had their highest education level as secondary or lower (57.11%) and had children (67.2%). Table 2 presents the distribution of participant characteristics.

Table 3: Characteristics of the study respondents

Variable	Category	Total (n=436)	Percentage (%)
Age	Less than 30 years	198	45.41
	30 years and above	238	54.59
Gender	Female	232	53.21
	Male	204	46.79
Marital status	Unmarried	291	66.74
	Married	145	33.26
Ethnicity Origin	Northern	26	5.96
	Central	256	58.72
	Eastern	57	13.07
	Western	97	22.25
Religion	Catholic	187	42.89
	Muslim	100	22.94
	Protestant	105	24.08
	Other	44	10.09
Education	Secondary or lower	249	57.11
	University or higher	187	42.89
Has children	No	143	32.8
	Yes	293	67.2

4.2 Prevalence of self-medication

Of the 436 participants, 383 (87.84%, 95% CI 84.76 – 90.92) practised self-medication within a year preceding the study with the majority practising self-medication 5 times or more in the period (306, 79.90%). See figure 1 for details.

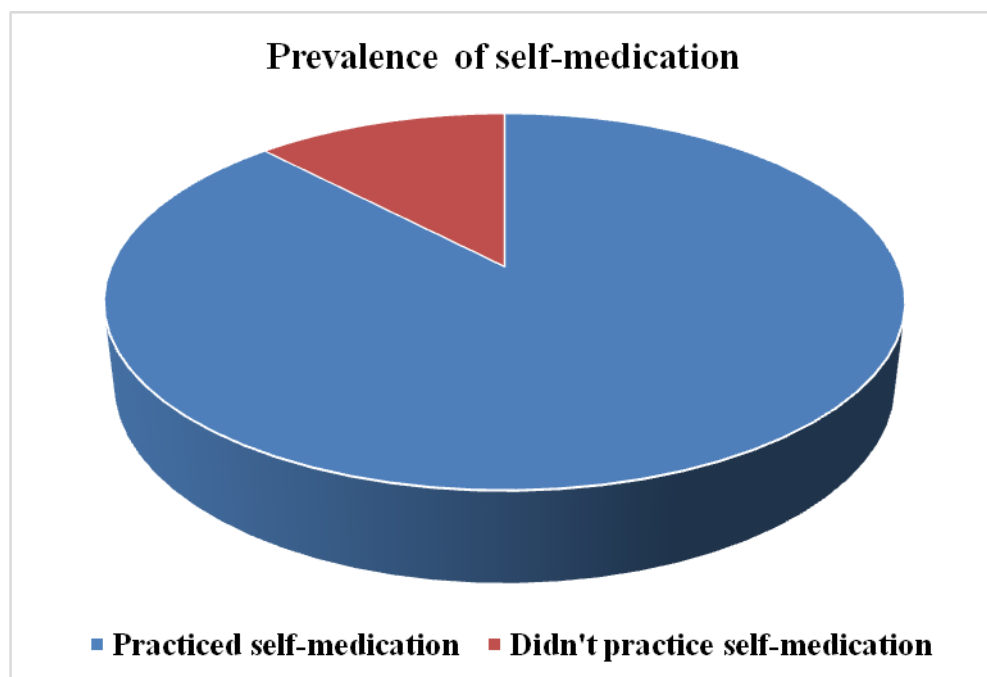


Figure 2: Prevalence of self-medication

4.3 Individual, socioeconomic, health system factors and self-medication

4.3.1 Individual factors and self-medication

Most participants who practised self-medication were 30 years and older (213, 55.61%), unmarried (257, 67.10%), of central region-based ethnicities (223, 58.22%), catholic by religion (171, 44.65%), achieved only secondary or lower education (214, 55.87%) and had children (265, 69.19%). Having children was the only individual factor that was statistically significantly associated with self-medication ($p=0.017$). Other individual factors i.e. age, gender, marital status, ethnicity origin, religion and education were not statistically

significantly associated with self-medication ($p>0.05$). Table 4 below shows the relationship between individual factors and self-medication.

Table 4: Individual factors and self-medication

Variable	Category	Total	Self-medication		P-value
			No	Yes	
Age	Less than 30 years	198 (45.41)	28 (52.83)	170 (44.39)	0.247
	30 years and above	238 (54.59)	25 (47.17)	213 (55.61)	
Gender	Female	232 (53.21)	29 (54.72)	203 (53.00)	0.815
	Male	204 (46.79)	24 (45.28)	180 (47.00)	
Marital status	Unmarried	291 (66.74)	34 (64.15)	257 (67.10)	0.669
	Married	145 (33.26)	19 (35.85)	126 (32.90)	
Ethnic origin	Northern	26 (5.96)	3 (5.66)	23 (6.01)	0.639
	Central	256 (58.72)	33 (62.26)	223 (58.22)	
	Eastern	57 (13.07)	4 (7.55)	53 (13.84)	
	Western	97 (22.25)	13 (24.53)	84 (21.93)	
Religion	Catholic	187 (42.89)	16 (30.19)	171 (44.65)	0.176
	Muslim	100 (22.94)	17 (32.08)	83 (21.67)	
	Protestant	105 (24.08)	15 (28.30)	90 (23.50)	
	Other	44 (10.09)	5 (9.43)	39 (10.18)	
Education	Secondary or lower	249 (57.11)	35 (66.04)	214 (55.87)	0.161
	University or higher	187 (42.89)	18 (33.96)	169 (44.13)	
Has children	No	143 (32.80)	25 (47.17)	118 (30.81)	0.017*
	Yes	293 (67.20)	28 (52.83)	265 (69.19)	

SM=Self-medication, Note significant codes at 0.1%, 1% and 5%

4.3.2 Socioeconomic factors and self-medication

Most participants who practised self-medication were lived in households of less than 5 members(224, 58.49%), were employed informally (261, 68.15%), had an income of more than 500,000 Ugx (276, 72.06%), rented their living premises (259, 67.62%) and lived in permanent households (334, 87.21%). Employment status ($p=0.002$), monthly income ($p=0.022$), and renting the household premises ($p<0.001$) were the only socioeconomic factors statistically significantly associated with self-medication. Other socioeconomic factors i.e.the number of persons in the household and type of household premises were not statistically significantly associated with self-medication ($p>0.05$). Table 5 below also shows the relationship between socioeconomic factors and self-medication.

