**ENSIGN COLLEGE OF PUBLIC HEALTH, KPONG EASTERN REGION, GHANA**


**SELF-MEDICATION WITH ANALGESICS AND ANTIBIOTICS - A SURVEY AMONG TRADERS AT THE AKOSOMBO MARKET OF THE ASUOGYAMAN DISTRICT IN THE EASTERN REGION, GHANA**


**SUBMITTED BY**

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**A Thesis submitted to the Department of Community Health in the Faculty of Public Health in partial fulfillment of the requirements for the degree**

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## DECLARATION AND CERTIFICATION

I, Lydia Debrah, declare that this submission is my own work towards the Master of Public Health (MPH) degree, and that to the best of my knowledge, it contains no material formerly issued by another person nor material which has been approved for the honours of any other degree of the University, except where due accreditation has been made in the text.

14/06/2020

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## DEDICATION

This work is dedicated to Almighty God for his unending love and ceaseless grace that brought me to the point of pursuing my Master's degree and for seeing me through the programme successfully. I also dedicate it to my parents, family and friends for their infinite support and urging me on to this point of my life.

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Lydia Debrah, 2020.

# DEFINITION OF TERMS

Sex                        Being male or female

Analgesic                  Any drug that acts to relieve pain

Antibiotic                 A medicine that inhibits the growth or destroys

microorganisms.

Indication                 Symptom that suggests certain medical intervention is  needed

# LIST OF ABBREVIATION

NSAIDS                                    Non-steroidal Anti -inflammatory Drugs

OTC                                       Over The Counter

URTI                                      Upper Respiratory Tract Infections

UN                                        United Nations

USA                                       United States of America

WHO                                       World Health Organization

# ABSTRACT

**Introduction:** Self-medication is often defined as using drugs to self-treat a common health problem without the advice of a medical practitioner. Self-medication is recurrent in both advanced and developing countries but excessive in developing countries. Many factors inform the choice to self-medicate. The focus of this research was on traders who spend most of their lives exposed to constant stress, while trying to perform at the highest level. The combination of chronic stress and an unbalanced lifestyle make them prone to acute and chronic conditions needing treatment but due to the busy nature of their work and fear of losing money, they hardly seek professional medical attention. This study thus sought to investigate the practice of self-medication with analgesics and antibiotics among traders.

**Methodology:** Traders at the Akosombo market in the Asuogyaman District of the Eastern region of Ghana were engaged through a cross-sectional, non-probability sampling; specifically convenience sampling approach. Printed structured questionnaires were used for data collection between February 2020 and March, 2020. Data was entered with Microsoft Excel 2016 and analysis done using Stata version 14.0. Descriptive statistical analysis was carried out to obtain summary tables. Inferential statistics such as chi-squared and Fisher's exact tests were used to measure the strength of association between the outcome variable and the predictor variables and p values of $< 0.05$ were considered statistically significant. Multivariate logistic regression analysis was carried out to determine adjusted odds ratios.

**Results**: Two hundred and forty-six (246) traders; 63.4% females and 36.6% males with mean age of 32.5 ($\pm 7.53$) years participated in the study. Prevalence of analgesic self-medication was 100.0%, with paracetamol being reported as the most common analgesic. Headache was the most common indication for analgesic use. Prevalence of antibiotic self-medication was 89.4%. Antibiotics were used mainly for upper respiratory tract infections.

The most commonly used class of antibiotics was the penicillins. Traders between the age brackets of 31 to 45 years were more likely (OR = 2.57, 95%CI; 1.02-6.41) to use antibiotics for self- medication. Traders with secondary/middle and vocational level of education were more likely to use antibiotics compared to those with no formal education. Community pharmacists (63.2%) were the main source of information on analgesics and antibiotics.

**Conclusion:** The prevalence of self-medication with analgesics and antibiotics were high among the traders. There is the need for immediate regulatory enforcement and rigorous public health education on the adverse effects of self-medication.

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# CHAPTER ONE

# INTRODUCTION

## 1.1 Background Information

Self-medication is often defined as using drugs to self-treat a common health problem without the advice of a medical practitioner (Sherazi *et al.*, 2012). Self- medication also involves the use of non-prescription medicines at one's discretion, resubmitting old prescriptions to acquire medicines time and again or sharing medicines with members of one's social ties. Self-medication is common in both advanced and developing countries but excessive in developing countries, due to the escalation of drug accessibility without prescription (Esan *et al.*, 2018). Starting from the presumption that no pharmacologically active compound is safe to the body, self- medication could be detrimental to individual and collective health (Kaur Bhatia *et al.*, 2017).

The World Health Organization recommends self-care and reasonable self-medication (World Health Organization, 2009). Self-medication may have some advantages if individuals use medicine auspiciously, such as empowering individuals to take care of themselves and be responsible for their health and further minimize healthcare costs ; however, appropriate self-medication does not insinuate lack of risk (Lee *et al.*, 2017). Several studies have revealed that over-the-counter (OTC) use corresponds with unpropitious health reactions and death. Self-medication poses threats if individuals use medicine inadequately. The dangers of self-medication include erroneous self-diagnosis, delay in seeking medical guidance, use of outrageous dosages, pro drug-use , adverse effects, drug interactions, polypharmacy, and drug abuse (Lee *et al.*, 2017).

Self-medication is a universal issue, common in developed, developing, and under developed countries. In 1990, it was estimated that between 70% and 90% of all illness episodes were managed by some form of self-treatment before it came to the attention of health professionals (Segall, 1990). Afolabi, (2008), estimates that in the United Kingdom almost 50% of all health care among people takes place by means of self-medication.

A study by Donkor *et al.*, (2012), has shown that irrational use of antibiotics through self-medication appears to be a usual habit among tertiary level scholars in Accra and it could be hypothesized that this is the trend in Ghana. There is also some proof of antibiotic misuse at the hospital level in Ghana and these observations give a clear picture about the abuse of antibiotics in Ghana and retorts the increasing trend of antibiotic resistance in the country.

 While irrational use of antibiotics through self -medication tends to have more consequences in the developing world, the problem has been researched in only a few of these countries. In Ghana, variety of antibiotics are accessible on the market and purchasing drugs over the counter is a very routine. This facilitates self-medication which is thought to be highly prevalent in the Ghanaian community, though there are hardly any studies to support this and thus. results in treatment failures and several clinical complications for people practicing self-medication.

The use of analgesics is pervasive. Some analgesics are classified as over-the- counter drugs and some are not.  Side-effects experienced may vary with different people and overuse could be pernicious. These issues could be diminished by raising people's awareness of the indications, contraindications and adverse effects of these drugs(Sarahroodi *et al.*, 2012).

Practiced globally, self-medication is a major  public health concern, with a reported prevalence of 0.1% in northern and western Europe, 21% in Eastern Europe, 27% in USA. In developing countries, reported self-medication prevalence rates are much higher with e.g. 84% in Pakistan, 78% in Saudi Arabia, 67% in Nigeria and 79% in India (Limaye *et al.*,

2018). Several Nigerians, usually underrate ailments such as headache, fever, cough, throat infection, common cold and stomach ache while, some consider some illnesses to be too mild to require medical counsel. Demographic factors were found to determine self-medication. For instance, gender, age, sex and social role were found out to have influence on self-medication. Studies disclosed higher prevalence of self-medication among males than females while some scholars found no strong link with gender (Awosusi and Konwea, 2015).

## 1.2 Problem Statement

Self-medication is a problem of public health concern since it is one of the major causes of health complications and side effects. The issues linked to self -medication are very vast and its consequences cannot be underestimated. This is because, self-medication has social and economic implications to both the individual and the community.

In a booklet setting out the role of pharmacists in self-help and self-medication, WHO (1998) stated that, "in many developing countries, the ratios of pharmacists and pharmacies to population are so low that access to pharmaceutical care is impeded. In such cases, consultation with other health workers or community health care workers, household careers and other appropriate lay people, provided they have received the appropriate pharmaceutical training and orientation, should be encouraged".

Several studies have revealed the use of sub therapeutic and frequent use of antibiotics and other prescription only medicines. A review of the current practices in the use, safety and basis for allopathic drug use has concluded that, it would be safe if the people who are using such drugs had adequate information about its dosage, time of intake and adverse effects since the lack of information led to serious effects (Kumar et al., 2013).

There are difficulties in accessing medical care in several places in Ghana. Consequently, self-medication is habitual among Ghanaians.  It is common for Ghanaians to self-medicate first instead of seeking professional medical care when ill. This behavior among the general Ghanaian populace is to reduce cost of consultation and the cost of transportation to and from hospitals or health care facilities. Consequently, difficulties and inconveniences in accessibility to and use of professional health care is a significant challenge for the government. This challenge includes reducing self-medication practices and promoting good health seeking behaviors among Ghanaians (Agyei-boateng, 2015).

In this study, the focus will be on traders who spend most of their days and lives with their goods either sitting down or actively moving about and being exposed to constant stress, whilst trying to perform at the highest level. As traders, they are constantly exposed to a level of stress from the time they pull the trigger on their trades, to the time when they manage their trades and react to the market volatility until the moment when they close their trade. The combination of chronic stress and an unbalanced lifestyle  makes these traders prone to acute and chronic diseases. Due to the busy nature of their work and the inherent fear of losing money should they not go to the market place to trade, they are hardly likely to seek professional medical attention when unwell. Their tendency to self-medication when unwell is high.

It is apparent that the anomaly of self- medication has negative impacts on public health therefore the need for research to reveal the extent and diverse elements ing the practice amongst this group of people in the society. Traders form an essential component of the community and so therefore the purpose of this study on self-medication particularly with antibiotics and analgesics amongst traders. The study area for this research was the

Akosombo Market. The findings will help improve the effectiveness of public health awareness campaigns which will promote judicious and safe drug use.

## 1.3 Significance of the study

Self-medication research has a significant role in health care and in the further advancement of public education. Studies have found out that medical and health science students are more inclined to practice self-medication often. Research done in India in two stages revealed the prevalence of self-medication practices among students were 74.6% and 69.4%, respectively (Patel *et al.*, 2013).

Various self-medication systematic reviews have been written for specified groups like adolescents, elderly population and medical students, etc. or for a certain country or for a particular disease. However, the general public or the layman may not have the right information to make decisions about their health and to compound the problem is their easy accessibility to drugs. Hence the of this research is to identify the extent of self-medication in a layman population and factors that influence their choice of drugs.

Antimicrobial resistance is an important issue which caused the head of the UN General Assembly to hold a one-day high-level meeting on 21st September, 2016 at the UN Headquarters in New York, with the involvement of Member States, non-governmental organizations, civilian population, private entities and educational facilities, in order to give their views on how to combat it.

Another purpose of this study was to generate evidence to help strengthen awareness of the risks of self-medication like antibiotic resistance, inaccurate self-diagnosis, latencies in seeking proper medical guidance and appropriate therapy, potential adverse effects, aggravation of the condition the individual is trying to self-treat, serious drug interactions,

concealing of severe diseases and risk of addiction and abuse among the general population and especially traders who I believe which occur mostly due to ignorance.

This study also therefore seeks to generate data for the drug supply regulatory bodies in the country in order to strengthen policies on regulation and access to drugs.

