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CHANNELS OF MEDICINAL ADVERTISEMENTS AND ITS ASSOCIATION WITH SELF-MEDICATION AMONG ADULTS IN EFFIA-KWESIMINTSIM MUNICIPALITY.

BY

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DECLARATION

I, ANN TETTEH OFOSU hereby declare that, except for other people's works which have been duly acknowledged, this work is the result of my effort, and has not been submitted either in part or whole for any other degree in this University or elsewhere.

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DEDICATION

To my adorable parents Mr. Emmanuel Tetteh Ofosu and Madam Grace Mensah

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ABSTRACT

Background: Self-medication is still a major health concern among adults especially in developing countries. The media is one of the leading sources of information about medicine to the public and there is an increase in information seeking needs of the public concerning medicines. The success of an advertisement largely depends on the media or channel through which it is communicated or transmitted. Thus this study aims to determine the association between channels of medicinal advertisements and self-medication**.**

Methodology: This was a cross-sectional study. Adults aged 18years and above completed a self-administered questionnaire. The questionnaire included items on demographic variables, exposure to medicinal advertisements, and self-medication. The study was conducted in twelve pharmacies and six chemical shops of Anaji and Kwesimintsim in EKMA. Multi-stage cluster sampling and purposive sampling was used to select two electoral areas and simple random sampling was used in selecting 400 participants for the study. Basic descriptive statistics were performed and results were presented in frequencies and percentages using tables. The data were analyzed using STATA version 16 applying multivariate logistic regression and Pearson`s Chi-square/Fisher`s exact test.

THE RESULTS: The prevalence rate of self-medication was (62.3%). The mean age is 36.9 ±14.8 years. 35.8%of the respondents were aged between 18-28years. Most of the respondents have tertiary education 38%, and 58.0% were employed. Exposure to advertisements was

significantly associated with self-medication (p=0.003). The likelihood of a person not exposed to medicinal advertisement practicing self-medication is less (AOR= 0.37, CI=0.18-0.74) compared with those exposed to medicinal advertisements.

The most common class of medicine mostly purchased was analgesics (58.6%) and television (73.9%) was the channel most accessed by adults in EKMA. 72.2% of the respondents obtained their medicine for self-medication from pharmacies and chemical shops. Television (p=0.001), billboard (p=0.002), in a car (p=0.002), and social media platforms (p=0.000) were the channels that were significantly associated with self-medication. The likelihood of a person not exposed to medicinal advertisement on television, billboard, in a car and social media, not practicing self-medication were less (AOR=0.39, CI=0.21-0.72; AOR= 0.42,CI= 0.17-1.06; AOR= 0.37,CI= 0.17- 0.79; AOR=0.24,CI=0.11-0.54) respectively compared to an individual exposed to medicinal advertisement on these channels.

Conclusion: The study confirmed an association between medicinal advertisements and self-medication thereby designating it to be an important predictor of self-medication among adults in EKMA. The findings from this study indicate that the channels of medicinal advertisements such as television, in the vehicle, social media, and billboards are significantly associated with self-medication. Medicinal advertisements on these channels or media play a vital role in impacting an individual's decision on the purchase and use of medicinal products. These channels can thus be employed to educate the public on safe medication practices such as the harmful effects of self-medicating and the need to consult a pharmacist or physician concerning all medications. There is a need for the implementation of the policy to monitor, control, and regulate the sale of non-prescribed medicines by the Pharmacy Council. The regulator of medicinal advertisements,

FDA should have limitations on the advertisements of these medicines in terms of the frequency of these advertisements on the various channels of advertisements.

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LIST OF ABBREVIATION

AD	ADVERTISEMENT
ADR	ADVERSE DRUG REACTION
DTCA	DIRECT TO CONSUMER ADVERTISEMENT
EKMA	EFFIA KWESIMINSTIM MUNICIPALITY ASSEMBLY
FDA	FOOD AND DRUG AUTHORITY
OTC	OVER THE COUNTER
POM	PRESCRIPTION ONLY MEDICATION
SM	SELF-MEDICATION
STMA	SEKONDI-TAKORADI METROPOLITAN ASSEMBLY
TV	TELEVISION
WHO	WORLD HEALTH ORGANISATION

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the study

In recent times, there has been an increase in the use of various medicinal products by individuals without a prescriber's advice for varied purposes and reasons.

Self-medication involves the use of medicinal products by an individual to treat or manage self-recognized disorders or symptoms, or the intermittent or continued use of a medication previously prescribed by a physician for chronic or recurring diseases or symptoms (WHO, 2000). It practically also comprises the use of left-over medication by family members and friends (WHO, 2014). It is mostly practiced where the symptoms of an ailment are perceived to be worrisome, but not considered serious to consult a health care provider.

In the United State of America, 42% of people take drugs without a physician's prescription. The prevalence of self-medication is reported to be 91% in Indonesia and 57% in Indian (Sina, 2017). The prevalence in Ghana is about 70% ((Donkor, Tetteh-Quarcoo, Nartey, & Agyeman, 2012).

In developing countries such as Ghana, both orthodox and herbal medicinal products are used for self-medication. Self- medication is a major concern worldwide due to its prevalence and the harmful effects it presents. It is a major health concern in both developed and developing countries due to health problems such as injuries or death from misuse of medicine (Kazaura, 2017).