Table 5: The relationship between socioeconomic factors and self-medication

Variable	Category	Total	Self-medication		P-value
			No	Yes	
Number of persons in household	Less than 5	255 (58.49)	31 (58.49)	224 (58.49)	0.999
	5 or more	181 (41.51)	22 (41.51)	159 (41.51)	
Employment status	Unemployed	48 (11.01)	13 (24.53)	35 (9.14)	0.002**
	Formal	101 (23.17)	14 (26.42)	87 (22.72)	
	Informal	287 (65.83)	26 (49.06)	261 (68.15)	
Monthly Income	<500,000	322 (73.85)	46 (86.79)	276 (72.06)	0.022*
	≥500,000	114 (26.15)	7 (13.21)	107 (27.94)	
Rents premises	No	157 (36.01)	33 (62.26)	124 (32.38)	<0.001***
	Yes	279 (63.99)	20 (37.74)	259 (67.62)	
Type of household premises	Temporary	53 (12.16)	4 (7.55)	49 (12.79)	0.273
	Permanent	383 (87.84)	49 (92.45)	334 (87.21)	

SM=Self-medication, Note significant codes at 0.1%, 1% and 5%

4.3.3 Health provider-related factors and self-medication

Also, the findings of the study show that most participants who practised self-medication lived less than 1km from the nearest drug store (271, 70.76%) or health facility (274, 71.54%), walked as their transport means to the health facility (290, 75.72%), perceived self-medication as dangerous (339, 88.51%), agreed that prescriptions from a qualified medical profession were needed before taking any medication (210, 54.83%), did not practice self-medication to prevent or treat COVID-19 (218, 56.92%) and did not have a frequent or recurring illness (336, 87.73%). The perception of the need for a prescription from a qualified medical professional was needed before taking any medication ($p < 0.001$) and self-medication to prevent COVID-19 ($p < 0.001$) were the only health-system factors statistically significantly associated with the self-medication. Other health-system factors i.e. distance to nearest drugstore/health facility, transport means, perception of the danger of self-medication and frequent illness were not statistically significantly associated with self-medication ($p > 0.05$). Table 6 below also further shows the relationship between health-system factors and self-medication.

Table 6: Relationship between health provider-related factors and self-medication.

Variable	Category	Total	Self-medication		P-value
			No	Yes	
Distance to nearest drug store	< 1 Km	308 (70.64)	37 (69.81)	271 (70.76)	0.887
	> 1 Km	128 (29.36)	16 (30.19)	112 (29.24)	
Nearest drug shop also a health facility	<1Km	310 (71.10)	36 (67.92)	274 (71.54)	0.586
	>1Km	126 (28.90)	17 (32.08)	109 (28.46)	
Transport means to health facility	Walking	328 (75.23)	38 (71.70)	290 (75.72)	0.525
	Motorized	108 (24.77)	15 (28.30)	93 (24.28)	
Perceived SM as dangerous	No	46 (0.586)	2 (3.77)	44 (11.49)	0.087
	Yes	390 (89.45)	51 (96.23)	339 (88.51)	
Agreement on prescription	Prescription needed	259 (59.40)	49 (92.45)	210 (54.83)	<0.001***
	No prescription needed	177 (40.60)	4 (7.55)	173 (45.17)	
Self medication to prevent COVID-19	No	268 (61.47)	50 (94.34)	218 (56.92)	<0.001***
	Yes	168 (38.53)	3 (5.66)	165 (43.08)	
Has frequent illness	No	384 (88.07)	48 (90.57)	336 (87.73)	0.550
	Yes	52 (11.93)	5 (9.43)	47 (12.27)	

Km=Kilometres, SM=Self-medication, COVID-19=Coronavirus diseases of 2019. Note significant codes at 0.1%, 1% and 5%

4.4 Factors associated with self-medication

4.4.1 Quantitative analysis

In the unadjusted analysis, participants who had children (OR 2.01 95% CI 1.12 - 3.59), were informally employed (OR 3.73 95% CI 1.76 - 7.92), had a monthly income equal to or more than 500,000 Ugx (OR 2.55 95% CI 1.12 - 5.82), rented their living premises (OR 3.45 95% CI 1.9 - 6.25), didn't think a qualified medical provider's prescription needed before taking any medication (OR 4.22 95% CI 2.06 - 8.65), took self-medication to prevent COVID-19 (OR 12.61, 95% CI 3.87 - 41.15) were more likely to practice self-medication. In the adjusted analysis, participants who rented their household premises (aOR 3.49 95% CI 1.76 - 6.89), didn't think a qualified medical provider's prescription was needed before taking any medication (aOR 4.11 95% CI 1.88 - 9.00) and the practice of self-medication to prevent COVID-19 (aOR 11.48 95% CI 3.36 - 39.25) were more likely to practice self-medication. Having children, employment status, and monthly income were not statistically significantly associated with self-medication in the adjusted analysis ($p > 0.05$). Table 48 below shows the results from the unadjusted and adjusted analysis.

Table 7: Unadjusted and adjusted analysis of statistically significant factors with self-medication

Variable	Categorization	Odds Ratio (OR)	Adjusted Odds Ratio (AOR)
Has children	No	1	1
	Yes	2.01 (1.12 - 3.59)***	1.32 (0.66 - 2.62)
Employment status	Unemployed	1	1
	Formal	2.31 (0.99 - 5.4)	1.02 (0.33 - 3.16)
	Informal	3.73 (1.76 - 7.92)**	2.51 (0.99 - 6.38)
Monthly Income	<500,000	1	1
	≥500,000	2.55 (1.12 - 5.82)*	2.38 (0.87 - 6.53)
Rents premises	No	1	1
	Yes	3.45 (1.9 - 6.25)***	3.49 (1.76 - 6.89)***
Agreement on prescription	Prescription always needed	1	1
	Sometimes or not needed	4.22 (2.06 - 8.65)****	4.11 (1.88 - 9)***
Self-medication to prevent COVID-19	No	1	1
	Yes	12.61 (3.87 - 41.15)***	11.48 (3.36 - 39.25)***

COVID-19=Coronavirus disease of 2019. Note significant codes at 1%. Outputs from logistic regression.