## 1.4 Conceptual Framework

**Need factors**

- Type of ailment
- Duration of ailment

**Predisposing Factors**

- Sex
- Age
- Ethnicity
- Socioeconomic status
- Occupation
- Education

**SELF-MEDICATION**

**Consequence of self-medication**

- Antibiotic resistance
- Adverse drug reactions
- Drug interactions

**Enabling factors**

- Household income
- Medical insurance
- Medical services
- Proximity to medical services
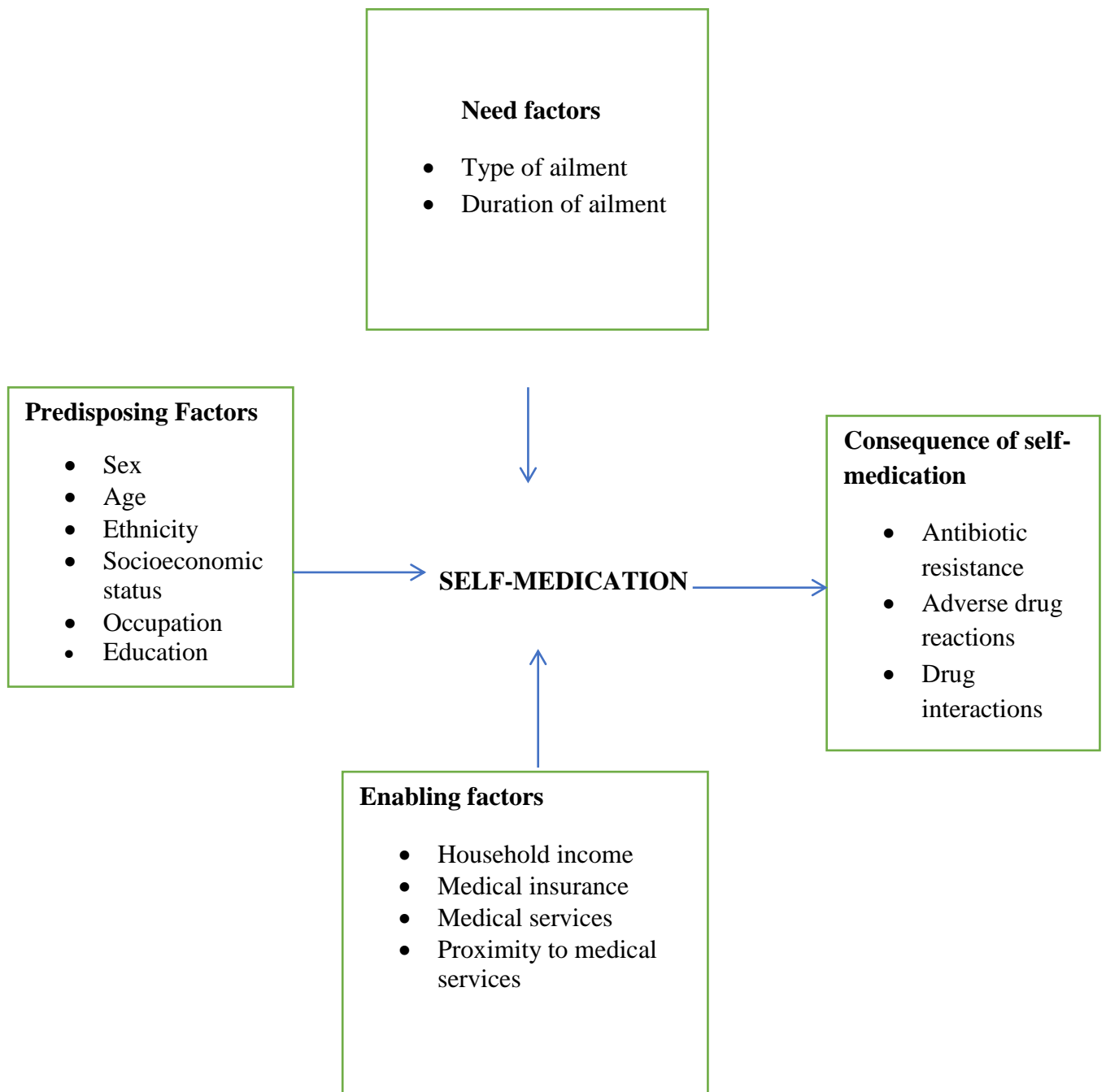
Figure 1.1 Conceptual framework of the revised Andersen model of health service utilization (Lei *et al.*, 2018).

The conceptual framework was based on the modified Andersen model of health service utilization.

"This model evaluated people's choice to use health services is contingent on three factors. Predisposing, enabling, and needs. Predisposing factors include sex, age, ethnicity, socioeconomic status, occupation and education. Enabling factors refer to availability constraints such as household income, medical insurance, medical services and proximity to medical services. Need factors are those which trigger the action to self-medicate, such as type of illness and duration"(Lei *et al.*, 2018).

These factors lead to self-medication and its associated consequences like antibiotic resistance, adverse drug reactions and drug interactions.

## 1.5 Research Questions

The following research questions guided this study:

i) What is the prevalence of self- medication with analgesics and antibiotics among the traders?

ii) What factors inform the practice of self-medication among the traders?

iii) What particular diseases are commonly self-medicated with analgesics and antibiotics?

iv) Which analgesics and antibiotics are most often used in self-medication?

**1.6 General Objective**

This study sought to investigate the practice of self-medication with analgesics and antibiotics among traders at the Akosombo market in the Asuogyaman District of the Eastern region of Ghana.

**1.7 Specific Objectives**

i)   To determine the prevalence of self-medication with analgesics and antibiotics among traders at the Akosombo market.

ii)  To assess the factors that inform the practice of self-medication.

iii) To identify the common disease conditions treated with analgesics and antibiotics through self-medication.

iv)  To identify the types of analgesics and antibiotics that are most often used in self-medication.

**1.8 Profile of Study Area**

Akosombo is located in the Asuogyaman District which is about 100 kilometers north east of the national capital, Accra. The township of Akosombo spreads through valleys and hilltops, covering an area of over twenty-six square kilometers. It was called *Nkonson-konson-bo* (a chain of rock). That was the name given to the little-known settlement by its inhabitants, who in 1733, had settled at the foot of the gorge formed by the Akwapim and Togo mountain ranges.

The Asuogyaman District is located approximately between latitudes $6^o$ $34^o$ N and $6^o$ $10^o$ N and longitudes $0^o$ $1^o$ W and $0$ $^o14^oE$. It is about 120m above Mean Sea Level (MSL). It covers a total estimated surface area of 1,507 sq. km, constituting 5.7 percent of the total area of the Eastern Region. The district shares boundaries with Kwahu Afram Plains to the north, Upper Manya District to the west, Lower Manya Krobo District to the south and South Dayi, Ho

West and North Tongu Districts to the east. Asuogyaman is a traditional district braided by the Volta Lake, making it a tourism and aqua- culture hub and has a great potential for agricultural development.

The Volta River Authority is the largest employer with most of the working population mainly engaged in its power generation and other activities. The Akosombo township is occupied by the employees of the Volta River Authority, hence the home of a predominantly migrant population of about 15,000 from all parts of Ghana and beyond. The Akosombo township comprises of Community One and Community Two. Community Two is where the home of the bulk of the population is and where most of the commercial and business activities take place. Key services like postal, telecom and banking services are conducted in this community. The township's police station and fire services as well as a delightful variety of small stores are also to be found here. Community One which is mostly residential is built on the hilly slopes from where some of the houses have a commanding view of the dam and surrounding area. Most of the administrative offices of the Volta River Authority are located in this part of the township. The community also has excellent recreational facilities such as a swimming pool, lawn tennis courts and many others The construction of the Akosombo Dam has resulted in the formation of the largest man-made lake in the world in terms of surface area(8502sq.km). The quality of health services in the Akosombo Township is typified by the high standards maintained at the hospital which happens to be the only hospital in the Asuogyaman district and the reputation it has acquired after nearly four decades of successful operations.

**Akosombo market**

Akosombo has a market which has assumed greater importance over the last few years as it expands to accommodate the growing population both within the township and smaller communities. Mondays and Thursdays are market days during which the market appears to burst at the seams as sellers and shoppers converge for the day's buying and selling. Foodstuffs are most predominant on such days, as trucks arrive with the market mammies from the outlying farming communities and beyond. The market has 3 demarcations, there is an area which has shops that open Mondays to Saturdays, there is also an area for those who set up every day including Sundays and also an area for those who come only on market days.

**1.9 Scope of the Study**

This study was conducted to determine the extent of self-medication among traders in the Akosombo market. Analgesics and antibiotics are the classes of drugs focused on in the study. The study was conducted between December, 2019 and February, 2020. The study looked into the demographics of participants, type of trade, use of analgesics and antibiotics, the types of drugs and indications for use. The write up concludes with recommendations to improve practice of self-medication and to combat analgesic and antibiotic misuse.

**1.10 Organization of Report**

The main body of the report is preceded by detailed contents including lists of figures, tables, and definition of terms used in the report. This is followed by an abstract giving briefly the scope and objectives of the study, methodology, findings and conclusions.

Chapter One explains the importance of the topic, scope, problem statement, significance of study, objectives, research questions and conceptual framework. Chapter Two is the review

of literature associated with the topic under study. Chapter Three talks about the methodology including study design, study population, sampling, data handling and analysis, ethical considerations and limitation of the study. Chapter Four is on results from data analysis, presented by graphs and tables. Chapter Five discusses the results and compares with available literature on previous works by other researchers. Chapter Six gives the conclusions and recommendations

## CHAPTER TWO

## LITERATURE REVIEW

### 2.1 Concept and Prevalence of Self- medication

"Over the years, the rational use of medicines has come to be regarded as one of the key principles in delivering effective and quality healthcare. In 1985, the WHO convened a meeting of experts on the rational use of drugs, out of which the rational use of medicine was defined to represent a situation where 'Patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community' "(Ofori-Asenso and Agyeman, 2016).

The World Health Organization (WHO) stated that, "It has become widely accepted that self-medication plays an important role in the healthcare system. Recognition of the responsibility of individuals for their own health and awareness that professional care for minor ailments is often unnecessary has contributed to this view. Improvements in people's general knowledge, level of education and socioeconomic status in many countries form a reasonable basis for successful self-medication"(Albalawi *et al.*, 2015).

"Responsible self-medication entails using approved and available medicine in a safe and effective way as directed though without prescription. The types of drugs used are indicated for a self-recognizable condition following initial medical diagnosis, which means that users have previous knowledge of the dose, time and side effect(s) of the overdose of the drug. Responsible self-medication is possible in the developed nations because of high quality of education, accessibility to health information, safety and quality health care including government policies on health coupled with the health-seeking behaviour and skeptical expert knowledge"(Awosusi and Konwea, 2015).

"Non-responsible self-medication is the use of drugs in the treatment of self-diagnosed ailments or symptoms of diseases without supervision or prescription by a physician. It is characterised by indiscriminate use of drugs for the management of ailments many of which have resulted into intoxication. A major problem of non-responsible self-medication is the lack of clinical evaluation by a medical professional which can result in wrong diagnosis and delay in appropriate treatment, drug resistance, use of expired drugs, wrong doses and prolonged duration of usage. The act of non- responsible self-medication seems to be prevalent in the developing countries because of the poor level of literacy, scarcity of health information and non-implementation of government policies on health issues" (Awosusi and Konwea, 2015).