Over the years, there has been a tremendous improvement in people's educational, socioeconomic, and level of education resulting in an increase in self-medication by individuals (WHO, 2000). However, self-medication has been incorporated into some health care systems in some countries. Self-medication products usually referred to as over the

counter medication (OTC); do not require a prescription before purchase. Self-medication practiced responsibly helps reduce the pressure on health facilities and helps individuals living in rural and remote areas where medical facilities are difficult to access, manage their ailment for a while (Vidyavati, 2016). Several factors have been associated with the practice of self-medication; these include cost-effectiveness, disorganization of the health care system, affectivity, oversimplification of an individual's health condition, and promotions of medicinal products (Fereidouni, Kameli Morandini, & Najafi Kalyani, 2019).

Easy access or availability of different medicinal products over the counter from pharmacies and chemical shops has contributed to the practice of self-medication. Inadequate knowledge of the harmful consequences of self-medication is also a factor for its practice (Karbownik et al., 2019).

Self-medication has been identified to contribute to about 67% of the burden of disease and a 3% contribution to congenital anomalies mostly as a result of the side effects of these medicines which adds an extra cost to the health care system (Karimy, Rezaee-Momtaz, Tavousi, Montazeri, & Araban, 2019).

Several health problems related to self-medication cannot be overlooked and include microbial resistance, toxicity as a result of wrong dosages, delayed, or no response to treatment. These may ultimately result in an increased mortality of an individual (WHO, 2002).

The rising demand for pharmaceutical or medicinal products can partly be related to the massive investments by pharmaceutical companies in advertising and promoting medicinal products. The use of medicinal advertisements as a marketing tool is steadily on the increase.

Pharmaceutical companies, hence spend large amounts of money on promotional activities including medicinal advertisements (Limbu, McKinley, & Temperini, 2019).

There have been several judgments against pharmaceutical advertisements from being misleading in the information or message it projects, resulting in incorrect therapeutic choices and decisions. Consumers are tempted to obtain treatments that are more expensive than "normal" treatment and also unnecessary (Amin & Fattouh, 2017). Advertisement plays a significant role in shaping the attitude and influencing the behavior of people (Ghia, Jha, Rambhad, 2014). Advertisements are mostly used by some pharmaceutical companies in creating, building, and establishing the brands of the medicine being advertised.

Advertising channels exist in various forms and have varying impacts on consumers' perception and behavior towards the item being advertised (Spilker-attig, 2010).

The two main channels of advertisement include off-line and online advertisements. The offline is characterized by the use of traditional media such as television, radio, print (newspapers and magazines), and billboards (Dinner, Heerde, & Neslin, 2014).

Online pharmaceutical advertising includes search and display ads, websites, e-mail, social, and mobile media advertising (Eisend, 2019).

The medium of an advertisement affects the experience received by a viewer and thus advertisements are designed based on the medium or channel of advertisement. For example, the experience of a radio advertisement will differ completely from an advertisement found through browsing on the internet, resulting in a varying effect on the consumer (Adams, 2016).

1.2 Problem Statement

Medicinal advertisements include any notice, circular, report, commentary, pamphlet, label, wrapper or another document, and any announcement made orally or by any means of producing or transmitting light or sound which includes but not limited to: advertising on electronic ordering system, aerial promotion such as hot air balloon and floor advertising and other sign articles or advertorials in journals, magazines, and newspapers brand reminders branded material relating to product sponsorship bulletins and newsletters, calendars, catalogs, consumer brochures, booklets, leaflets, pamphlets and broadsheets consumers promoters counter-top advertising cinema, television, and radio/audio commercials, direct mail, materials directories, display packs, giant mock-up boxes, online advertising, outdoor displays such as billboards, banners, bunting and posters point of sale materials of a medicinal product (FDA,2019). The practice of self-medication is a major concern among adults, especially in developing countries. Past surveys of patient information-seeking have indicated that media sources are more important than health professionals in learning about new medicines and their effects (Leonardo, Joel, & Mintzes, 2019). There is a need to know the extent to which these channels of advertising medicinal products are associated with self-medication. Medicinal advertisements on various channels or media are currently on the increase, creating awareness of medicinal products such that individuals perceive they can treat themselves without seeking professional healthcare services. Many mass media researchers have various postulations about the effects of advertising, on people's behavior and people rely on various advertisement channels for

information to satisfy their various needs. Advertisements of medicinal products are usually carried out at peak times of the day, targeting the attention of a lot of potential consumers. Medicinal advertisements convey a message of confidence to consumers in regards to the safety of medicinal products; hence most consumers hardly seek further information and this encourages self-medication (WHO, 2010). Medicinal advertisements appeal to consumers to purchase medicinal products, mostly portraying the benefits more than the risk. However, according to the FDA guidelines on an advertisement, restrictions of use of medicinal products and other precautions which are to be emphasized are not. Instead, the benefits over the risks are stressed on, encouraging their use without consultation with a medical practitioner. An increase in these advertisements on various advertisement channels makes consumers aware of the availability of these medicinal products (WHO, 2000).

The situation of self-medication practice in EKMA among adults is a major problem as many adults do not seek health care services from qualified health professionals as they prefer to purchase medicine from pharmacies and chemical shops for self-treatment. These adults visit health facilities as and when they deem necessary and usually do not realize the need to visit with minor ailments (Sekondi- Takoradi Citizens' Report Card, 2012). There is also a scarce data on self-medication associated with medicinal advertisements on various channels of advertisement, hence the need for this study in EKMA which is one of the newly created district assemblies in 2018 in the Western region. Do these medicinal advertisements on the various channels have a link on the medication purchase behavior and self-treating of an adult in EKMA?