4.4.2 Qualitative analysis

A total of 18 medicine sellers from prominent drug-selling shops within the parishes were interviewed using the KII 5 (72.22%) of whom were female. On the perception of the frequency of self-medication among clients they served, almost all key informants highlighted that self-medication was very prevalent. The majority (94.44%) of medicines sellers remarked that clients often visited their premises to purchase drugs without a prescription. One interviewee notably said,

“If I'm to probably make it on a percentage basis, then it's 92%. Meaning that clients do often come and take antibiotics without prescription.” - KII 4F

It was also established that the majority 14 (77.78%) of medicine sellers often offered drugs to clients who came without prescriptions. However, some did express that an examination of the situation through inquiries with the customers was made before offering the medication requested.

“It depends on the condition. Most of the times when they come asking for antibiotics, we have to first assess why they are taking the antibiotics then we offer.” – KII 17M

Also, all the participants affirmed that they always provided medical advice regarding how the medicine should be taken even to patients that didn't provide a prescription at purchase. Only one drug seller did not have the NDA prescription book to be used for reference on prescriptions

"I do. I go further and write on the papers because I know they will take it for granted. There are drugs we take before, there are drugs we take with, and there are drugs we take after food. There are drugs that are supposed to interact with milk or fats. There are drugs that are supposed to be taken with fatty meals." - KII6F

"That is the best part, so we usually give advice from each drug they usually take" – KII5F

Pain killers and antibiotics are the most frequently mentioned category of drugs that people purchased without prescriptions, however, low-income earners were noted to be the most frequent purchasers of drugs without prescription. Also, 14/18 participants noted that they had monthly sales targets that they had to achieve for the drug store/pharmacy.

"Of course, you start a business with a target" – KII9M

The study also conducted a total of 5 FDGs with a participant range of 8-10 within 5 randomly selected villages from 5 randomly selected parishes that were conducted at village community halls in Makindye Division Office. The findings are presented about the inquiry and study objects in Table 5 below;

Individual factors were frequently mentioned as some of the factors influencing self-medication. These factors varied from the hesitance to seek health services even with the availability of money, the belief that some conditions could be addressed without the need of the opinion of qualified health professionals, the fear to go to the hospital and perception about the outcomes seeking and the future implications. For example, one respondent remarkably mentioned, *"So now people say aahhh I won't go there, cause you will be tested and get diagnosed with pressure, diabetes, you get told don't eat meat again, yet me personally I like it a lot."* – FGD2S3

Similarly, frequent mentions of socioeconomic influencers of self-medication were made. Mostly, the participants highlighted it as an issue of *"poverty"*. This was expounded to imply that often some community members could not afford the cost of seeking health services from a qualified health professional due to unaffordable costs. Affordability of medicines was also evident as some participants highlighted that borrowing medicines to treat self-diagnosed illness was common practice, *"... wanting to go to the neighbour to get some medicine yet it's not going to help, "* - FDG2 R2

On the other hand, among the health-system factors, it was frequently mentioned that the travel distances, patient-flow procedures and unexpected expenses at public health facilities deterred seeking of professional care in preference for self-medication. The most frequent medications used for self-medication included pain killers, antibiotics and antimalarials attributed to familiarity with symptoms of flu, cough and malaria.

Table 8: Summary findings and excerpts from the FGD

Objective area	Question	Excerpts
Individual factors that drive self-medication	Why do you think are some of the reasons that drive self-medication practices among people in communities in Makindye Division, Kampala District?	<p><i>“Money might be available, but at times i dont want to use it, yet i am sick,” –FDG3R2</i></p> <p><i>“Then also people not being able to see the doctor in time is also existent and all other issues they have mentioned but people also have fear” – FDG2R6</i></p> <p><i>“So now people say aahhh i wont go there, cause you will be tested and get diagonized with pressure, diabetes, you get told dont eat meat again, yet me personally i like it a lot” – FGD2S3</i></p> <p><i>“For example i have a headache, why should i go to hospital”,- FDG1R7</i></p>
Socioeconomic factors that compel self-medication	Do you think poverty, challenges in seeking public health care and individual perceptions lead to self-medication among people in the communities of Makindye Division?	<p><i>“...like my friend said some fear private hospitals because prices are high” – FGG R2</i></p> <p><i>“...wanting to go to the neighbor to get some medicine yet its not going to help,” - FDG2R2</i></p> <p><i>“... I went for a check up, costed me 100000ugx and the expense was heavy,” - FDG3SP3</i></p> <p><i>“We dont have money, people dont have money when you reach the hospital to see the doctor, the steps are many,” - FDG3R3</i></p>
Health-system-related factors which lead to self-medication	<p>Do you think poverty, challenges in seeking public health care and individual perceptions lead to self-medication among people in the communities of Makindye Division?</p> <p>What do you think are the common conditions that people in the communities of Makindye Division treat through self-medication?</p>	<p><i>“..yet i will take a ride i go to kisugu where the free goverment hospital when i dont have the fares to and fro plus being in the waiting line, getting there the medical officer might be or not around,” - FDG3R4</i></p> <p><i>“..and those expenses where one thinks of a long distance and contemplates where to go.” - FDG2S4</i></p> <p><i>“...even inquiring too you have to (pay for it),” - FDG3S7</i></p>

CHAPTER FIVE: DISCUSSION

This study examined the self-medication among people aged 18 and older in some parishes of Makindye division, Kampala, district, Central Uganda. The study found that almost ninety percent of adults in Makindye division practised self-medication. Moreover, the study also found that living in rented premises, a negative perception regarding seeking a qualified medical provider's prescription and the desire to prevent or treat prevent COVID-19 were more likely to practice self-medication. The study also found that other drivers of self-medication could include the desire to meet set performance sales targets set by some drug stores. Opportunities that could mitigate self-medication included inquiries and medical advice given by drug sellers at the point of purchase.

The self-medication rate observed by this study was high at 87.84% though slightly lower than the observations of a similar study among Kampala urban dwellers at 100% (Mbonye, 2014). However, the self-medication prevalence observed was also higher than was reported in Sudan at 70% (Awad *et al.*, 2017) and slightly lower than in an Indian rural community at 81.50% (Phalke, Phalke and Durgawale, 2006). The study findings affirm the recent reports of a rise in self-medication in Uganda (The Daily Monitor, 2021), however, earlier studies found the practice already high (Mbonye, 2014). This could be because, or could mean that self-medication in the general population in Uganda is high. Accordingly, this puts individuals at risk of devastating consequences such as the risk of death, drug toxicity, drug reactions and drug interactions attributed to self-medication (WHO, 2016). However, on a positive note, the high prevalence of self-medication, within some limits may have been advantageous for the quick relief of symptoms (Rodrigues, 2020), reducing the burden on a stretched health care system (WHO, 2000b; Padilla *et al.*, 2010; Rodrigues, 2020).