An understanding of self-medication practices across varied age groups, can give insights into these underlying influences. This understanding can help shape future interventions directed towards responsible self-medication.

For responsible self-medication to occur, there are two underlying requirements:

1) The medicine/product has to be safe and effective in the quantity that it is meant to be consumed.

2) The consumer must be in a position to understand his /her symptoms and has sufficient knowledge and information about the product before its consumption.

In most of the developed world the above two criteria are sufficiently met and hence responsible self-medication is possible. This situation does not however exist in most developing countries hence the chances that a consumer/patient faces serious consequences are high(Meena Parulekar et al., 2015).

"Of the very many symptoms an individual experiences, only a small proportion, with an estimate of 10–30%, are brought to the attention of physicians. This presumes that, the majority of the symptoms are either tolerated or self-medicated. Self-care is a behavioral response of individuals to promote or restore their health. Self-medication which is one form of self-care is an important initial response to illness. It is the treatment of common health problems with medicines specially designed and labeled for use without medical supervision and approved as safe and effective for such use" (Desalegn and Abafita 2015).

Globally, the prevalence of self- medication practise is inconsistent ranging from 32.5 to 81.5%. The frequency of self –medication ranges from 11.9% to 75.7% in Africa (Kajeguka and Moses, 2017). Self-medication occurs throughout the world. "A survey in Britain reported that 93% of patients experienced body pain within one month, and of these, 75% self-prescribed an over-the-counter (OTC) analgesic. Also, 72% of patients with a cold, cough, and headache in the United States would choose to self-medicate in the first instance. The prevalence of self-medication was 75% in Chile, 65% in Brazil, and 53% in Mexico" (Lei *et al.*, 2018).

## 2.2 Factors Influencing Self-medication

"People may engage in self- medication due to many reasons, like the urge for self-care, sympathy for family members in sickness, lack of health services, poverty, ignorance, misbelief, excessive advertisements of drugs, and availability of drugs in establishments other than pharmacies" (Jain et al, 2011) .

" Studies on self-medication show that it is influenced by many factors, such as education, family, society, law, availability of drugs and exposure to advertisements mild illness, previous experience of treating similar illness, economic considerations and a lack of availability of health care personnel" (Patel *et al.*, 2013).

"The factors influencing self-medication remains issues of intense debate in academic discourse. Availability of drugs in markets and poor drug regulatory practices contribute to self- medication. Many Nigerians, most times, trivialize ailments such as headache, fever, cough, throat infection, common cold and stomach ache while, some do perceive some ailments to be too mild to necessitate medical consultation. Other factors like demographic factors have been found to influence self-medication. For instance, gender, age, sex and social role were discovered to have influence on self-medication"(Awosusi and Konwea, 2015).

Some other reasons why people self- medicate include: being ashamed or shy to discuss their real problems to a doctor or a pharmacist, experimenting to see what can work due to extensive research, distrust in doctor or medical industry, not wanting their diseases to appear on paper in fear of losing a job, word of mouth being told "what works", tried doctor's advice and it did not work so they take matters into their own hands, severity and duration of the illness, lack of availability of health care personnel and the ease to purchase over the counter drugs than to see a doctor.

"Easy availability of the drugs over the counter facilitates self-medication. In a developing country like India, easy availability of a wide range of drugs coupled with inadequate health services result in increased proportion of self-medication. Though self-medication is highly practiced worldwide and there is a high prevalence is in developing countries, the frequencies of self-medication practices vary from country to country and from one geographical location to the other. Given high burden of infectious diseases in Tanzania , self-medication is mainly triggered by limited health care services and an increase in the number of private pharmacies that sell medicines without prescription. This behaviour enables patients to have access to

medicines without any difficulties, therefore encouraging self-medication" (Kajeguka and Moses, 2017).

## 2.2.1 Sources of drugs and drug information

One of the driving determinants of self-medication is the source of information on the drugs and where they are purchased from. These two factors have a role to play in safety and quality of drugs. There is evidence to suggest that people in developing countries receive their drugs as well as information on these drugs from non-pharmacists and non-trained personnel (Agyei-boateng, 2015). Drug peddlers are quite a common sight and a source of information for self-medicated drugs in developing countries. Drug peddlers often operate in and around large markets and parked vehicle stations and often target unsuspecting travelers (Agyei-boateng, 2015). Another known source of information on drugs is licensed chemical sellers, these are people licensed to sell over the counter drugs (OTC). They however may not have the essential knowledge and details to provide information on drugs.

Information may also be obtained from informal sources such as friends, family among others (Albalawi et al., 2015). For instance, it is common to find older generations like parents, in-laws, and other relatives suggesting possible drug treatments because they are seen to have experience and are therefore are important sources of drugs and drug information for self-medication (Albalawi et al., 2015; Agyei-boateng, 2015). Older family members serve as a source of drugs too not just information. Sometimes, they go to the extent of sharing leftover prescription drugs with other family members and friends too (Van et al., 2008; Agyei-boateng, 2015).

Left over drugs is also a vital source of drugs for self-medication. It is common for people to stop taking their drugs when they feel well and keep the rest in anticipation of future ailments and diseases (Agyei-boateng, 2015). The media has also been mentioned as one of the

sources of information on drugs (El-Nimr et al., 2015). This is made evident by the numerous advertisements of drugs on television and radio including the internet. Albalawi et al., (2015), reported that 53.1% of people obtain information on drugs from the pharmacist with 18.7% obtaining the information from old prescription forms. Other reported sources in that same study included health staff and relatives or friends.

**2.3 Effects of self-medication**

"Several benefits have been linked to appropriate self-medication, among them are: increased access to medication and relief for the patient, the active role of the patient in his or her own health care, better use of physicians and pharmacists skills and reduced (or at least optimized) burden of governments due to health expenditure linked to the treatment of minor health conditions.

However, self-medication is far from being a completely safe practice, in particular in the case of non-responsible self-medication. Potential risks of self-medication practices include: incorrect self-diagnosis, delays in seeking medical advice when needed, infrequent but severe adverse reactions, dangerous drug interactions, incorrect manner of administration, incorrect dosage, incorrect choice of therapy, masking of a severe disease and risk of dependence and abuse" (Ruiz, 2010)

"Major problems associated with self-medication practice include drug resistance, drug side effects, wastage of resources, and serious health hazards including death" (Kassie et al., 2018).

"Self -medication increases the chances of illicit use of drug and drug dependency and most of all masking the signs and symptoms of underlying disease hence complicating the problem, creating drug resistance and delaying diagnosis" (Patel *et al.*, 2013).

Self-medication also increases the potential for drug abuse and addiction. Physical dependence on medicines is probably one of the most serious health outcomes of self-medication. Some medicines like antidepressants, stimulants, and pain relievers can produce the same effect as illicit drugs especially when taken in increased quantities.

**2.4 Disease conditions for which drugs are self -medicated**

Conditions such as malaria, headaches, common cold, dermatological, abdominal, digestive, candidiasis, sedatives, body aches, cough, respiratory tract Infections, allergies and diarrhea are commonly self -medicated.

**2.5 Types of drugs used in self medication**

Analgesics, anti-pyretics, antibiotics, antacids, anti-malarials, anti-helminthiasis, antitussives, anti-histamines, common cold tablets and syrups, vitamins and nutritional complements are the commonly used classes of medications for self-medication purpose. "The most frequently self-medicated over-the-counter and prescription-only medicines were analgesics and antibiotics, respectively" (Berzanskyte *et al.*, 2006). Across different continents and among different cultures of the world, different varieties of drugs are self-medicated and sometimes abused. There are some drugs that, throughout the world are common as self-medicated drugs. Antibiotic abuse for instance is quite common world-wide (Okumura et al. 2002). In a study of 605 mothers in Vietnam for instance, Okumura et al., (2002), found that 96 different varieties of antibiotics were kept in 76 different households and that 84 of these antibiotics had been purchased without prescription. Togoobaatar et al., (2010), also reiterates that approximately 50% of antibiotic use world-wide is privately bought without prescription. The high use of antibiotics globally could be explained by its perceived efficacy against some of the most common disease conditions like colds and flu, coughs, and diarrhoea. Since these

disease conditions are common and generally perceived to be less serious, they are more likely to be treated with drugs like antibiotics, which can easily be purchased over the counter.

Herbs and herbal drugs are among the most self-medicated drug groups over the world. Tabatabaee,(2011), suggests that a significant number of people world-wide now have tried at least one herbal product before. Leaves, barks, roots, fruits, and stems of different trees are used in various combinations to treat different illnesses in different parts of the world (Malan and Neuba 2011). Coconut oil, seeds, berries, and flowers are also used as herbs to treat various ailments in different parts of the world (Rahman et al. 2008; Oreagba et al. 2011).

### 2.5.1 Analgesics

Analgesics are medicines that are used to alleviate pain. They are also known as painkillers or pain relievers. Technically, the term analgesic refers to a medication that provides relief from pain without putting you to sleep or making you lose consciousness. Classes of analgesics includes analgesic combinations, antimigraine agents, CGRP inhibitors, cox-2 inhibitors, miscellaneous analgesics, narcotic analgesic combinations, narcotic analgesics, Nonsteroidal anti-inflammatory drugs and salicylates. Lukovic et al.,(2014), in a study among medical students in Belgrade, Serbia reported that, the most commonly self-medicated class of drugs is analgesics. He reported a prevalence of 55.4%.  A research on self -medication and non-doctor prescription practices in Pokhara, reported that the most commonly used drug for self-medication was paracetamol (43%) followed by NSAIDS (non-steroidal anti-inflammatory drugs) which was 23% (Partha and Shenoy, 2002).

A study in Alexandria, Egypt also reported analgesics as the most commonly used drug for self-medication with a prevalence of 96.7% (El-Nimr et al., 2015). One study done to compare prevalence between medical and non-medical students reported that about 72% of

pain relievers were taken for headaches whiles 47.6% took the pain relievers for pains elsewhere (Zafar, 2008).

## 2.5.2 Antibiotics

"Antibiotics represent one of the most prescribed drugs worldwide and their resistance is a major public health threat, hence the need for research on antibiotic usage patterns to help develop appropriate interventions. Studies have shown that self-medication with antibiotics is generally prevalent in the developing world and also in some developed countries such as Greece"(Donkor *et al.*, 2012).A study in Egypt by El-Nimr et al.,(2015) , also reported an antibiotic use prevalence rate of 53.9%. The study mentioned cough and common cold as the symptoms that warranted the use of antibiotics. Osemene and Lamikanra ,(2012), reported that 53.8 % of the university students who took part in their study in Nigeria admitted taking antibiotics for self-medication. The prominent disease conditions that predisposed respondents to self-medication practices with antibiotics were urinary tract infection, typhoid fever, cough and catarrh, diarrhea, sore throat, otitis media and pneumonia.