The study is thus designed to help determine the association between channels medicinal advertisements and self-medication to help inform the policy on the regulation of medicinal

advertisement through the various medicinal advertisement channels. It will also aid in the regulation of the sale and use of these medicines and thereby limit the practice of self-medication by individuals.

1.3 Justification of the study

Results from this study will go a long way to inform the policy decisions regarding the strict regulation of advertisements for medicinal products in Ghana. Furthermore, findings from this research will add to knowledge of existing literature on the extent of association of advertisements with self-medication.

Also, the channel of advertisement mostly preferred by consumers could be used as a medium for education on health-related problems. Self-medication can therefore be curbed if not put to a stop. It will establish the need for the right medical information to be conveyed to consumers, thereby limiting drug resistance, polypharmacy, and adverse drug reaction associated with self-medication. These channels of advertisement can hence be used as mediums to promote responsible and effective medication use.

1.4 Theoretical Framework

A theory is an abstract statement that provides an understanding or explanation of something observed in the social world (Tan, 1986). Theories help us understand or explain the phenomena we observe in the social world (DeFleur & Ball Rokeach, 1982).

Advertising is a tool of communication and also a marketing tool that is subject to many theories and explanatory models. Most theories of advertising have explored the connection between persuasion and attitude, establishing possible feedbacks that the receiver can give to advertising

information (Aziz et al., 2018). This section discusses an explanatory model on the association of medicinal advertisements on self -medication. The study is employing the AIDA model and uses and gratification theory.

1.4.1 AIDA MODEL

This model was propounded by Elias St. Elmo Lewis. This model is mostly utilized by advertisers in communicating advertisement information on various channels of advertisements which include television, radio, print, billboards, etc. The success of an advertisement largely depends on prospective buyers hence the target of an advertisement (Mekawie & Hany, 2019). The model has four phases or stages namely: Attention, Interest, Desire, and Action. The model proposes that the first phase which is the attention phase, which gives a potential buyer or consumer a reason to notice a product being advertised. The purchase process begins when one becomes aware of a product and in this study a medicinal product. Channels of advertisement such as television, radio, internet, billboards, etc. are engaged to increase a potential buyer's interest in a medicinal product and thus stimulate a desire of using the medicinal product in the potential buyer (Spilker-attig, 2010).

Medicinal advertisements on various channels or media do not only create attention or awareness to the medicinal product but also produce some sort of interest in the potential buyer to use the medicinal product. This interest is created by advertisers relying on previously gained attention and engaging in the use of the medicinal product (Prabha et al., 2019). This interest may motivate a person to read more on the medicinal product or seek the views of others to use the medicinal product. The interest of a potential consumer is gained through appealing images and information on the benefits of the use of a medicinal product.

The desire for a medicinal product may be created in a potential buyer or consumer by using some significant words in an advertisement such as the benefits the medicinal product may offer a potential buyer or consumer (Mekawie & Hany, 2019). As a result, a desire to get that medicinal product may increase in the potential buyer or consumer.

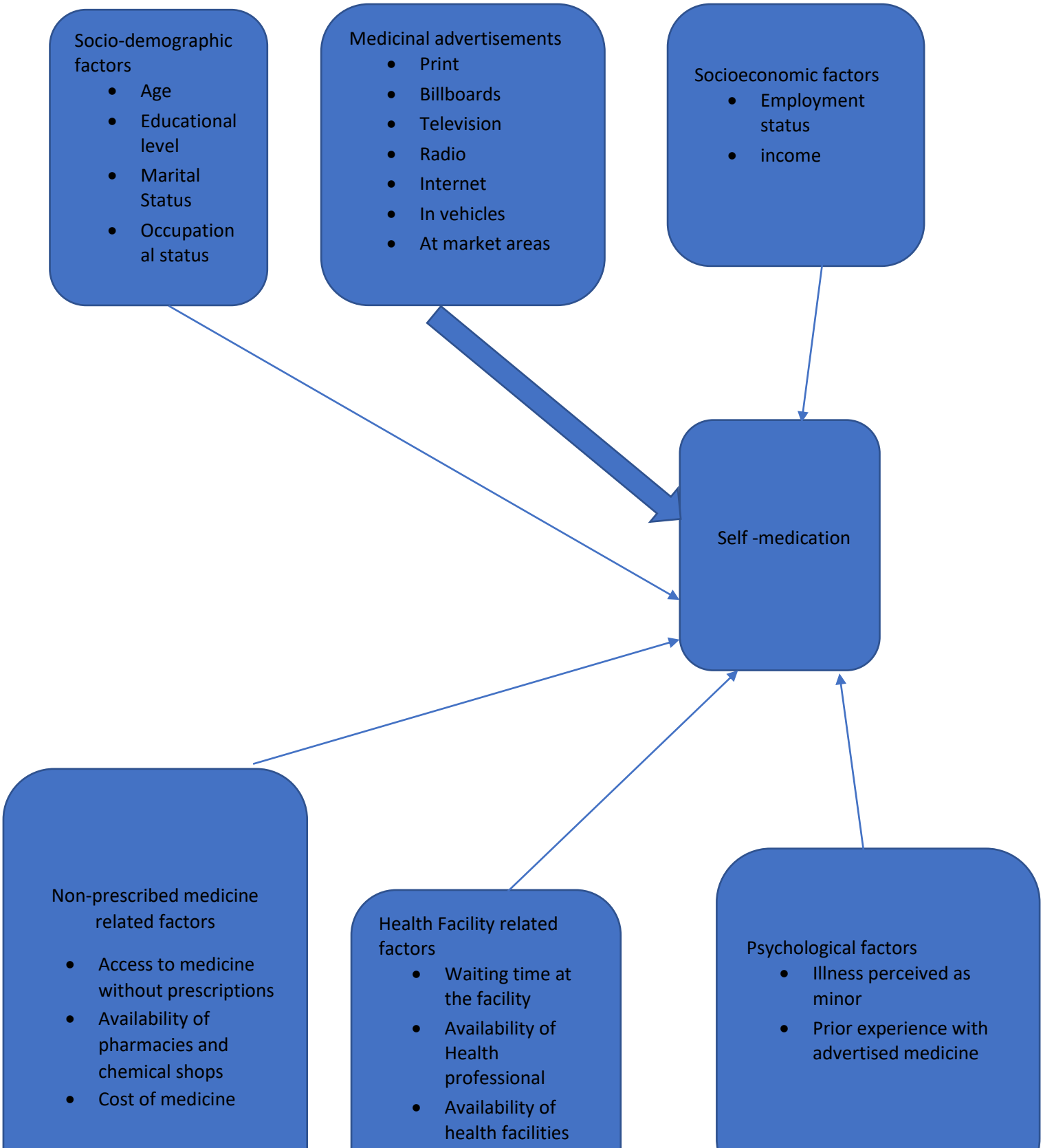
The fourth stage of this model is action. A person may take action after being exposed to a medicinal advertisement based on some information provided in the advertisement. An example is; the provision of numbers to call for a medicinal product, location, and names of wholesale and retail pharmacies to purchase medicinal products, predispose a potential buyer or consumer to take action of getting that medicinal product. Taking a medicinal product without the directives of a physician thus leads to self-medication. From this model, the research seeks to identify this association (Kazaura, 2017).