The study also found that participants whose households were located in rented premises were more likely to practice self-medication compared to those that owned their household premises. Household ownership especially in an urban area such as Makindye may be associated with an improved socioeconomic status or income. However, studies findings in Ethiopia (Kifle *et al.*, 2021), Eritrea (Araia, Gebregziabher and Mesfun, 2019), Sudan (Awad *et al.*, 2017) showed an increase in self-medication with income or socioeconomic status. To save costs on health expenditure, it is likely that participants from rented premises in

Makindye division could have been influenced to practice as is a finding in some studies (Padilla *et al.*, 2010; Haque *et al.*, 2019). A lower economic status (or poverty as mentioned by some participants in the FDG) compounded by the lack of health insurance challenges accessing comprehensive public health services and mistrust of caregivers can further increase self-medication in this category of people (Padilla *et al.*, 2010).

The study findings also showed that a negative perception regarding seeking a qualified medical provider's prescription increased the odds of self-medication. Considered one of the oldest forms of self-help health practice (Caamaño *et al.*, 2000; WHO, 2000b; Hassali *et al.*, 2011), it could generally lead to a mistrust of medical advice and medical advice-givers. Trust in the ability of caregivers to provide the necessary health services decreases self-medication (Padilla *et al.*, 2010). Disregarding medical advice could result in long intervals to presentation, diagnosis and treatment of diseases (Dulal *et al.*, 2020) influencing treatment outcomes (WHO, 2012a). Such include increasing the risk of drug resistance, morbidity, mortality, ineffective treatment, economic losses and drug wastage (Pagán *et al.*, 2006; Kayalvizhi and Senapathi, 2020). Consequently, poor treatment outcomes that may be attributed to the delayed seeking of care due to self-medication resulting from a negative perception towards seeking qualified medical care could result in a more negative perception regarding seeking medical advice which in turn will lead to more self-medication.

The findings of the study showed that participants who self-treated of COVID-19 were up to 13 times more likely to practice self-medication. Self-medication to prevent COVID-19 was observed by recent studies in Iran, Ethiopia and India (Quincho-Lopez *et al.*, 2021), in Togo (Sadio *et al.*, 2021), Peru (Quispe-Cañari *et al.*, 2021) and more so nationally (Dare *et al.*, 2021; The Daily Monitor, 2021). In this context, the increase in self-medication could be attributed to the fear of COVID-19 resulting in a need to treat it as early as possible that was compounded by limited access to health care services due to lock-down procedures. Also, given that COVID-19 typically reports signs and symptoms akin to such as those typically associated with self-medication (such cough, fever, aches and flu), this could have influenced decisions to self-medicate. Also, as noted by this study, such symptoms were the most frequently mentioned self-treated symptoms by the study participants in the FDG.

The study also found that other drivers of self-medication could include a desire to meet set performance sales targets set by the management of some drug stores. Although some medicines are approved by the Ministry of Health (MoH) and the NDA to be dispensed

without a prescription, such should be exercised with caution. One such possible tragic outcome can be related to the promotion and marketing of oxycontin during the opioid crisis in the early 2000s due to the offering of sales targets and incentives to medical representatives (Van Zee, 2009). This advertently led to over prescriptions as the medicine sellers attempt to reach targets thereby treating patients as customers to whom to sell products. On the otherhand, this could lead to a low emphasis on the assessment of the availability of prescriptions before drugs are sold. Although this arrangement works well for the business owners(Fugh-Berman and Ahari, 2007), it certainly doesn't work well for the patients and can lead to unintended outcomes.

Although this study observed a high prevalence of self-medication, the study also observed that even though a high number of people reported to drug shops without prescriptions, the medicines sellers, pharmacists or dispensers offered guidance on the use of medicines. This was complemented by the availability and reference to the NDA prescription book and could mitigate self-medication's negativeimplications especially for drugs that can be sold over the counter(Fenichel, 2004). However, caution is needed for this approach given that a more comprehensive understanding of the patient's condition is needed which a medicines seller may not be able to assess. On the other hand, this also provides an opportunity for the medicines seller to provide further advice regarding seeking further medical help from a more qualified professional.

The findings of this study have some limitations. First, a limited number of Makindey residents participated in the study findings. therefore, although the findings provide an in-depth understanding of the subject in the division that no other study has provided, the findings may not be sufficient to be generalizable to the entire population in Makindye Division. Second, as with all cross-sectional studies, the findings are limited to the point-in-time as when the study was conducted and do not guarantee to be previous or future behaviour. Finally, the findings of this study cannot be used to analyze behaviour over some time and are not able to determine cause and effect.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

This study aimed to assess the practice of self-medication among communities in Makindye-Kampala capital city. Without previous studies examining the subject specifically in the division, this study is a key resource and forms a basis for further exploration of the subject in the matter. The study findings showed that some individual, socioeconomic and health-system factors were associated with self-medication. A discussion explored the findings further in the previous chapter.

6.1 Conclusion

The study found a high prevalence (87.83%) of self-medication among adults in Makindye division practised self-medication. Among the individual factors, there were no factors established to be statistically significantly associated with self-medication. However, the qualitative finding showed that individual perceptions regarding seeking qualified help and perceptions towards self-medication influenced the prevalence of self-medication. The study also found that among the socioeconomic factors, living in rented premises was associated with a higher likelihood of self-medication. Similarly, the study also found that the affordability of qualified medical health was one of the main reasons why participants practised self-medication. Finally, the provider-related factors associated with self-medication was a negative perception regarding seeking a qualified medical provider's prescription and the desire to prevent or treat prevent COVID-19. This was complemented by the long distances travelled to the health facilities in addition to the long lines and lengthy processes at the health facility.

6.2 Recommendations

- (i). Through the NDA, the MoH should enforce the requirement of prescription by medicines sellers for purchasing prescribable drugs. Also, the MoH should develop behaviour change communication strategies aimed at changing the perception of people regarding seeking a prescription from a qualified medical professional.
- (ii). The MoH should avail local councils with information and communication materials that discourage self-medication, especially that related to COVID-19 prevention/treatment. Through this support, the MoH and local councils should

conduct village health talks or leverage popular radio shows to disseminate information on the prevention of COVID-19 related self-medication.