# CHAPTER THREE

# METHODOLOGY

## 3.1 Research Methods and Design

A cross-sectional study specifically; a quantitative method was used to estimate the extent of self-medication and factors associated with it among traders at the Akosombo market. It is described as quantitative because it attempts to measure self-medication practices among traders using a questionnaire. "A cross-sectional study is an observational study in which the exposure and the outcome are determined at the same time point for each study participant"(Pandis, 2014). It provides the chance for one-time health evaluation and results are easily expressed in mathematical language and interpreted by means of statistical procedure.

## 3.2 Data Collection Techniques and Tools

A printed structured questionnaire was used for data collection and four Research Assistants were employed and trained to facilitate data collection. Data was collected between January, 2020 and February, 2020. The questionnaire was close ended with options for participants to choose from and it consisted of socio-demographic characteristics of study participants, types of illnesses or symptoms of illnesses for which self-medication was sought, reasons for self-medication, sources of advice and category of drug products demanded for self-medication.

## 3.3 Study Population

The study was conducted among traders in the Akosombo market. The traders who come to the market are mostly from the surrounding farming communities like Adjena, Gyakiti, Frankadua and Marine. The traders are usually women who sell goods varying from fresh food, imported goods, local jewelry, shoes and many more. On market days, the traders that

come to the Akosombo market present from areas as far as the Lower and Upper Manya Krobo districts. These areas include Odumase, Atua, Agormanya ,Nuaso Akuse, Kpong, and Somanya. These same traders go to other towns in the Asuogyaman, Lower Manya Krobo and Upper Manya Krobo Districts on other market days; Wednesdays and Saturdays at Agormanya and on Fridays at Marine, Frankadua and Sapor.

## 3.4 Rationale for Study Site

The Akosombo market has traders who have busy schedules. They do not trade at one place they move to other towns or communities based on their market day schedule. As traders, they are constantly exposed to a level of stress. The combination of chronic stress and an unbalanced lifestyle makes these traders prone to acute and chronic diseases. The market has chemical shops and a big pharmacy just adjacent the market so they have easy access to drugs and are most likely to self-medicate. The choice of the study site is not restrictive as it has traders from areas such as Odumase, Atua, Agormanya ,Nuaso Akuse, Kpong, Adjena, Gyakiti, Frankadua, Marine and Somanya .The study site was conveniently selected based on proximity.

## 3.4 Study Variables

The outcomes of the study are the use of analgesics and antibiotics without prescriptions. The independent variables include sex, age, marital status, ethnicity, education, type of education and place of trade.

**Table 3.1:** *Description of variables*

| Category | Variable | Scale of measurement |
|---|---|---|
| Outcome | i)   Use of analgesics<br>ii)  Use of antibiotics | Binary<br>Binary |
| Independent | Sex<br>Age<br>Marital status<br>Education<br>Type of trade<br>Place of trade | Binary<br>Categorical<br>Categorical<br>Categorical<br>Categorical<br>Categorical |

## 3.5 Sampling

## 3.5.1 Sampling technique

Convenience sampling which is a type of non-probability sampling was used for the research. Convenient sampling was used due to the busy nature of the study area. A non-probability sampling technique was used since the primary aim of this research is not to generalize to the larger population of market women but rather to capture and to understand the diversity of views, opinions and perceptions of different traders regarding self-medication. Only one trader per shop was selected to avoid cluster effect and all zones in the market were covered. Traders hardly left their items to respond to questions being asked or to fill forms. These traders including itinerant traders who were willing to take part in the study were enrolled.

### 3.5.2 Sample size calculation

The sample of a study is a section of the population that is drawn to make inference or projections to the general population. This sample size is calculated based on a previous research on self- medication in Accra using 70% prevalence (Donkor *et al.*, 2012).

The sample size was calculated using the Cochran's formula as shown below;

$$n = \frac{Z^2 \times pq}{e^2}$$

Where,

$n$ = sample size (Cochran, 1977)

$Z$ = the z-score that corresponds with 95% confidence interval which is 1.96

$p$ = Proportion of people who self- medicate,70% equal to 0.70

$q$ = Proportion of people who do not self-medicate is equal to 1-0.70 = 0.30

$e$ = Margin of error set at 6% (0.06)

Therefore,

$$n = \frac{(1.96)^2 \times (0.7 \times 0.3)}{(0.06)^2} \cong 224$$

A non-response rate of 10 % resulting to about 22 respondents was added to the minimum sample size to get 246 participants.

## 3.6 Pretesting

Pretesting of the questionnaire was done at the Senchi market, which is a market that has almost all characteristics as the Akosombo market. Results from the pretesting was not included in the main study. The pre-test was done to test the participants' level of understanding of the questionnaire and to make corrections to the questionnaire if necessary.

## 3.7 Data handling

Data collected with questionnaires were screened for completeness and errors. The data was entered using Microsoft excel 2016. The original entry on the questionnaire was used as source data. The principal investigator was responsible for data cleaning and management. Soft copies of all dataset and work done was sent to the investigator by e-mail, and an external drive and all completed individual questionnaires were kept under lock and key.

## 3.8 Data analysis

Data collected was analyzed using STATA, version 14.0. A descriptive statistical analysis was carried out to obtain summary tables and graphs containing the demographic characteristics of the study participants. The results were expressed as means, frequencies, percentages and in graphs. A measure of strength of association between the outcome variable and the predictor variables were obtained by using the Chi-square and Fisher's exact test; p values of $< 0.05$ were considered statistically significant. All confounding variables were catered for and the effect of prominent predictor variables were evaluated using a multivariate logistic regression model to obtain the adjusted odds ratios.

**3.9 Ethical Considerations**

This research sought the consent of participants by asking them to sign a consent form. Participants were aware of the objectives of the research project, and were assured of anonymity and confidentiality for all information they provided. Participants were also assured that at any point during the data collection, they had every right to withdraw without any consequences to their person, image or self-esteem.

Ethical clearance was obtained from the Ethical committee of the Ensign College of Public Health before the study begun.

**3.10 Limitations of the study**

One of the limitations of this study was that the study employed a cross-sectional study design and as such causal relationships between variables cannot be established. Also, data collected was self-reported with the possibility of over and under-reporting which the researcher cannot validate.

It is likely some of the respondents could deny self-medicating and this could affect the accuracy of responses regarding the incidence of self-medication among the participants. Also, the lack of a complete list of traders and their shops made it impossible to target a representative sample of the traders. This limits the generalizability of the findings of the study.

Lastly, the questions were asked based on a period of the past six months, thus it is possible that some incorrect data was given due to forgetfulness, or recall bias.

# CHAPTER FOUR

# RESULTS

## 4.1 Socio-demographic results

Two hundred and forty-six (246) traders were surveyed between February 2020 and March, 2020. All questionnaires were duly filled and completed representing a 100% response rate.

### 4.1.1 Age and sex distribution of respondents

The result on sex distribution of respondents showed more female respondents (n=156; 63.4%) compared to male respondents (n=90; 36.6%). About 39.0% of the respondents were between the ages of 18 to 30 years and 54.50% were between the ages of 31 to 45 years and 6.5% were above 45 years. The lowest age of the participants was 18 years and maximum age was 55 years. The average age of respondents was 32.5 (±7.53) years.

### 4.1.2 Marital status of respondents

The majority of respondents were married or living together (50.0%), with 32.1% being single. About 13.8% were separated/divorced and few of the traders were widowed (4.1%).

### 4.1.3 Educational level of respondents

The same number of respondents (25.2% each) had both primary and secondary/middle level of education. About 24.4% of respondents had vocational education, followed by 16.3% who had no form of education.  Only 8.9% of the respondents had tertiary education.

### 4.1.4 Religious affiliation of respondents

Majority of respondents were Christians (82.5%).12.6% of them were Muslims, 3.3% did not belong to any religion and 1.2% of them were Traditionalist. Only 0.4% of respondents practiced other religions.

### 4.1.5 Type of trade of respondents

Most of the respondents were involved in trading of food (47.6%). About 18.3% sold clothing, 9.3% sold stationaries and 8.5% sold cosmetics. A total of 16.3% of respondents sold other products such as; agricultural inputs, medicinal products, household durables, craft, equipment and lubricants.

### 4.1.6 Place of trade of respondents

Sixty-one percent (61%) of the traders, which represents majority of them, had no fixed place of trading (Itinerants). However, 20.3% of the respondents traded in rented shops and 18.7% owned their shops.

**Table 4.1a:** *Summary of Socio-demographic results among traders in Akosombo market*

| CHARACTERISTICS | FREQUENCY (%) |
|---|---|
| GENDER | |
| Male | 90 (36.6) |
| Female | 156 (63.4) |

| | |
|---|---|
| **AGE (Years)** | 32.5 (±7.53) |
| 18 – 30 | 96 (39.0) |
| 31 – 45 | 134 (54.5) |
| Above 45 | 16 (6.5) |
| **MARITAL STATUS** | |
| Single | 79 (32.1) |
| Married/Living together | 123 (50.0) |
| Separated/Divorced | 34 (13.8) |
| Widowed | 10 (4.1) |
| **LANGUAGE** | |
| Akan | 50 (20.3) |
| Krobo | 80 (32.5) |
| Ewe | 75 (30.5) |
| Others | 41 (16.7) |

| EDUCATIONAL LEVEL | |
| --- | --- |
| None | 40 (16.3) |
| Primary | 62 (25.2) |
| Secondary/Middle | 62 (25.2) |
| Vocational | 60 (24.4) |
| Tertiary | 22 (8.9) |
| **RELIGION** | |
| Christian | 203 (82.5) |
| Muslim | 31 (12.6) |
| Traditional | 3 (1.2) |
| No religion | 8 (3.3) |
| Others | 1 (0.4) |
| **TYPE OF TRADE** | |
| Food | 117 (47.6) |
| Cosmetics | 21 (8.5) |
| Clothing | 45 (18.3) |
| Stationary | 23 (9.3) |
| Other | 40 (16.3) |

**EDUCATIONAL LEVEL**

| PLACE OF TRADE | |
|---|---|
| Own shop | 46 (18.7) |
| Rented shop | 50 (20.3) |
| Itinerant | 150 (61.0) |

Source: Author's Field Survey, March 2020

### 4.1.7 Neighbouring Towns

Table 4.1b details where respondents come from to trade at the Akosombo market. It is evident from table 4.1b that majority of the traders commute from Kpong.

**Table 4.1b:** *Neighbouring Towns where Respondents commute from to the Akosombo Market*

| Neighbouring Town | Frequency | (%) |
|---|---|---|
| Aboasa | 1 | 0.41 |
| Adjena | 8 | 3.25 |
| Agormanya | 27 | 10.98 |
| Akosombo | 18 | 7.32 |
| Akuse | 1 | 0.41 |
| Akwamufie | 1 | 0.41 |
| Anum Boso | 5 | 2.03 |
| Apeguso | 2 | 0.81 |

| | | |
|---|---|---|
| Asesewa | 18 | 7.32 |
| Asikuma | 13 | 5.28 |
| Atua | 18 | 7.32 |
| Frankadua | 10 | 4.07 |
| Gyakiti | 11 | 4.47 |
| Kpong | 15 | 6.10 |
| Krobo Odumase | 17 | 6.91 |
| Marine | 17 | 6.91 |
| New Akrade | 13 | 5.28 |
| Nuaso | 12 | 4.88 |
| Nudu | 7 | 2.85 |
| Sapor | 13 | 5.28 |
| Senchi | 1 | 0.41 |
| Somanya | 18 | 7.32 |

Source: Author's Field Survey, March 2020

## 4.1.8: Trading in other places in addition to the Akosombo Market

Figure 4.1 shows  an overwhelming majority (81.71%) of the traders trade at other places/areas in addition to  the Akosombo market.