This model demonstrates that a potential buyer or consumer will first be aware of the existence of a medicinal product, interested enough based on some information (benefits features) provided in the advertisement to desire the use of the product and might thereby take action in buying and using the medicinal product. The number of times a person is exposed to an advertisement may increase its interest, desire and may also lead to action of getting the product and the purchase of the medicine without a prescription is self-medication which is what the study aims at identifying (Scott, Gibson, & Benner, 2018).

1.5 Conceptual Framework

The conceptual framework contains both the dependent variable and independent variables. The dependent variable is self-medication practice among adults and the independent variables are grouped into six major broad factors. These factors include socio-demographic factors,

socioeconomic factors, health facilities related factors, non-prescribed drug-related factors, psychological factors, and medicinal advertisement factors.



Source: Student Author

Figure 1: Conceptual framework of factors relating to self-medication

1.5.1 Description of Conceptual Framework

Socio-demographic related factors such as educational status, age, marital status, occupational status, can have both positive and negative effects on the practice of self-medication. Some research results show that the prevalence of self-medication in educated people is more because of their access to information about drugs. However, a similar study revealed no association between educational status and self-medication. Okumura et al. (2002), also argue that higher education increases self-confidence about accurate drug use and its probability of self-medication. According to Afolabi (2012), the high rate of people's inability to read labels on drugs and poor access to medical information in most developing countries could be a major contributing factor to the high prevalence of self–medication. The ability to read drug labels and have basic knowledge on the pharmacological properties of drugs, make one better informed on the harmful effects of drugs and hence will appreciate the need to see a physician before taking any medicine (Aishwaryalakshmi, Sasikala, Sreelalitha, Vigneshwaran, & Padmanabha, 2012).

Also, there has been a study to suggest a relationship between self-medication and people who are self-employed. Self-employed people are often independent and are used to making autonomous decisions about their lives including their health (Figueiras et al., 1999). Self-

employed people may be unwilling to leave their businesses unattended aside their independent nature.

Moreover, health-related factors such as availability and accessibility of health facility, skilled health professional, and availability of medicines in the facility, cost of transportation, and accessibility of transportation to the health facility can have much influence on the practice of self-medication both positively and negatively. Adults, who have access to a health facility, as well as affordable health care, are likely not to engage themselves in self-medication. The availability and easy accessibility of health facilities, skilled health personnel, medicines in the health facility, low cost of transportation, and easy access to transportation will motivate adults to seek appropriate medical care, therefore, reducing the incidence of self-medication (Yusuff & Omarusehe, 2011).

Furthermore, psychological factors such as perceived illness as minor and prior experience with medicines advertised may influence adults to self-medicate. Adults who have symptoms mentioned in advertisements will perceive such symptoms as minors are more likely to practice self-medication compared to those who perceive their illness as serious. Also, the experience of adults with some medicine advertised, used in the past to treat particular symptoms or disease conditions is more likely to self-medicate when they experience the same symptoms compared to those who did not (Agyei-Boateng, 2015). Again, easy availability and accessibility of medicines being advertised, in pharmacies and chemical shops can influence adults' chances of self-medicating. Adults who have easy access to medicines in terms of it availability and affordability are more likely to self-medicate compared to those who live in areas where accessibility to drugs at the chemical shops is a major problem are more likely not to self-medicate but will rather visit

the health facility or see a health professional for medical care (Togoobaatar, Napolitano, Izzo, Di Giuseppe, & Angelillo, 2010).

1.6 Research Questions

1. What is the proportion of adults who practice self-medication based on the channels of medicinal advertisement?

2. Which channels of medicinal advertisement contribute more or less to self-medication?

3. What class of medicines is mostly purchased due to medicinal advertisements?

4. What is the relationship between medicinal advertisement channels and self-medication?

1.7 Main & Specific Objectives

1.7.1 Main Objectives

To estimate the association between medicinal advertisement and self-medication among adults within the Effia-Kwesimintsim Municipality of the Western region.