- (iii). The Division Health Officer should conduct support supervisory work to ensure that medicine sellers prioritize patientcare (providing needed services) instead of achieving sales targets which may result in selling drugs without a prescription.
- (iv). Medicine sellers should diversify the number of services offered, for example, they should include services of a physician/doctor at their premises such that patients without prescriptions are adequately managed.
- (v). The MoH/NDA/PSU and local offices should engage and sensitize the community on the dangers of self-medication, also, MoH/NDA/PSU should continuously enforce keeping copies of prescriptions.
- (vi). MoH/NDA should support the local councils to provide complementary supervision for the medicines sellers to ensure that the right process is followed. This includes capacity building of local councils and village health teams on self-medication so that they can sensitize the community and enforce laws. This is because the local councils have structures available to directly support such processes.
- (vii). Finally, professional bodies such PSU and the Allied health Professional council should ensure that drug shops/pharmacy supervisors are always available at the premises to execute their professional duties including the enforcement of the required standards of operations.

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APPENDICES

APPENDIX I: INFORMED CONSENT TO PARTICIPATE IN RESEARCH

I am/We are asking you to take part in a research study called: **Assessment of self-medication practices in pharmacies in Makindye division**

The person who is in charge of this research study is **JOSEPH ZZIWA**. The research will be conducted in Makindye Division, Kampala District.

Purpose of the study

The purpose of this study is to:

- To identify individual factors that drive self-medication practices among communities in Makindye Division, Kampala District.
- To identify social-economic factors that compel self-medication among communities in Makindye Division, Kampala District.
- To determine facility-related factors which lead to self-medication among communities in Makindye Division, Kampala District.

Study Procedures

You are being asked to participate in this study, as you are a Makindye Division Resident who can help us to better understand self-medication practices in the division.

If you take part in this study, you will be asked to:

- Take part in a one-time, one-on-one, semi-structured interview;
- The interview will take approximately 25 minutes;
- The interview will take place at a location most convenient to you as the participant;
- The interview will be transcribed, in the form of field notes, to ensure accuracy in reporting your statements

Benefits

There may be no direct benefits associated with your participation in the study, but the information you will provide will be useful in informing strategies towards reducing self-medication in the community.

Risks or Discomfort

This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study

Compensation

No research participants will be compensated for participating in this study.

Privacy and Confidentiality

We will keep your study records private and confidential. Certain people may need to see your study records. By law, anyone who looks at your records must keep them completely confidential. The only people who will be allowed to see these records are:

The research team, including the Principal Investigator and those involved with the study.

I may publish what I have learnt from this study. If I do, I will not include your name. I will not publish anything that would let people know who you are. This study does not require you to provide your name as part of the interview.

Voluntary Participation / Withdrawal

You should only take part in this study if you want to volunteer. You should not feel that there is any pressure to take part in the study. You are free to participate in this research or withdraw at any time. There will be no penalty or loss of benefits you are entitled to receive if you stop taking part in this study.

You can get the answers to your questions, concerns, or complaints. If you have any questions, concerns or complaints about this study, or experience an adverse event or an anticipated problem, contact the researcher on 0702524991

If you have questions about your rights as a participant in this study, general questions, or have complaints, concerns or issues you want to discuss with someone outside the research, call the CIUREC Chairperson Dr. Samuel Kabwigu on (0312307400) & the executive secretary of UNCST on (0414-705500) respectively.

Assessment of understanding

Please check which box best describes your assessment of understanding of the above informed consent document:

- I have read the above informed consent document and understand the information provided to me regarding participation in the study and benefits and risks. I give consent to take part in the study and will sign the following page.
- I have read the above-informed consent document, but still have questions about the study; therefore I do not give yet given my full consent to take part in the study.
- I have read the above-informed consent document and understand the information provided to me regarding participation in the study and the benefits and risks. I give consent to take part in the study and will sign the following page.
- I have read the above-informed consent document, but still have questions about the study; therefore, I do not give yet given my full consent to take part in the study.

Signature of Person Taking Part in Study Date

Name of Person Taking Part in Study

Thumb print of Person Taking Part in Study

Signature of Person Obtaining Informed Consent/Research Authorization
Date

Name of Person Obtaining Informed Consent/Research Authorization

INFORMED CONSENT TO PARTICIPATE IN RESEARCH – LUGANDA

Nsaba/Tukusabaokubeera mu

kunonyerezakwaffeokwa: **Okukozesaeddagalamubutaliwobwaendagiriroyomusawo muMakindye division**

Omuntuakuliraokunonyezebwakuno ye **JOSEPH**

ZZIWA. Okunonyezebwakunokugendakukolebwa muMakindye Division, Kampala District.

Ekigendererakyokunonyezebwa

Ekigendererakyokunonyezebwakweku:

- Okumanyaebintuebigufaokukozesaeddagalamubutaliwobwaendagiriro you musawoeriabantuabbeera muMakindye Division, Kampala District.
- Okumanyaebintuebye'nfuna ne bwabulioebigufaokukozesaeddagalamubutaliwobwaendagiriro you musawoeriabantuabbeera muMakindye Division, Kampala District.
- Okumanyaebintuebyamalwaliroebigufaokukozesaeddagalamubutaliwobwaendagiriro you musawoeriabantuabbeera muMakindye Division, Kampala District.

Entegekey'okunonyezebwa

Osabidwaokubeera mu kunonyezebwakunokubangaobeera mu Makindye Division, ekiteegezantiosobolaokutuwabwinoasobolaokutuyambaokutegeeralwakiabantu mu Makindyebakozesaedaggalaewatalibuwandikirebwamusawo.

Bwokirizaokubamukunonyerezakuno, ojakusabibwabino;

- Okubuzibwaebibuuzoomulundigumugwoko mu kunonyezebwakuno;
- Okubuzibwakujakutwalaedakiikaabiiri mu taano;
- Okubuzibwakolebwa mu kiifokyoyagala

Amagoba

Tewalimagobagajjakuwebwakulwokubeera mu kunonyezebwakunonaye, okujumbirakwokujjakuyambaokufunabwinoeyetagisibwaokuyamabaebyeddagala mu gombololalino.

Okufirwaobaokuweebwaobuzibu

Tewalikyojakufirwangaetanye mu kunonyerezakuno, naye, mpoziobuddebwo.

Okubagiza

Okunonyezebwakunotekujjakuwayokukubagizakwona.