**Figure 4.1:** *Trading outside the Akosombo Market*



**Do you trade anywhere else apart from the Akosombo Market?**

18.29%

81.71%

- Yes - No
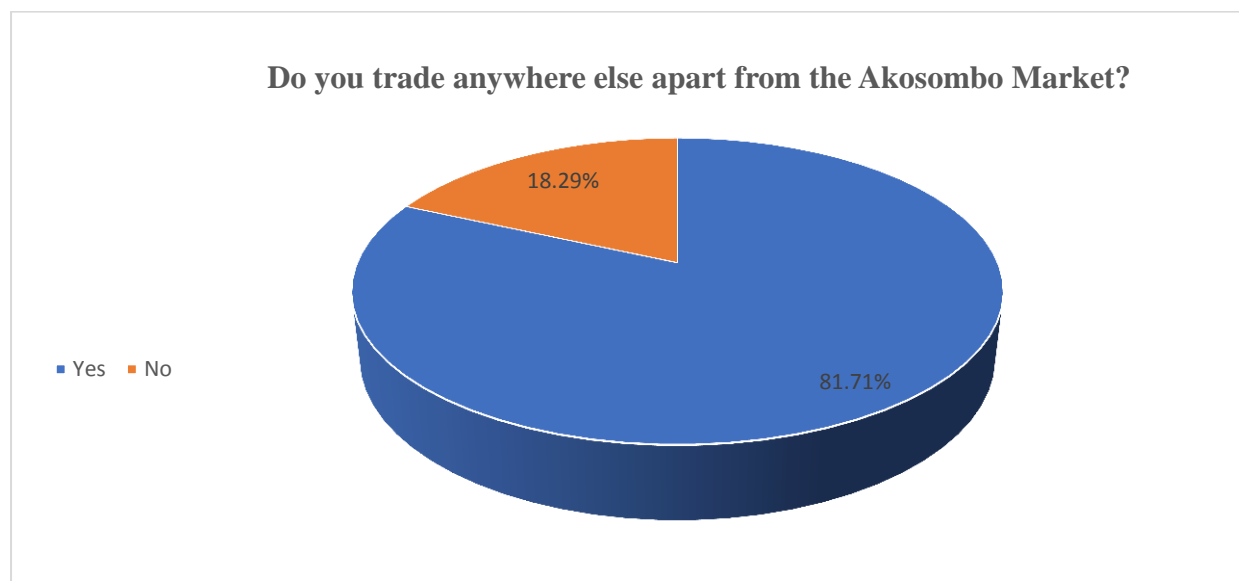
## 4.2 Results relating to analgesics

All the respondents admitted to buying analgesics recently. About 75.6% of respondents admitted to buying and using analgesics themselves, 14.2% of them admitted to buying analgesics for another person and 10.2% of the respondents admitted to buying the drugs for themselves and another person.

Paracetamol was identified by 52.0% of the respondents as the most recently bought analgesic. 19.5% said they bought Ibuprofen (brufen) most recently, 11.8% indicated buying diclofenac most recently, 7.3% posited buying aspirin most recently, 8.9% of respondents could not remember the most recently bought analgesics whereas only 0.4% indicated buying other type of analgesic most recently. None of the respondents had used tramadol and morphine most recently.

On the symptoms for the use of analgesics; majority of respondents (51.2%) admitted using analgesic for headache, 23.6% used it for back pain, 17.1% indicated using it for joint pain and 8.1% of the respondents said they use it to manage tiredness.

Table 4.2a, shows paracetamol as the most used drug to manage headache. Ibuprofen and diclofenac were mostly used to manage back pain. Some of the respondents could not recall the names of the drug they used in managing tiredness, joint pain and back pain. It must be stressed that, none of the respondents used tramadol and morphine for any of the indications. Aspirin was mostly used by respondents for back pain.

**Table 4.2a:** *Analgesics and indications for use among traders in Akosombo market*

| Analgesic | Headache n (%) | Back pain n (%) | Joint pain n (%) | Tiredness n (%) | Total n (%) |
|---|---|---|---|---|---|
| Paracetamol | 99 (77.3) | 13 (10.2) | 10 (7.8) | 6 (4.7) | 128 (100.0) |
| Ibuprofen (brufen) | 18 (37.5) | 20 (41.7) | 10 (20.8) | 0 (0.0) | 48 (100.0) |
| Diclofenac | 6 (20.7) | 14 (48.3) | 9 (31.0) | 0 (0.0) | 29 (100.0) |
| Tramadol | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) |
| Morphine | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) | 0 (0.0) |
| Aspirin | 3 (16.7) | 9 (50.0) | 6 (33.3) | 0 (0.0) | 18 (100.0) |
| Others | 0 (0.0) | 0 (0.0) | 1 (100.0) | 0 (0.0) | 1 (100.0) |
| I don't remember the name | 0 (0.0) | 2 (9.1) | 6 (27.3) | 14 (63.6) | 22 (100.0) |
| **Total** | 126 (51.2) | 58 (23.6) | 42 (17.1) | 20 (8.1) | 246 (100.0) |

Source: Author's Field Survey, March 2020

Respondents were asked to choose as many as possible from a list of pain killers they mostly use. Table 4.2b shows paracetamol (61.4%), aspirin (27.2%) and a combination of paracetamol and diclofenac (22.4%) as the most frequently used painkillers.

**Table 4.2b:** *Frequently used analgesics*

| Analgesic | Yes (%) | No (%) |
|---|---|---|
| Paracetamol | 151 (61.4) | 95 (38.6) |
| Paracetamol + Diclofenac | 55 (22.4) | 191 (77.6) |
| Paracetamol + Ibuprofen + Caffeine | 3 (1.2) | 243 (98.8) |
| Aspirin + Caffeine (Rapinol) | 7 (2.8) | 239 (97.2) |
| Ibuprofen (brufen) | 31 (12.6) | 215 (87.4) |
| Diclofenac | 18 (7.3) | 228 (92.7) |
| Tramadol | 0 (0.0) | 246 (100.0) |
| Morphine | 0 (0.0) | 246 (0.0) |
| Aspirin | 67 (27.2) | 179 (72.8) |
| I don't know | 30 (12.2) | 216 (87.8) |
| Others | 1 (0.4) | 245 (99.6) |

Source: Author's Field Survey, March 2020

## 4.3 Results relating to antibiotic use

Minority of respondents (10.6%) averred they had never used antibiotics in the past one year. About 67.5% of respondents indicated using antibiotics more than once, 14.2% said they used it twice or thrice, 5.3% posited using it more than three times and 2.4% of respondents remained indecisive on the number of times they had treated themselves using antibiotics in the past year. In summary, about 89.4% of respondents self-medicated with antibiotics in the past one year.

About 54.5% of respondents used antibiotics for upper respiratory tract infections (URTIs) such as cough, cold/catarrh and sore throat, 14.5% indicated using it for gastro-intestinal disorders such as diarrhoea and stomach "sore", 5.45% used it for fever, 8.64% for pains, 6.82% for skin infections, 4.55% for wounds and 2.3% of respondents posited using it for genital discharge. Only 0.45% used it for other indications such as nausea.

The commonly used antibiotics by respondents were the Penicillins; flucloxacillin, amoxicillin, penicillin V tablet and the combination of amoxicillin and clavulanic acid. A substantial number of respondents could not recall the name of the antibiotics they used for some indications. Metronidazole (flagyl) was widely used by respondents compared to antifungals and other antibiotics which were fairly used.

It can be inferred from table 4.3 that, penicillins were mostly used by respondents for upper respiratory tract infections followed by skin infections. Flagyl was mostly used for gastro-intestinal disorders. Antibiotics that were not remembered by respondents were mostly used for fever/pains and other antibiotics that were mentioned were widely used for skin infections.

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**Table 4.3:** *Types of antibiotics and indications for use among traders in Akosombo market*

| Drug N (%) | URTIs | GIT | Skin | Fever/pain | Genital Discharge | Other | TOTAL |
|---|---|---|---|---|---|---|---|
| Penicillins | 105 (88.2) | 1 (0.8) | 8 (6.7) | 3 (2.5) | 1 (0.8) | 1(0.8) | 119 (100.0) |
| Flagyl | 0 (0.0) | 20 (83.3) | 1 (4.2) | 0 (0.0) | 2 (8.3) | 1 (4.2) | 24 (100.0) |
| Others | 2 (15.4) | 0 (0.0) | 5 (38.5) | 3 (23.0) | 2 (15.4) | 1 (7.7) | 13 (100.0) |
| I don't remember the name | 13 (20.3) | 11 (17.2) | 11 (17.2) | 25 (39.1) | 0 (0.0) | 4 (6.3) | 64 (100.0) |
| TOTAL | 120 (54.5) | 32 (14.5) | 25 (11.4) | 31 (14.1) | 5 (2.3) | 7 (3.2) | **220 (100.0)** |

Source: Author's Field Survey, March 2020

The total number from the table is 220 instead of 246, this is because 26 of the respondents claimed they had never self-medicated with antibiotics

**4.4 Duration of usage of antibiotics**

Majority of the respondents (81.4%) indicated they know the quantity to buy from the pharmacist and 3.6% averred it depended on their money. About 4.5% of respondents posited

they knew from a previous prescription and 10.5% indicated they usually guessed the quantity to buy.

For the source of information on antibiotics, majority of respondents (63.2%) indicated consulting the pharmacist to know the dosage, 21.4% said they consult family members and friends, 6.8% of respondents averred they consult a doctor, 3.6% indicated they get to know the dosage from the internet, 2.7% said they check the Package insert in order to know the dosage, 1.8% asserted knowing the dosage from their previous prescription and 0.5% admitted to guessing the dosage themselves.

Respondents were asked whether they deliberately changed the dosage of antibiotics during the course of self-treatment. The results showed that majority of respondents (46.4%) had never changed the dosage, 15.5% of respondents sometimes changed the dosage and 38.2% of respondents always change the dosage of antibiotics. For those who admitted to changing dosage, 63.3% averred they changed the dosage due to improving conditions, 18.3% changed it because the condition worsened, 11.7% of respondents changed it to reduce adverse reactions and 6.7% indicated they changed the dosage because the drug was insufficient to complete the treatment.

Respondents were probed further on switching antibiotics and the reasons for doing so. Majority of respondents (53.6%) averred they never switched antibiotics, 31.4% indicated they sometimes switched to other antibiotics during the course of self-treatment and 15.0% said they always switched antibiotics. For those who admitted to switching antibiotics, a substantial number (62.1%) posited that they switched in order to reduce adverse reactions experienced by them, 21.4% stated they did so because the latter antibiotic was relatively cheaper and 12.6% of respondents admitted to running out of the former antibiotics. Only

3.9% of the respondents indicated the former antibiotics not working as expected hence their decision to switch to other antibiotics.