1.7.2 Specific Objectives
Specifically, the study seeks to achieve the following objectives

- To estimate the prevalence of self-medication among adults in EKMA
- To estimate the prevalence of self-medication as a result of medicinal advertisement channel among adults in EKMA
- To determine pharmaceutical channel of medicinal advertisement frequently accessed among adults in EKMA

- To find out the class of medicine mostly purchased based on medicinal advertisement
- To identify factors associated with the purchase of medicines from medicinal advertisements among adults in EKMA
- To determine the association between self-medication and medicinal advertisements

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

2.1.0 Self-Medication

Self-medication is a grave public health concern due to its harmful consequences and prevalence. Across the world, self-medication is a common occurrence and has a prevalence of 42% in the United State of America 91% in Indonesia, and 57% among Indian women. In different parts of the world, the prevalence of SM is between 36-83% (Karimy et al., 2019). The practice of self-medication is more common in developing countries. According to Donkor, Tetteh-Quarcoo, Nartey, & Agyeman, (2012), the prevalence of self-medication in Ghana, is about 70%.

Self-medication is defined as obtaining and consuming a medicinal product without the directions or guidance or supervision of a physician for either diagnosis or treatment (Helal & Abou-Elwafa, 2017). OTC medications are mostly used for self-medication since they can be sold without a physician's prescription. However, some prescription-only medicine (POM) is sometimes also used for self-medication. The use of leftover medication of relatives or from previous treatment all constitutes the practice of self-medication (Jadav, Dumatar, & Dikshit, 2014).

Classes of medicinal products commonly used for self-medication include herbal medications, analgesics, antibiotics, and cold and cough preparations (Jeneta, Priya, & Gayathri, 2018).

2.1.1 Factors Influencing Self-Medication

2.1.1.1 Socio-Demographic Factors

Self-medication has been acknowledged to be influenced by numerous demographic factors such as age, educational level, religion, occupational status. According to a cross-sectional study by (Subashini & Udayanga, 2020), young adults aged between 24-26 years were observed to have the highest prevalence (81.3%) of self-medication. A feasible explanation according to (Olivar & Rodilla, 2018) is that younger people manage illness without consulting a physician because they have less chronic conditions than older people who are frequently under treatment due to chronic conditions. Furthermore, young adults usually have more access to obtain information mainly through the internet as a result of better education and also they mostly lack the time to consult a physician (Tripković, Nešković, Janković, & Odalović, 2018).

It is perceived that a higher level of education is significantly associated with self-medication, knowledge, and awareness of medications that has to influence the health-seeking behavior of individuals. According to a recent study by (Pakseresht, Sherehjini, Rezaei, Kazem, & Leilie, 2020), the proportion of people who self-medicated was excessive in those with secondary or higher education. However, this knowledge and awareness may result in the engagement of self-medication practices rather than consulting a physician (Fereidouni, Kameli Morandini, & Najafi Kalyani, 2019).

Helal & Abou-Elwafa(2017) revealed that there is a relationship between individuals who are employed and self-medication. People who are employed are usually independent and normally

reflect in their decisions including health decisions. Thus are more likely to take medication without seeing the need to consult a physician. Employed individuals also lack the time to see a physician due to the nature of work or business they are engaged in.

2.1.1.2 Non-Prescribed Drug-Related Factors

Recent studies on self-medication reveal that, easy availability and accessibility of pharmacies and chemical shops are contributory factors of the burden of self-medication. A study in Iran (Mortazavi, Shati, Khankeh, Ahmadi, & Mehravaran, 2017) reveals that medications are available to individuals usually without any limitation such that medicines are simply purchased with or without prescriptions. Mostly the cost of medicines is usually cheap as compared to high consultation fees when one requires the services of a physician and also faster since there is usually no or little waiting times at the pharmacies. The results from a community based cross-sectional study by (Kassie, Bifftu, & Mekonnen, 2018) revealed that individuals who had access to pharmacies are more likely to practice self-medication.

2.1.1.3 Psychological Factors

Previous experience with medication and advice from family and friends was strongly associated with the practice of self-medication. Previous experience with medicine for treatment creates a sense of consciousness in the use of the medicine for treatment and thus encourages an individual to resort to it especially when the person experiences the same symptoms. Advice from friends and family may be the source of information concerning medication and pressure from them to use these medicines results in self-medication (Mortazavi et al., 2017). The perception of an individual on the fact that his or her illness is minor also results in the practice of self-medication. The belief that common diseases such as colds, coughs, and headaches could

be effectively treated by an individual through SM. These common ailments could however be the underlying predictors of a more serious disease condition (Alshogran, Alzoubi, Khabour, & Farah, 2018).

2.1.1.4 Health Facility Related Factors

In developing countries due to low economic output and poverty, there are limited health facilities and sometimes few people have the economic means to afford these health facilities. In the bid to cut down on the cost of consultation and transportation especially among the populace in rural areas who have to travel long distances to access healthcare, they intend to resort to the practice of self-medication. Donkor et al.,(2012) studying the practice of self-medication in Ghana revealed that access to healthcare is still a challenge in rural areas than the urban areas because of the lack of access to physicians and health services in these areas thus resorting to taking health decisions without consulting a health professional. Lack of education and poverty in these rural areas are contributory factors to the practice of self-medication. (Kazaura, 2017)

Barriers to accessing good and quality healthcare especially in public health institutions include lack of time to visit a health facility, attitudes of health workers, non-availability of medicines (Pakseresht et al., 2020). The availability of good health structures and systems influence the health-seeking behaviors of individuals.