Okukuumaebyaama

Tujjakuteleka bwino gwotuwamukyaama. Waliwo abanasoma mu byotowadde, naye, nabobajjekusomamukyaama. Ate ekirara, okukuumabyoyogeedangaekyamakateeka ate erinnyalyotelyetagsibwa. Obaantu akakirizibwa okutunula mu bwotugamba be ba; Abateese okunonyereza kunongamulunenanyikukulira okunonyezebwa. Ebi vuddemukunonyezebwabiyinza okuba my alipootanayebwekibabwekityo, erinnyalyotelijjakuteekebwamu ate eeratetyetaagamubibuuzo.

Okubeere mu kunonyebwakunokwakweyagidde

Gweasalawookubeera mu kunonyezebwakuno, era tokakidwa. Ne bwobwaokiriza okubeera mu, obobola okuva amuesa awayonangatobonabone bwozamungeriyona. Okubuzakwonaobaensonga zonazolina osobolatokuzilopa we Zziwa Joseph to nambayessimu 0702524991 Ekirara, okubuzakwonaobaensongazonazolina osobolatokuzilopa we Zziwa Joseph to nambayessimu CIUREC Chairperson Dr. Samuel Kabwigu on (0312307400) oba the executive secretary wa UNCST ku (0414-705500).

Okukakasaokutweeerwa

Wandiikawansiwanobwobaoketegeddenokirizaebyoebikuteegezedwawagulu:

Nsomyenetegeraebikwatakukunonyezebwakuno era

tewalikyenzakirara.Mpadeyookukirizakwangeokubayo mu kunonyezebwakuno era ntadekkoomukonogwangewamanga

Nsomyenetegeraebikwatakukunonyezebwakunonayenkaylinakyenbuzaekirara.Siwadeyookuk irizakwangeokubayo mu kunonyezebwakuno era ntadekkoomukonogwangewamanga

Nsomyenetegeraebikwatakukunonyezebwakuno era

tewalikyenzakirara.Mpadeyookukirizakwangeokubayo mu kunonyezebwakuno era ntadekkoomukonogwangewamanga

Nsomyenetegeraebikwatakukunonyezebwakunonayenkaylinakyenbuzaekirara.Siwadeyookuk irizakwangeokubayo mu kunonyezebwakuno era ntadekkoomukonogwangewamanga

Omukonogomuntuakirizaokubeera mu konomyezebwakunoOlunaku

Erinnyalyomuntuakirizaokubeera mu konomyezebwakuno

Ekiwanyikyomuntuakirizaokubeera mu

konomyezebwakuno

Omukonoasabyeokubeera mu konomyezebwakuno Olunaku

Erinyalyomuntuasabyeokubeera mu konomyezebwakuno

APPENDIX II: QUESTIONNAIRE

LUGANDA TRANSLATION

PARTICIPANT'S QUESTIONNAIRE FOR ASSESSMENT OF SELF MEDICATION PRACTICES IN PHARMACIES IN MAKINDYE DIVISION

Introduction

Hello, I am requesting you to voluntarily participate in this study “AN ASSESSMENT OF SELF-MEDICATION PRACTICES AMONG COMMUNITIES IN UGANDA: A CASE STUDY IN MAKINDYE DIVISION-KAMPALA” by providing us with information sought to fill this questionnaire. The results of such a study may or may not benefit you directly. The whole interview takes will approximately 10-15 minutes and I appreciate your sincere participation. Your information will be kept very confidential.

Date

Parish

Village

Questionnaire Code

No	Question	Response (Circle as applicable)
Section 1: Individual factors		
1	What is your age in completed years?	_____
2	Gender	1. Male 2. Female
3	What is your marital status?	1. Married 2. Unmarried
4	From what area of Uganda is your ethnicity?	1. Central 2. Western 3. Northern 4. Eastern
5	What is your religion?	1. Catholic 2. Protestant 3. Moslem 4. Other
6	What is the highest level of education attained by you?	1. None 2. Primary 3. Secondary 4. Tertiary/University level
7	How many children do you have?	1. No children 2. ≤ 3 children 3. >3 children

8	How many people live in your household?	_____
Section 2: Socioeconomic factors		
9	What do you do for a living?	1. Formally Employed 2. Informally employed 3. Unemployed
10	What is your monthly income?	1. None 2. < 250,000/= 3. 250,000 - 500,000/= 4. >500,000/=
11	Do you rent your residence?	1. No 2. Yes (\leq 100,000 per month) 3. Yes (100,000 - 250,000 per month) 4. Yes ($>$ 250,000 per month)
12	Description of the place of residence (To be visually inspected)	1. Temporary (Includes slums, non-cement, non-roofed or non-plastered) 2. Permanent
Section 3: Health system-related factors		
13	How far is your home from your nearest drug shop?	1. <1km 2. 1 - 5 Km 3. >5km
14	Is your nearest drug shop also a health facility/clinic/hospital?	1. Yes 2. No
15	How far is your home from your nearest health facility/Clinic/hospital?	1. <1km 2. 1 - 5 Km 3. >5km
16	What means of transport do you often use to go to the drug shop?	1. Motorcycle 2. Car 3. Walk 4. Other
Section 4: Self-medication		
18	(a) Have you bought drugs without a prescription within the past year?	1. Yes 2. No

	18 (b) If Yes to the above, how many times? (If not skip to question 24)	_____
19	What was your reason for buying drugs without a prescription?	<ol style="list-style-type: none"> 1. It was cheaper 2. It was convenient 3. I do not need a doctor's advice 4. I knew how to use the medicine 4. Other
20	What conditions do you usually buy medicine for without a prescription?	<ol style="list-style-type: none"> 1. Cough or Flue 2. Pain (headache and muscle) 3. Fever 4. Other, specify _____
21	What category of medicine do you usually buy from a drug shop without a prescription?	<ol style="list-style-type: none"> 1. Antibiotic 2. Pain killer 3. Antimalarial 4. Other, specify _____
22	Who influenced your selection of the medicine you purchased?	<ol style="list-style-type: none"> 1. Drug shop attendant/pharmacist 2. Family member or friend 3. Experience or personal research 4. Advert/Media/TV 5. Other, Specify _____
23	Did you check for, know, or ask for instructions on how to use the medicine?	<ol style="list-style-type: none"> 1. Yes 2. No
24	Do you think that self-medication is dangerous?	<ol style="list-style-type: none"> 1. Yes 2. No
25	Which of these statements do you agree with?	<ol style="list-style-type: none"> 1. I need a prescription to take any medicine 2. I do not need a prescription to take some medicines. 3. I can treat some diseases without going to a doctor or health facility.
26	Have you provided any of these medications without a prescription to a child?	<ol style="list-style-type: none"> 1. Antibiotic 2. Pain killer 3. Antimalarial