Respondents were asked when they normally stop taking antibiotics, majority (32.7%) indicated they stopped taking the antibiotics a few days after recovering, 28.64% admitted they stop after antibiotics run out, 16.82% stopped after symptoms disappeared and 15.45% also stopped after completion of the course. Minority of respondents (0.45%) indicated they stopped for other reasons such as after consultation with a doctor or pharmacist.

Table 4.4 details the results on dosage among traders in the Akosombo market. It can be inferred from the table that majority of respondents obtain information on drugs from the pharmacist. Also, majority of respondents changed dosages of antibiotics during self-treatment.

**Table 4.4:** *Summary of results on dosage of antibiotics among traders in the Akosombo market*

| Variable (Antibiotic) | N (%) response |
|---|---|
| **Knowledge on quantity to buy** | |
| Pharmacist | 179 (81.4) |
| Money available | 8 (3.6) |
| Previous prescription | 10 (4.5) |
| Guessing | 23 (10.5) |

| Knowledge on dosage | |
| --- | --- |
| Package insert | 6 (2.7) |
| Consulting doctor | 15 (6.8) |
| Consulting pharmacist | 139 (63.2) |
| Family/ friends | 47 (21.4) |
| Internet | 8 (3.6) |
| Previous experience | 4 (1.8) |
| Guessing | 1 (0.5) |
| **Change in dosage** | |
| Always | 84 (38.2) |
| Sometimes | 34 (15.5) |
| Never | 102 (46.4) |
| **Reason for changing dosage** | |
| Improving condition | 76 (63.3) |
| Worsening condition | 22 (18.3) |
| To reduce adverse reactions | 14 (11.7) |
| Insufficient quantity | 8 (6.7) |

| | |
|---|---|
| **Switching of antibiotics** | |
| Yes | 33 (15.0) |
| Sometimes | 69 (31.4) |
| Never | 118 (53.6) |
| **Reason for switching** | |
| Drug did not work | 4 (3.9) |
| Former antibiotics ran out | 13 (12.6) |
| Latter one was cheaper | 22 (21.4) |
| To reduce adverse reactions | 64 (62.1) |
| **Stopping antibiotics** | |
| After a few days regardless of outcome | 13 (5.9) |
| After symptoms disappeared | 37 (16.8) |
| A few days after recovery | 72 (32.7) |
| After antibiotics ran out | 63 (28.6) |
| After completing the course | 34 (15.5) |
| Upon consultation with pharmacist/doctor | 1 (0.5) |

Source: Author's Field Survey, March 2020

## 4.5 Factors influencing self-medication

Respondents were asked about what influenced their choice for self-medication, the results in table 4.5 shows majority of respondents self-medicated because of convenience. However, fourteen (14) respondents failed to respond to this specific question, hence their exclusion from table 4.5.

**Table 4.5:** *Factors influencing self-medication among traders in the Akosombo market*

| Reason | N (%) |
|--------|-------|
| Cost | 81 (34.9) |
| Convenience | 127 (54.7) |
| Other reason | 24(10.4) |

Source: Author's Field Survey, March 2020

## 4.6 Predictors of analgesic self-medication

A measure of strength of association between the outcome variable and the predictor variables could not be obtained by using the Chi-square and Fisher's exact test this is because there were no unexposed cases to warrant the computation of P -values.

## 4.7 Predictors of self-medication with antibiotics

Table 4.6 shows that self-medication with antibiotics was significantly associated with age (p = 0.012), education (p = 0.009) and type of trade (p = 0.001) at p -values less than 0.05.

**Table 4.6:** *Predictors of self-medication with antibiotics among traders in Akosombo market*

| Indicator | Antibiotic use | | P-value |
|---|---|---|---|
| | Yes (%) | No (%) | |
| **Age (years)** | | | |
| 18- 30 | 79 (82.3) | 17 (17.7) | |
| 31-45 | 125 (93.3) | 9 (6.7) | **0.012** |
| Above 45 years | 16 (100.0) | 0 (0.00) | |
| **Sex** | | | |
| Male | 82 (91.1) | 8 (8.9) | |
| Female | 138 (88.5) | 18 (11.5) | 0.668 |
| **Education** | | | |
| None | 30 (75.0) | 10 (25.0) | |
| Primary | 53 (85.5) | 9 (14.5) | |
| Secondary/middle | 59 (95.2) | 3 (4.8) | **0.009** |
| Vocational | 57 (95.0) | 3 (5.0) | |
| Tertiary | 21 (95.4) | 1 (4.6) | |

| Marital status | | | |
|---|---|---|---|
| Single | 69 (87.3) | 10 (12.7) | |
| Married/living together | 110 (89.4) | 13 (10.6) | 0.788 |
| Separated/divorced | 32 (94.1) | 2 (5.9) | |
| Widowed | 9 (90.0) | 1 (10.0) | |
| **Place of trade** | | | |
| Own shop | 40 (86.9) | 6 (13.1) | |
| Rented shop | 45 (90.0) | 5 (10.0) | 0.802 |
| Itinerant | 135 (90.0) | 15 (10.0) | |
| **Type of trade** | | | |
| Food | 100 (85.5) | 17 (14.5) | |
| Cosmetics & Clothing | 66 (100.0) | 0 (0.0) | **0.001** |
| Stationary | 20 (86.9) | 3 (13.1) | |
| Other | 34 (85.0) | 6 (15.0) | |

Source: Author's Field Survey, March 2020

## 4.8 Independent predictors of self-medication with antibiotics

A multivariate logistic regression analysis was conducted using selected demographic and other variables. Table 4.7 shows age and education to be significantly associated with

antibiotic use adjusting for gender, place of trade and paracetamol use, diclofenac use and ability to afford medical bill. The multivariate logistic regression also disclosed that traders within the ages 31 to 45 years were 2.57 times more likely to use antibiotics compared to those between the ages of 18 to 30 (p=0.043) holding other variables constant. It also revealed traders with primary education (OR = 2.19, 95% CI; 0.76-6.34) were more likely to use antibiotics than those with no level of education (p = 0.146) adjusting for other variables. Those with secondary/middle level of education were 6.87 times more likely to use antibiotics compared to those with no formal education in an adjusted model; and, this was found to be statistically significant (p = 0.010). Traders having vocational level of education (OR = 6.30, 95%CI; 1.49-26.51) were more likely to use antibiotics than their colleague traders with no level of education (p = 0.012) adjusting for other variables; this was found to be statistically significant. Traders with tertiary level of education were 6.68 times more likely to use antibiotics compared with those with no level of education (p = 0.094). Females (OR = 1.39, 95%CI; 0.51-3.3.75) were more likely to use antibiotics than males (p = 0.514). Traders who are in rented shops (OR = 1.92, 95% CI; 0.48-7.74) were more likely to use antibiotics than those having their own shops (p = 0.354) and itinerant traders (OR = 1.78, 95%CI; 0.58-5.43) were also more likely to use antibiotics compared to those having their own shops (p = 0.310).

The results from the multivariate logistic regression also revealed that the traders that use paracetamol were 0.94 times less likely to use antibiotics and those who use diclofenac were 0.61 times less likely to use antibiotics. It also revealed that traders who cannot afford medical care were 0.30 times less likely to use antibiotics.

**Table 4.7:** *Independent predictors of self-medication with antibiotics among traders in the Akosombo market*

| Indicator | OR (95% CI) | P-value |
|---|---|---|
| **Age (years)** | | |
| 18- 30 | 1 | |
| 31-45 | 2.57 (1.02- 6.41) | **0.043** |
| Above 45 | - | |
| **Education** | | |
| None | 1 | |
| Primary | 2.19 (0.76-6.34) | 0.146 |
| Secondary/middle | 6.87 (1.57-29.25) | 0.010 |
| Vocational | 6.30 (1.49-26.51) | 0.012 |
| Tertiary | 6.68 (0.72-61.94) | 0.094 |
| **Gender** | | |
| Male | 1 | |
| Female | 1.39 (0.51-3.75) | 0.514 |

| Place of trade | | |
|---|---|---|
| Own shop | 1 | |
| Rented shop | 1.92 (0.48-7.74) | 0.354 |
| Itinerant | 1.78 (0.58-5.43) | 0.310 |
| **Use of paracetamol** | 0.94 (0.38-2.31) | 0.901 |
| **Use of diclofenac** | 0.61 (0.07-5.13) | 0.656 |
| **Inability to afford medical bill** | 0.30 (0.03-2.61) | 0.278 |

Source: Author's Field Survey, March 2020

# CHAPTER FIVE

# DISCUSSION

**5.0 Introduction**

The main aim of this study was to investigate the practice of self-medication with analgesics and antibiotics among traders at the Akosombo market in the Asuogyaman District of the Eastern region of Ghana. This chapter discusses the results of the study.

**5.1 Demographic characteristics**

**5.1.1 Sex Distribution**

The sex distribution of respondents showed female dominance (63.4%). This result complements studies conducted by Kassie et al., (2018) in Ethiopia. The authors reported the majority (53.20%) of traders being female respondents. Another study conducted by Jangu, (2018) in the Mukono District of Uganda corroborates this assertion; the author reported 42.70% of respondents being males and 57.30% being females. A study conducted by Latifi *et al.*, (2017) , in Tehran reported self-medication in men was higher than women which contradicts the results in this study which showed that females were more likely to self - medicate compared to males. However, the results of this study were consistent with a study in Nigeria by Esan *et al.*, (2018) where the practice of self-medication was higher among females than males. The reason for females self- medicating more than men in this study could be due to the characteristics of the study population and the stressful nature of the work. Women are also mostly found trading in markets as compared to men in Ghana.

### 5.1.2 Age

The majority of the respondents (54.50%) fell within the 31-45 age range and 39.02% fell within 18-30 years. This result is slightly lower than that of Aqeel et al. (2014) who reported 58.5% as respondents within the age range of 31-45 years.

The results of this study revealed that those who fell within the ages of 31 to 45 years were more likely to self -medicate compared to those within the ages of 18 -30 years. This result is again inconsistent with a study carried out among adult population in the United Arab Emirate by Haif et al. (2019). In that study, those between the ages of 18-30 years were more likely to self-medicate than those within the 31-45 age range

### 5.1.3 Educational background

The majority of persons in this study had at least some primary and secondary levels of education. This finding is somewhat consistent with studies in Italy among parents who practice self-medication;  about 48% of parents who took part in that study had at least secondary education (Garofalo et al, 2015). In this study, the percentage of respondents with a tertiary level of education (8.9%) was lower compared to those reported in other studies. For instance, a study conducted in Alexandria, Egypt reported that about 22% of participants had at least a tertiary level of education (El-Nimr et al., 2015). This study revealed that, there is a link between one's level of education and the probability of self -medication and there is a  study conducted in Ejisu in Ghana by Agyei-boateng, (2015) which corroborates this assertion.

The remaining section discusses the major findings in line with this study's given research objectives.