2.1.1.5 Most Frequently Used Medicine and Disease Conditions for Self-Medication

According to a recent study in North East Ethiopia, undertaken by (Kassie et al., 2018), the most utilized medicine for self-medication was analgesics and antipyretics with headache and fever being the common symptoms necessitating its use. A study conducted among pregnant women in

Iran, however, had the frequency of self-medication to be high for conditions such as fatigue, weakness, and anxiety. (Karimy, Rezaee-Momtaz, Tavousi, Montazeri, & Araban, 2019)

Some prescription medications such as antibiotics are frequently used for self-medication and mostly misunderstood by the majority of the populace as being effective as antitussives, antipyretics, and analgesics (painkillers). (Donkor et al., 2012). A study conducted in Cameroon, resulted in the prevalence of antibiotic use for self-medication to be 62.3%. Findings also revealed the misuse of antibiotics among children through high self-medication by their parents and this is due to poor knowledge on the role of antibiotics and observing no difference between viral and bacterial infections (Ekambi et al., 2019).

2.1.1.6 Consequences of Self-Medication

Responsible self-medication has been identified with some benefits such as reducing the burden or load medical services and healthcare facilities, saving scarce medical resources on minor health conditions reduction in the time and cost spent at healthcare facilities by individuals (Jeneta et al., 2018). However, the risk and burden of self-medication can cost higher than the potential benefits of self-medication. Drug and food interactions, adverse drug reactions are a common occurrence of self-medication. Treatment for these poses a higher burden on health facilities (Faeh, 2014).Wrong therapy choice, incorrect or inadequate dosage of medication may occur as a result of little information in the medicinal product selected by an individual. Inappropriate use of medicinal products for self-medication also leads to drug-dependence and abuse of the medicinal product (Ekambi et al., 2019). Serious ailments sometimes present trivial symptoms and thus self-medication may mask severe diseases and resistance to some medicine particularly antibiotics leads to waste of financial resources by individuals (Zadeh, Robertson, & Green, 2019).

The scarce information of ADRs sometimes in developing countries is sometimes due to self-medication caused by lack of legislation and proper drug regulations, circulation of substandard and counterfeit medicinal products on the market, lack of independent information, and irrational use of medicine (WHO, 2002).

2.2 MEDICINAL ADVERTISEMENTS

2.2.0 Introduction

According to (Norris, Herxheimer, Lexchin, & Mansfield, 2004), drug promotion includes all the persuasive and informational ventures by pharmaceutical companies. The result of this is to induce prescription, supply, purchase, and use of medicinal products. The persuasive activities comprise the actions of medical representatives, direct-to-physician promotion (DTPP), direct-to-consumer advertisements (DTCA), broadcast, print, and internet advertisement (Adibe et al., 2015).

In Europe and the United States of America, the issue of pharmaceutical advertisements is a controversial issue due to different interests at stake on the part of the public and pharmaceutical companies (Jadav et al., 2014). Pharmaceutical companies are interested in broadcasting information and the public is also interested in having access to information. There is however a public health concern of protection from insufficient and false information (Faeh, 2014).

In the pharmaceutical industry, advertisements are mostly employed as a tool for promoting various medicinal products to potential clients (Koinig et al., 2017). There is a high increase in

the patronage of advertisements by pharmaceutical companies. In the USA, people are exposed to about 4000 to 10000 advertisements per day and in the United Kingdom, an individual is exposed to about 47 advertisements per day (Oliver, 2013).

According to (WHO, 2000), pharmaceutical advertisements should not take undue advantage of the public, regarding the concern for their health. There is a rise in the consumption of medicinal products which can be attributed to the massive investments of pharmaceutical companies in medicinal advertisements (Limbu et al., 2019). With increased media advertisements of various medicinal products in print, electronic, and traditional broadcast media means the population is constantly bombarded with a lot of content the authenticity cannot be vouched for though it undergoes some regulatory processes (WHO, 2002).

2.2.1 Channels of Medicinal Advertisements

Advertising of medicinal products such as analgesics, antimalarial, anti-helminthic, herbal medicines, and hematinic are usually carried out on various channels or mediums based on the target audience. The various channels include television, radio, billboards, advertising in vehicles, the internet, and social media platforms. There is a lack of robust research on the channels of medicinal advertisements and its contribution to self-medication. The gap this study seeks to address is the unavailability of in-depth and sufficient information on the actual link of the various channels of medicinal advertisements and self-medication.

2.2.1.1 Television Advertisements

Television advertising is usually considered most effective when the target audience consists of a wide range of people. Repetition of a medicinal product makes recall of the product easier which usually impacts its purchase. Television advertisements are usually attractive, thereby getting the attention of viewers and creating trust among the viewers concerning the product advertised and impacts on the ultimate act of buying (Jadav, Dumatar, & Dikshit, 2014). Despite the internet era, television still plays a key role in the marketing of products. According to a study conducted by (Thomas, 2013), about 33% of the respondents acknowledged the purchase of a product immediately after a television advertisement and about 40% usually make purchasing decisions based on television advertisement due to the desire it creates in the individual to purchase the product. It was however be argued by (Burton, 2014) that, about 60% of individuals however do that pay attention to an advertisements on television.