		<p>4. Other, specify _____</p> <p>5. None</p>
27	What do you think is the major consequence of self-medication?	<p>1. Toxicity</p> <p>2. Wrong treatment</p> <p>3. Drug resistance</p> <p>4. Death</p>
28	Have you taken any drugs without prescription to prevent you from contracting or treat COVID-19?	<p>1. No</p> <p>2. Yes</p>
29	Do you have any frequent illnesses?	<p>1. No</p> <p>2. Yes</p>
30	What two forms of media do you have consistent access to? Circle as applicable	<p>1. Television</p> <p>2. Radio</p> <p>3. News Papers</p> <p>4. Phone</p>
31	Do you routinely keep any drugs at home?	<p>1. Antibiotic</p> <p>2. Pain killer</p> <p>3. Antimalarial</p> <p>4. Other, specify _____</p> <p>5. None</p>

**OKUKOZESA EDDAGALA MUBUTALIWO BWA ENDAGIRIRO YO MUSAWO
MU MAKINDYE DIVISION**

Okyanjula

Nkulamusiza,

nkusambaodemumebibuzobinowamangamumazima.Tujjakutwalaebaangalyadakiikakuminata
ano.Webalenyo era tugendekugobererabyetusubizawaguluokukuumabyoyogera mu kyaama.

Olunakulwomwezi

Omuluka

Ekyaalo

Enaambayokunonyezebwa

No	Ekibuuzo	Enziramu (Teekakosaako)
Ebisooka: Ebikwatako		
1	Owezaemyakae mekka?	_____
2	Olibuzaaleki?	1. Musajja 2. Mukazzi
3	Olimumfuumbo?	1. Mufumbo 2. Si'mufuumbo
4	Egwangalyoliva wa?	1. Mu'Central 2. Mu'Western 3. Mu'Northern 4. Mu'Eastern
5	Oliwadiinikki?	1. Katuliki 2. Poto 3. Musilaamu 4. Kilala
6	Wakomakusom awa?	1. Sasoma 2. Pulayimale 3. Secundare 4. YunivasiteobaKolelero
7	Olinaabaanaba mekka?	1. Sirina 2. Wansiwabasatu 3. Basuka mu basatu

8	Muberamubame kkamunyumabe no?	_____
Ebyokubiri: Ebyenfunane'nsiiba		
9	Okolamulimuki ?	1. Emirigirize 2. Egitalimirigirze 3. Sirina
10	Ofunassenteme kkakumulimu?	1. Sifuna 2. < 250,000/= 3. 250,000 - 500,000/= 4. >500,000/=
11	Olimupangisa?	1. Nedda 2. Yye(\leq 100,000 bulimwezi) 3. Yye (100,000 - 250,000 bulimwezi) 4. Yye (>250,000 bulimwezi)
12	Bwoberawabeer awatya?	1. Ekizimbeekitalikigumu 2. Ekizeekigumu
Ekyokusatu: Ebyamalwaliro		
13	Waliwobangaki otutuukaewasin gaokuumpibwo gulaedagala?	1. <1km 2. 1 - 5 Km 3. >5km
14	Ewasingaokum pibwogulaedaga padwaliro?	1. Yye 2. Nedda
15	Waliwobangaki otutuukaedwalir oewasingaokuu mpi?	1. <1km 2. 1 - 5 Km 3. >5km
16	Okozesantabula kiokutuukakub wogulaedagala?	1. Pikipiki 2. Motoka 3. Bigere 4. Ekirara

Ekyokuna: Okukozeaeddagalaewatalibulagirirebwamusawo

18	(a) Mu mwakagunuema bega, waliokukoze sae ddagalaewatali bulagirirebwamu sawo?	1. Yye 2. Nedda
	18 (b) Bwekikangayye wagulu, mirundiemekka ? (bwebaneddage ndaku 24)	_____
19	Lwakiwakoze sae ddagalaewatali bulagirirebwamu sawo?	1. Kyabeeyintoono 2. Kyanguwa 3. Seetagabulagirize 4. Nalimanyiokukoze sae daggala 4. Ekirara
20	Ojanjakieddagala ewatalibulagiri rebwamusawo?	1. Kifubaobasenyiga 2. Bulumibwamutweobamubiri 3. Musujja 4. Ekirara; _____
21	Dagalakilyotera okugulaewatali bulagirirebwamu sawo?	1. Elitaobuwuka 2. Elyobulumi 3. Elyomusujja 4. Ekirara, _____
22	Aniyakukubiriz aokugulaeddagala ewatalibulagiri rebwamusawo?	1. Omutunzikudwaliro 2. Owewakaobaomukwano 3. Obumanyirivubwange 4. Byenalabaku TV obaemitimbagano 5. Ekirara _____

23	Wakeberaengeri yokukozesamue daggala?	1. Yye 2. Nedda
24	Olowozaokukoz esaeddagalaewa talibulagirirebw amusawokyabul abe?	1. Yye 2. Nedda
25	Okirizakkubino ?	1. Netaagaobulagirizebwomusaawookutwalaedaggalalyona 2. Seetaagaobulagirizebwomusaawookutwalaedaggalalyona 3. Nsobolaokujambaendwaddeezimuewatalubulagirizebwomusaaw ookutwalaedaggalalyona
26	Waliowadekoed agalilinoeliomw annaewatalibula girirebwamusa wo?	1. Elitaobuwuka 2. Elyobulumi 3. Elyomusujja 4. Ekirara,_____
27	Olowozakikieki yinzaokuva mu kukozesaeddaga laewatalibulagir irebwamusawo	1. Obutwabwedagala 2. Okujambaokufu 3. Eddagalaokulekelaawookukola 4. Okufa
28	Waliokozesezae ddagapaewatali bulagirirebwam usawookujanjab aobaokwekuma eri COVID-19?	1.Nedda 2. Yye
29	Otelaokulwala?	1.Nedda 2. Yye

30	Mukutukkiebiri gyosingaokukoz esa?	<ol style="list-style-type: none"> 1. TV 2. Radio 3. Mawulire 4. Ssimu
31	Dagalakkilyoter aokubanalyoew aka?	<ol style="list-style-type: none"> 1. Elitaobuwuka 2. Elyobulumi 3. Elyomusujja 4. Ekirara, _____