**5.2 Use of analgesics**

**5.2.1 Prevalence of self-medication with analgesics**

Results from this study showed a very high prevalence of analgesic use (100.0%), this means all respondents sampled in this study reported the use of analgesics. This result was higher than the prevalence of analgesic use which was 96.7% reported in a study conducted in Alexandria, Egypt (El-Nimr *et al.*, 2015). The results from this study are also much higher compared to a study among medical students who self-medicated with analgesics in Belgrade, Serbia conducted by Lukovic et al, (2014) which reported a prevalence of 55.4%. The prevalence of analgesic use in this study was very high and can be adduced to the working environment and strenuous nature of trading, especially with the itinerant traders as this puts them at risk of musculoskeletal pains which could lead to the frequent use of analgesics.

**5.2.2 Indications for analgesic use**

The majority of the respondents in this study conceded using analgesics for headaches and this was in accordance with a study conducted by Zafar et al., (2008) among university students in Karachi who reported 72.4% of analgesic use for headaches. In contrast, however, the percentage of analgesic use among university students was higher compared to that of this study (51.2%). This could be due to the higher level of education of the university students compared to the traders , therefore, they have more knowledge about different ailments and drugs used in their treatments.  In this study, about 41% of respondents used analgesic for back and joint pains. The exhaustive nature of their work which involves carrying heavy loads especially with the itinerants who move from one market to another explains this. It must be stressed that a limited number of respondents in this study (8%) reported the use of

analgesics for tiredness; this is because tiredness is not an indication for analgesic use and no study was found to back this.

### 5.2.3 Types of analgesics used

The findings from this study showed paracetamol as the most frequent analgesic used by respondents. This result corroborates findings of studies by Esan *et al.*, (2018) in Nigeria. From time immemorial, paracetamol has remained relatively inexpensive and easily attainable compared to other analgesics. This could be because many believed paracetamol to be an innocuous drug that can be used at any time, irrespective of the dosage without having any adverse reactions. Paracetamol was widely used for treating headaches and this result is also consistent with a study by Partha and Shenoy, (2002) in Western Nepal.

Non-steroidal anti-inflammatory drugs (NSAIDS) such as ibuprofen (brufen), diclofenac, and aspirin were the next reported drugs used by respondents. They were mostly used for back and joint pains in this study. NSAIDS when used habitually accrue one's risk of getting a peptic ulcer.

None of our study respondents reported the use of tramadol and morphine which are strictly prescription-only analgesics. This is because they can be addictive due to the ecstasy accompanied by their use. Even though none of them admitted using these opioid analgesics, it is a concern that people attain them without prescription.

### 5.3 Use of antibiotics

### 5.3.1 Prevalence of self-medication with antibiotics

The prevalence of self-medication with antibiotics in this study was higher (89.4%) than studies conducted by Donkor et al, (2012) which reported a prevalence of 70% amongst

tertiary level students in Accra. This current study's result is also higher than the prevalence rate of 53.8% reported by Osemene and Lamikanra (2012) amongst university students in Nigeria. The contrast between the two studies may be because the respondents in the Nigerian study were tertiary students, whilst this study population had about only 8.9% having a tertiary level of education. This can lead to a conjecture that the higher the education level, the less likely it was to self-medicate with antibiotics.

"Self-medication with antibiotics occurs in many developing countries where drugs are not well-regulated hence there is easy access to prescription drugs without prescription. Self-medication could cause bacteria resistance to such antibiotics and may precipitate the emergence of multiple- resistant organisms that would be difficult to treat; thereby resulting in increased morbidity"(Osemene and Lamikanra, 2012).

The high prevalence of self-medication with antibiotics in this study could be attributed to easy accessibility of the antibiotics to the traders without prescriptions which is a consequence of weak regulatory measures and non-compliance by pharmacists/licensed chemical sellers in Ghana making prescription-only medicines such as antibiotics readily available and accessible to persons without doctors' prescription.

**5.3.2 Indications for antibiotics use**

In the present study, six (6) major indications for the use of antibiotics were identified. Upper Respiratory tract infections (URTIs), mostly reported by the respondents as cough, sore throat, and the common cold, were the symptoms for the use of antibiotics. This result corroborates findings from similar studies by Helal and Abou-ElWafa, (2017), and Kumburu et al., (2018) that, the most common symptoms treated with antibiotics are cough and cold .

The next indication following URTIs which the study found was gastro-intestinal disorders (diarrhoea and stomach "sore"). This result confirms that of Kumburu et al., (2018) who also reported diarrhoea as the second most common symptom for self-medication with antibiotics in Tanzania. The issue of using antibiotics for diarrhoea is, not all diarrhoea cases are caused by bacteria. Some are caused by viruses that do not need antibiotics for the treatment. This creates a foundation for the possible development of resistance to antibiotics and financial loss.

"Also, most of the management of diarrhea is supportive of oral rehydration and intravenous infusions. Antibiotic self- medication with diarrhoea is largely inappropriate. An antibiotic is only indicated for laboratory-confirmed infective diarrhoea" (Kumburu *et al.*, 2018).

This study revealed a proportion of the respondents use antibiotics for treating pain. Studies have shown pain is not a correct indication for taking antibiotics and if continued, could encourage the occurrence of antibiotic resistance (Keenan and Farman, 2006).

Skin infections were also reported in this study which is in accordance with a study by Latifi *et al.*, (2017). Most of the respondents in this study who used antibiotics for skin infection used flucloxacillin for the treatment.

In summary, the most common symptoms for the use of antibiotics in this study were Upper Respiratory infections (cough, cold/catarrh, and sore throat), gastrointestinal disorders (diarrhoea/stomach sore), pain and skin infections.

### 5.3.3 Types of antibiotics used

This study found metronidazole (Flagyl) and penicillins (particularly amoxicillin and flucloxacillin) as the two main antibiotics used by the respondents. This study is akin to findings from a study by Fadare and Tamuno, (2011) and Esan et al., (2018) who reported

penicillins ( tetracycline and amoxicillin ) and metronidazole as the most used antibiotics for self-medication. The preference for the antibiotics from the penicillin group can be attributable to inexpensiveness, accessibility, good safety profile, and a somehow broad spectrum of antimicrobial activity. Also, even though antibiotics are supposed to be prescription-only medicines, because regulatory measures are not strict enough there is easy accessibility to such drugs.

The study further reported metronidazole (Flagyl) as the second most used antibiotic for the treatment of gastrointestinal disorders among the traders. The result on the use of metronidazole in this study is consistent with that of Fadare and Tamuno, (2011) which reported metronidazole as the second most used antibiotic among University medical undergraduates in Nigeria.

### 5.3.4 Predictors of self-medication with antibiotics

In this present study, self-medication with antibiotics was strongly influenced by age (31-45 years) and education; traders with secondary/middle, tertiary, and vocational education were more likely to use antibiotics compared to those with no level of education. This could be due to the ability of the educated respondents to read the label on the medications consumed and can easily go back to a pharmacy to request for these drugs in case they need them again. However, this might not be the same as those with little or no formal education. They recognize drugs more with their colour and common usage names because they are easier to recall. Those aged between 31 to 45 years are an active group and tend to have more complaints, for instance, blood loss of menstruation, the stress of daily market schedule, and family problems, hence more drug use (Afolabi , 2008). The result in this study is similar to that of Afolabi, (2008),  and Awosusi and Konwea ,(2015), who reported age as a predictor

for self-medication and also consistent with studies by Partha and Shenoy ,(2002), who found education to be an independent predictor for using antibiotics for self-medication.

## 5.4 Reasons for self-medication

The study revealed convenience and cost-saving as the primary causes of self-medication with analgesics and antibiotics. Convenience in this study includes responses like avoiding waiting time and long queues at the hospital, lack of time to go to the hospital due to the busy nature of their work, availability of leftover drugs and to avoid unfriendly healthcare staff. This result is consistent with findings from Esan et al. (2018).

It was encouraging that majority of our participants never changed the dosage or switched antibiotics they were taking, this was similar in finding to a study conducted in Serbia by Lukovic et al, (2014). However, only 15.5% of the participants indicated taking the full course of antibiotics which is quite alarming: this may be as a result of inadequate information of consequences antibiotic resistance.

## 5.5 Sources of information about drugs

The study revealed three main sources of information on drugs. These are pharmacists, family/friends, and doctors. Amongst these three sources, the study identified the pharmacist as the predominant source of information on drugs used in self-medication. This result aligns with studies conducted by Eticha and Mesfin, (2014). This assertion is further supported by other studies which reported that 53.1% of people consult the pharmacist for information on drugs (Albalawi, 2015). This is however contradicted by study findings of Shoa and Region, (2015). According to their study, the major source of information for the patients who practiced self-medication was a previous experience.

This current study revealed family/friends as the second most common source of information on drugs. This finding is similar to studies conducted by Bertoldi *et al.*, (2014) and Agyei-Boateng, (2015). It is common practice for parents, in-laws, relatives and friends to recommend drugs they believe were effective based on their experiences of the past.

Also in this study, the third most common source of information on drugs were doctors. This finding is lower (6.8%) compared to studies conducted by Garofalo et al. ( 2015) among parents in Italy which reported a much higher percentage (70%) of people consulting doctors to obtain information on drugs. This contrast could be due to the fact that doctors in developed countries are more easily accessible through telecommunication and internet services linked to healthcare system services.

Finally, this study identified other sources such as the internet, package insert, and previous experience as auxiliary sources for drug information.

# CHAPTER SIX

## CONCLUSIONS AND RECOMMENDATIONS

### 6.0 Introduction

This research investigated self-medication practices with analgesics and antibiotics among traders in the Akosombo market. This chapter details conclusions and recommendations based on the findings from the study.

### 6.1 Conclusions

Based on the results of the study, the following conclusions were drawn:

i.   The prevalence of self-medication with analgesics and antibiotics were high among traders in the Akosombo market. And thus it is an issue of public health concern.

ii.  Convenience and cost-effectiveness were the main factors that informed the practice of self- medication amongst the traders in the Akosombo market.

iii. Headache is most the common symptom for analgesic use and upper respiratory tract infections are the major indications for antibiotics use.

iv.  The most common analgesic used in self- medication is Paracetamol

v.   Penicillins are the most frequently used antibiotics in self-medication.

vi.  The main source of drug information for traders in the Akosombo market is the community pharmacists.

vii. Traders aged 31 to 45 years are more likely to use antibiotics for self-medication.

viii. Traders with some level of education were more likely to use antibiotics for self-medication.

**6.2 Recommendations**

The following are recommended based on the above conclusions:

1. The health team members of the Asuogyaman district should start a health awareness scheme to enlighten the traders on the perils of self-treatment with antibacterial and the consequences of resistance to antibiotics.
2. Community pharmacists in the Asuogyaman district should be empowered to provide one-on-one education for traders who call to procure analgesics and antibiotics.
3. The high prevalence of antibiotic use indicates antibiotics are readily available to the traders therefore Pharmacy Council and other regulatory bodies are being called upon to fortify legislative measures that will cease traders from having easy access to these drugs.
4. Pharmacy owners in the district should be inspired to have a pharmacist on duty at all times to provide the needed pharmaceutical care to the traders.

**6.2.1 Recommendations for future research**

This study was basically quantitative in nature. Subsequent studies on self-medication with analgesics and antibiotics should employ the use of qualitative methods to better understand the predictors of antibiotic misuse. More studies should be done on trader populations in other locations of the country to explore into self-medication practices. Future researchers should also adjudge the contribution of the pharmacist in self-medication practices.