2.1.1.2 Radio Advertisement

The use of radio for conveying information is usually excellent since it reaches a large number of people at a low cost. The non-availability of electricity still renders radios useful since batteries can be used for its operation(Martín-Santana & Reinares-lara, 2018) .

A radio advertisement is also a widely used medium of advertisement which employs only auditory means, unlike television which employs both visual and auditory means of communication. Although there is an increase in online media for advertisements the traditional media such as radio, television, and print are not obsolete (Hugelius, Adams, & Romo-murphy, 2019). According to a study by (Shen & Sheer, 2015) advertisements delivered through audio and video means have a large effect on the persuasion of a consumer. Radio advertising is a form of marketing communication that usually aims at drawing the attention of the listener to the product being advertised thereby increasing the purchasing and consumption of the product for economic gains (Olaiya, 2016). Radio advertising usually encodes messages that remain in the mind of the listener and messages are also appealing to the listener or consumer.

2.1.1.3 Billboard and Print Advertisement

The use of billboards for advertisements has existed for years. Billboards are defined as "large format advertising displays intended for viewing from extended distances, generally more than 50 feet"(Fortenberry & Mcgoldrick, 2020). This medium can be viewed by lots of people but have the disadvantage of being ignored by an individual who is busy with some task and has also been criticized for causing environmental damage where vegetation has to be cleared to mount a billboard. Billboard is assumed to have a high frequency of exposure on individuals and also has

a high capability of providing recall of the product being advertised (Franke & Taylor, 2017). The use of billboards creates awareness of the product; however, the strategic location of a billboard by a marketer will render it advantageous to the marketer.

The print medium of advertising is also a traditional medium of advertisement and has existed for a long time, is still actively used for advertisement despite the surge of online media. Print media actively plays an essential role in communication. Print media includes newspapers, magazines, and booklets used for advertising and serves as a source of information for patients to make their choice. According to a study by (Medicines, 2015), print media advertisements were the second largest (19.7%) media of advertising of medicines.

2.1.1.3 Internet Advertisement

Technology has become an integral part of our daily lives and research reveals that about more than 95% of people use smartphones (Zeljko, Jakovic, & Strugar, 2018)**.**

In recent times advertising via the internet seems to be the current trend and has revolved around the way individuals and organizations communicate. Advertisements are usually made via social media networks which are channels for interacting on social grounds with other people. Some social networking sites include Facebook, WhatsApp, and Twitter (Mekawie & Hany, 2019). Unlike the traditional methods of advertisements, social media advertising is mostly inexpensive and easily accessible for everyone and gives room for interaction to take place between the marketers and the consumers. There is a dialogue system of feedback for both consumers and marketers where consumers get feedbacks to take steps in the use of products and marketers also get feedback on products and services. Advertising on these media is also mostly not timed bound like the traditional methods where time is allocated (Liao, Hsiao, Li, & Lin, 2015). This

technology could be employed to produce smart phone apps that will promote the responsible used of medication.

2.2.2 Regulation of Pharmaceutical Advertisement

The promotion of medicines through advertisements is globally standardized by the 1933 WHO publication, Ethical Criteria for Medicinal Drug Promotion. Thus other counties usually self-regulate medicine promotion by incorporating the WHO publication employing codes and guidelines (Mclean, Kohler, & Edwards, 2019).

There is a lot of controversy surrounding the practice of direct-to-consumer (DTC) marketing of pharmaceuticals. Some people argue that DTC advertising serves as an educational platform for patients to know more about their health (Cardon & Showalter, 2015), others say that DTC leads to overuse and misuse of pharmaceutical products (Zadeh et al., 2019).

Since the introduction of direct to consumer advertising (DTCA) in the USA in the 1980s, there have been phenomenal increases in spending on DTCA. Few governments spend resources on the regulation of promotional activities of medicines by pharmaceutical companies (Leonardo et al., 2019).

In Ghana, the Food and Drugs Authority (FDA) is responsible for regulating pharmaceutical advertisements in the country. The FDA does not allow lay press or non-medical advertisement of prescription and pharmacist initiated medicine. These medicinal products can only be advertised through scientific or medical journals, promotional materials, and product launches and such advertisements have to be vetted and approved by the authority. Non-medical

advertisements approved by the FDA is that of OTC's, including allopathic, food supplements, herbal and homeopathic products.

FDA (2019), defines advertising as "the publicity of goods and description of products; this includes any form of notices in circulars, handouts, label wrappers, catalog and price lists, newspaper, magazines and many other documents made orally or otherwise or utilizing projected light, sound recording, radio, presenter mentions, television, billboards, mobile vans, social media, and writings". An applicant who wants to advertise a medicinal product is expected to fulfill some requirements by the FDA. The information presented by an advertisement should be clear, concise, and be balanced in informing on side effects, contraindications, efficacy, and safety. Strict regulation of advertisements on these channels will ensure the dissemination of the right information to the right audience and help in the right application of these medicinal products advertised. There is a need of the enforcements of regulations to promote rational use of medicine.

CHAPTER THREE

3.0 METHODS

3.1 Introduction

This chapter describes the plan of action that was utilized to achieve the objectives of the study. It furnishes information on the study type, research design, study location, study population, and study variables. It also supplies information on sample size, sampling methods, data collection methods, data analysis procedures, and ethical clearance.

3.2 Study Design

This study is quantitative. A cross-sectional study design was used to achieve the objectives of the study because the study involved the collection of data from a population at a specific point in time. It provided a quick and easy data collection approach with regards to the limited time allocated for the study to take place. This design provided a means to collect the required data necessary for analysis based on the objectives outlined for the study.