APPENDIX III: KEY INFORMANT INTERVIEW GUIDE

My name is Joseph Zziwa, a student at Clarke International University pursuing a Master's Degree in Public Health. As part of the requirements for the degree, I am conducting a study on titled "AN ASSESSMENT OF SELF-MEDICATION PRACTICES AMONG COMMUNITIES IN UGANDA: A CASE STUDY IN MAKINDYE DIVISION-KAMPALA". This study aims to gather information about self-medication but also learn from you issues surrounding self-medication. As a person working in a medicine store, you are in a unique position to bring give an insight on the study subject. This study will not be collecting any personally identifying information, your participation in this study is voluntary, and you are free to withdraw at any point without penalty. Every attempt will be made to keep your participation and the information you are providing confidential and anonymous. I thank you for your cooperation and look forward to our work with you

Parish: _____

Village: _____

Interview location code: _____

1. How often do people report to your drug store to buy an antibiotic drug without a prescription
2. How often do you offer people without a prescription the drugs they request?
3. Do you make an effort to establish the reasons why they are requesting the drug?
4. Do you provide any advice regarding the need to see a doctor for a proper prescription?
5. Do you provide any medical advice regarding how to take the drugs requested without a prescription
6. Do you have a National Drug Authority Prescription book?
7. What could be the reason you or another person may sell a drug to a client without a prescription?
8. What class of drugs are most frequently requested/purchased at your store without a prescription?
9. Which category of people normally come here to buy drugs without a prescription?
10. Do you have daily or monthly drug sales targets that you need to achieve for the smooth operation of the store?

APPENDIX IV: FOCUS GROUP DISCUSSION GUIDE

My name is Joseph Zziwa, a student at Clarke International University pursuing a Master's Degree in Public Health. As part of the requirements for the degree, I am conducting a study titled "AN ASSESSMENT OF SELF-MEDICATION PRACTICES AMONG COMMUNITIES IN UGANDA: A CASE STUDY IN MAKINDYE DIVISION-KAMPALA". This study aims to gather information about self-medication but also learn from you about issues surrounding self-medication. As a person working in a medicine store, you are in a unique position to bring give insight into the study subject. My assignment here is to moderate our discussion so as you express your opinion. I also request your permission to record this discussion both on paper and tape so that each opinion expressed here can be referenced later. If you agree to participate in this study, we will interview you. Please know that your participation in this study is voluntary and you are free to withdraw at any point without penalty. Your participation and the information you are providing will be kept confidential and anonymous. I thank you for your cooperation and look forward to our work with you. Our discussion will follow the themes below:

- i. Why do you think are some of the reasons that drive self-medication practices among people in communities in Makindye Division, Kampala District?
- ii. Do you think poverty, challenges in seeking public health care and individual perceptions lead to self-medication among people in the communities of Makindye Division?
- iii. What do you think are some of the medicines that people in the communities of Makindye Division use for self-medication?
- iv. What do you think are the common conditions that people in the communities of Makindye Division treat through self-medication?

APPENDIX V: INTRODUCTORY LETTER



(+256) 0312 307400

www.ciu.ac.ug

8th Oct 2021



Dear Sir/Madam,

RE: ASSISTANCE FOR RESEARCH

Greetings from Clarke International University (CIU) - Formerly International Health Sciences University (IHSU).

This is to introduce to you Mr. Joseph Zziwa Reg. No. 2020 MPH-WKD-F04 a student of our university.

As part of the requirements for the award of a Master of Science in Public Health, the student is required to carry out field-based research for the submission of a Research Dissertation.

Joseph would like to carry out research on issues related to: **Assessment of self-medication practices among communities in Uganda, A case study of Makindye Division, Kampala.**

I therefore request you to render the student such assistance as may be necessary for the success of his research project.

I, and indeed the entire University Administration would like to thank you in advance for the assistance you will render to the student.

Sincerely yours,

[Handwritten signature]

Alege John Bosco
Senior Lecturer / Dean



#Make a Difference

Plot 1717 | Bukasa | Kyeyitabya
P.O. Box 7782 Kampala, Uganda

APPENDIX VI : APPROVAL LETTER FROM RESEARCH ETHICS COMMITTEE



(+256) 0312 307400
rec@ciu.ac.ug
www.rec.ciu.ac.ug

09/12/2021

To: Joseph Zziwa

0776524991

Type: Initial Review

Re: CLARKE-2021-259: ASSESSMENT OF SELF-MEDICATION PRACTICES AMONG COMMUNITIES IN UGANDA: A CASE STUDY IN MAKINDYE DIVISION-KAMPALA, 2, 2021-11-08

I am pleased to inform you that at the **25th** convened meeting on **09/12/2021**, the Clarke International University REC, committee meeting, etc voted to approve the above referenced application.

Approval of the research is for the period of **09/12/2021** to **09/12/2022**.

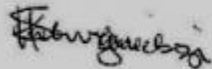
As Principal Investigator of the research, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the protocol or the consent form must be submitted to the REC for re-review and approval **prior** to the activation of the changes.
3. Reports of unanticipated problems involving risks to participants or any new information which could change the risk benefit: ratio must be submitted to the REC.
4. Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by participants and/or witnesses should be retained on file. The REC may conduct audits of all study records, and consent documentation may be part of such audits.
5. Continuing review application must be submitted to the REC **eight weeks** prior to the expiration date of **09/12/2022** in order to continue the study beyond the approved period. Failure to submit a continuing review application in a timely fashion may result in suspension or termination of the study.
6. The REC application number assigned to the research should be cited in any correspondence with the REC of record.
7. You are required to register the research protocol with the Uganda National Council for Science and Technology (UNCST) for final clearance to undertake the study in Uganda.

The following is the list of all documents approved in this application by Clarke International University REC:

No.	Document Title	Language	Version Number	Version Date
1	Protocol	English	2	2021-11-08
2	Risk management plan (updated)	English	2	2021-11-08
3	Informed Consent forms	English	1	2021-11-04
4	Data collection tools (Questionnaire)	Luganda	1	2021-11-04
5	Data collection tools (FGD guide)	English	1	2021-11-04
6	Data collection tools (KII)	English	1	2021--04
7	Informed Consent forms	Luganda	1	2021-11-04

Yours Sincerely



Samuel Kabwigu
For: Clarke International University REC