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QUESTIONNAIRE

*Please circle the appropriate answer*

## SECTION A - DEMOGRAPHICS

1. Age:………………..

2. Sex:  a) Male    b) Female

3. Marital status: a) Single

   b)  Married/living together

   c). Separated/divorced      d). Widow

4. Ethnicity   a) Akan   b) Ga    c) Ewe    d) Others (please specify) ………….

5. Educational history: a) None   b) Primary   c) Secondary/middle   d) Vocational   e)

   Tertiary

6. Religion: a) Christian b) Muslim c) Traditional d) No religion e) Other  specify

   ……….

7. Language:  a) Akan    b) Dangbe    c) Ewe

   Others (specify) ………………………

8. Which neighbouring town are you from? ....................................

9. Type of trade, please indicate:

   a) Food b) Cosmetics c) Clothing d)  Stationary  e) Others specify……………

10. Place of trade?

    a) Own shop   b) Rented shop   c) Itinerant

11. Do you trade anywhere else apart from the Akosombo market? a) Yes b) No

12. If yes, which other places do you trade? ……………………………….

**SECTION B**

SELF MEDICATION PRACTICES (DRUG APPROACH)

*SECTOR A:* **PAINKILLERS** (Circle as many as apply)

1.Which pain killers do you mostly use?

   a) Paracetamol

   b) Paracetamol + Diclofenac

   c) Paracetamol+ Ibuprofen+ Caffeine

   d) Aspirin + Caffeine (Rapinol)

   e) Ibuprofen (brufen)

   f) Diclofenac

   g) Tramadol

   h) Morphine

   i) Aspirin

   j) I don't know

   k) Others …………………….

   2.What was the reason(s) of self-medication with analgesic? (Circle as many as apply)

   a) Cost saving

   b) Convenience

   c) Recommendation by a friend/relative

   d) Lack of trust in prescribing doctor

   e) Can't afford medical care

   f) Healthcare Center is too far from where I live

   g) Others (specify) ………..

3. Where do you obtain information on drugs?

a) Pharmacist

b) Previous prescription

c) Family/friends

d) Health staff (nurses, doctor)

e) Media (radio, television, internet)

f) Others (Please specify)…………..

4.Have you bought some painkillers yourself before? a). Yes  b). No

*If yes, who did you buy it for?*

a) Self

b) Another person

5.If yes to Q4, which type did you buy most recently?

   a) Paracetamol

   b) Ibuprofen (brufen)

   c) Diclofenac

   d) Tramadol

   e) Morphine

   f) Aspirin

   g) Others ……………

   h) I don't remember the name

6.For what symptoms did you buy the drug for?

   a) Headache

b) Back pain

c) Joint pain

d) Tiredness

e) Others (Please specify)…………......

7.How did you know the quantity to buy?

a) From the pharmacist

b) Depending on my money

c) From previous prescription

d) Guessing

e) Other ………………

8. How did you know the number of days to take it?

a) From previous prescription

b) From the pharmacist/dispenser

c) I know I can take till I feel fine

d) Others……………….

9.How long do you keep left over pain-killers?

a) I don't keep left-overs

b) Less than a month

c) Between one and 6 months

d) Between 6 months and one year

e) More than a year

f) Until it expires

10.Where do you keep left-over painkillers?

a) Inside the Fridge

b) On top of the fridge

c) Medicine container

d) Other (please specify) ……………

11.How do you dispose of leftover drugs?

a) I give it to friend

b) Dust bin

c) Flush it in WC

d) Sink

e) Others (please specify)……………..

## *SECTOR B*: **ANTIBIOTICS**

 1.How many times did you treat yourself with antibiotics in the past one year?

a) Never

b) More than once

c) Two or three times

d) More than three times

e) I can't count

2.What was reason(s) of self-medication with antibiotics?

a) Cost saving

b) Convenience

c) Lack of trust in prescribing doctor

d) Can't afford medical care

e) Healthcare Center is too far from where I live

f) Others (specify) ………..

3. What was your selection of drug based on?

a) Recommendation by community pharmacists

b) Opinion of family members

c) Opinion of friends

d) My own experience

e) Previous doctor's prescription

f) The advertisement

g) Others (specify) ……………

4.What did you consider when selecting antibiotics?

a) Use of antibiotics

b) Brand of antibiotics

c) Price of antibiotics

5.Where do you usually obtain antibiotics from for self-medication

a) Community pharmacies

b) Licensed chemical shop

c) Those selling around/ drug peddlers

d) Leftover from previous prescription

e) Others (specify)    ………..

6. Did you ever change the dosage of antibiotics deliberately during the course of self-treatment

a) Yes, always

b) Yes, sometimes

c) Never

*If Never, please go to Question 9*

7.Why did you change the dosage of antibiotics during the course of self-treatment

a) Improving conditions

b) Worsening conditions

c) To reduce adverse reactions

d) Drug insufficient for complete treatment

e) Others (specify)…………

8. Did you ever switch antibiotics during the course of self-treatment

a) Yes, always

b) Yes, sometimes

c) Never

*If Never, please go to Question 11*

9.Why did you switch antibiotics during the course of self-treatment

a) The former antibiotics did not work

b) The former antibiotics ran out

c) The latter one was cheaper

d) To reduce adverse reactions

e) Others (specify)　……………

10. When do you normally stop taking antibiotics

   a)   After a few days regardless of the outcome

   b)  After symptoms disappeared

   c)  A few days after the recovery

   d)  After antibiotics ran out

   e)  At the completion of the course

   f)  After consulting a doctor/pharmacist

   g)  Others (specify)   ……………

11. Which of the following have you used most recently?

   a)  Flucloxacillin

   b)  Amoxicillin

   c)  Tetracycline

   d)  Flagyl

   e)  Ciprofloxacin

   f)  Clindamycin

   g)  Cefuroxime (zinnat)

   h)  Azithromycin (Zithromax)

   i)  Penicillin V tablet

   j)  Doxycycline

   k)  Amoxicillin+ clavulanic acid

   l)  I don't remember the name

   m) Other (please specify)…………

12. For what symptoms did you buy the drug for?

a) Cough

b) Cold/catarrh

c) Sore throat

d) Diarrhea

e) After surgery

f) Skin infections

g) Stomach "sore"

h) Vaginal discharge/penile discharge

i) Fever

j) Aches and pains

k) Skin wounds

l) Clean the system or blood

m) Others (please specify) ……………..

13. How did you know the quantity to buy?

a) From the pharmacist

b) Depending on my money

c) From previous prescription

d) Guessing

e) Others…………….

14. How long do you keep left over antibiotics?

a) I don't keep left-overs

b) Less than a month

c) Between one and 6 months

d) Between 6 months and one year

e) More than a year

15. Where do you keep left-over antibiotics?

    a) Inside the Fridge

    b) On top of the fridge

    c) Medicine container

    d) Other (please specify)…………………..

16. How do you dispose of leftover drugs?

    a) I give it to friend

    b) Dust bin

    c) Flush it in WC

    d) Sink

    e) Others (please specify) ………………..

17. How do you know the number of days to take it?

    a) From previous prescription

    b) From the pharmacist/dispenser

    c) I Know I can take till I feel better

    **d)** Others……………………….

**SECTION C: SELF-MEDICATION DISEASE SPECIFIC APPROACH**

What do you do two days of experiencing the following symptoms?

**1.Vomiting**

   A. Go to the hospital     B. Take drugs myself

**2. Diarrhea**

   A. Go to the hospital     B. Take drugs myself

**3. Fever**

   A. Go to the hospital     B. Take drugs myself

**4. Toothache**

   A. Go to the hospital     B. Take drugs myself

**5. Frequent urination**

   A. Go to the hospital     B. Take drugs myself

**6. Vaginal /penile infection**

   A. Go to the hospital     B. Take drugs myself

**7. Stomach pain**

   A. Go to the hospital     B. Take drugs myself

**8. Menstrual pain**

   A. Go to the hospital     B. Take drugs myself

**9. Skin infection**

   A. Go to the hospital     B. Take drugs myself

**SECTION D**

**1. Where do you obtain information on drugs?**

a)      By checking the package insert

b)      By consulting a doctor

c)      By consulting a pharmacist

d)      By consulting family members/friends

e)      From the Internet

f)      From my previous experience

g)      By guessing the dosage by myself

**INFORMED CONSENT**

**SELF MEDICATION WITH ANALGESICS AND ANTIBIOTICS- A SURVEY AMONG TRADERS IN THE AKOSOMBO MARKET, IN THE ASUOGYAMAN DISTRICT, EASTERN REGION, GHANA.**

INTRODUCTION AND INFORMED CONSENT FORM TO PARTICIPANTS

Hello,

My name is Debrah Lydia, I am a student at Ensign College of Public Health, Kpong. I am conducting a research on the use of medication without prescription among traders in the Akosombo market. This is an academic work which could be used to formulate a policy. I would very much appreciate it if you could spare some time to answer this questionnaire.

Self-medication is defined as the selection and use of medicines by individuals to treat self-recognized or self-diagnosed conditions or symptoms. Though it has a few benefits, the risks outweigh the benefits. Potential risks of self-medication practices include: incorrect self-diagnosis, antibiotic resistance, delays in seeking medical advice when needed, infrequent but severe adverse reactions, dangerous drug interactions, incorrect manner of administration, incorrect dosage, incorrect choice of therapy, masking of a severe disease and risk of dependence and abuse.

The purpose of this study is to determine the prevalence of self-medication with analgesics and antibiotics among traders in the Akosombo market, to assess the factors that inform the practice of self-medication ,to identify the disease conditions treated with analgesics and antibiotics and to identify the types of analgesics and antibiotics that are most often used in self-medication.

*Confidentiality*

This information you're about to share will not be disclosed to anyone outside this research team. Your name will not be written, but a number will be assigned to your questionnaire. Every information from this research will be kept private and under lock and key.

*Risks*

This survey might require you to give very personal details about your self-medication experiences or practices. You might feel a bit awkward about some of the questions I'll ask but bear in mind you don't have to answer any question if you don't want to. You should also bear in mind you don't have explain if you refuse to partake in in this survey and you don't have explain why you don't want to answer any questions you're uncomfortable with.

*Benefits*

You will not be given anything to motivate you to partake in this survey. However, your participation might assist us to find out more about self-medication and to find ways and means to educate people to make informed decisions about the drugs they take even when they want to self-medicate.

*Duration*

Due to the detailed nature of the questions I'm about to ask you, this interview might take 25 to 35 minutes to complete. It will involve some questions about your perception and experiences related to self-medication.

It is not compulsory to partake in this survey and you're not obliged to answer any or all of the questions.

**Do you have any questions to ask about the interview?**

Do you want to partake in it? **YES** ☐        **NO** ☐

**ANSWER ANY QUESTIONS AND ADDRESS RESPONDENT'S CONCERNS.**

RESPONDENT *AGREES* TO BE INTERVIEWED

| 1 |    - - - - →   BEGIN

RESPONDENT *DOES NOT AGREE* TO BE INTERVIEWED

| 2 |    - - - - →   END

**Name of Interviewer** _____

**Date:** _____

**RESPONDENT'S SIGNATURE:** _____

THUMB

PRINT