The study was conducted among adults in pharmacies and chemical shops in the Effia-Kwesimintsim Municipality. Permission was sought from Pharmacy Council and entry was negotiated to the various pharmacies by contacting the pharmacy owners who allowed the study to take place in their facility. During this study, adults who purchased medications in pharmacies and chemical shops were administered questionnaires to determine the proportion of adults who

practiced self-medication, the factors that drive the purchase of medicines based on medicinal advertisements, medicine mostly purchased for the practice of self-medication based on medicinal advertisements, disease conditions that warranted self-medication, exposure to medicinal advertisements, the frequency of this exposure and the relationship between self-medication and exposure to these medicinal advertisements. The collection of data and analysis was done within three (3) weeks, from 26th October to 10th November 2020 using a structured questionnaire.

3.3 Study Location

Figure 2: Map of Sekondi Takoradi Metropolitan Assembly

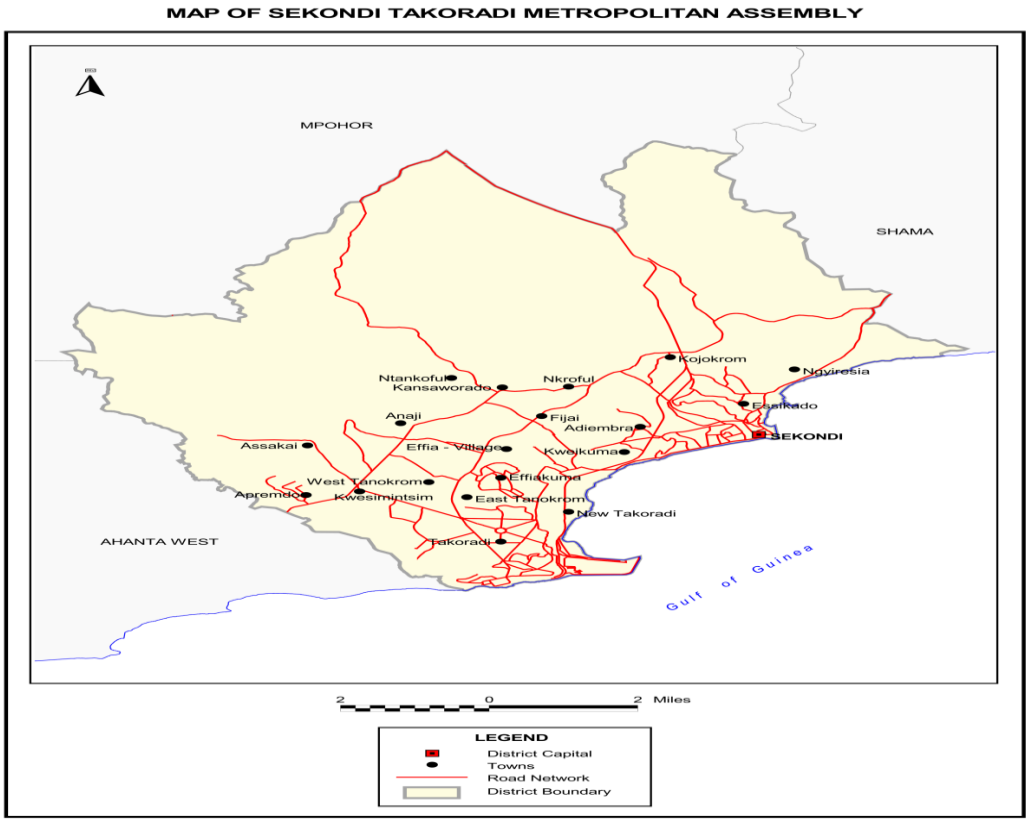


Figure 2: Map of Sekondi Takoradi Metropolitan Assembly

Source: Ghana Statistical Service, 2014

3.3.1 Description of the study site

Effia-Kwesimintsim Municipal Assembly is one of the four sub-metros in STMA, located in the Southern part of the Western Region and it's boarded to the West by Ahanta West Municipality, to the South-East by Sekondi – Takoradi Metropolitan, and North by Mpohor District. The Effia Kwesimintsim Municipal is one of the two hundred and sixty Metropolitan, Municipal, and District Assemblies (MMDAs) in Ghana and forms part of the 14 MMDAs. The Municipal Assembly has Thirteen (13) Electoral Areas and two Political Constituencies, namely Effia and Kwesimintsim in the Western Region. The Effia Kwesimintsim Municipal Assembly was carved out of the Takoradi Metropolitan Assembly as one of the 38 newly created and upgraded District Assemblies in 2018. It was created using Legislative Instrument (L.I) 2349, the Effia Kwesimintsim Municipal Assembly has its capital as Kwesimintsim.

According to the 2010 population census, the Effia-Kwesimintsim Municipal Assembly has a total population of 232,617 and has a land size of 109.94sqKm. This is made up of 110,317 Males and 122,363 Females. Most people in the communities mostly reside there and work outside the Municipality mainly in Sekondi-Takoradi Commercial Centers, making them commuter settlers.

3.3.2 Education

The Municipality has two public tertiary institutions and one private tertiary institution, two public senior high schools, three private senior high schools, one hundred and forty-four public and primary and junior high schools, and eighty-three private primary and junior high schools. It is estimated that 50.9 percent of persons aged 12 years and older have basic education.

3.3.3. Health

There are one public hospital and three private hospitals within the municipality. There are nine private clinics, one health center, nine CHPS, and four private maternity homes, and several pharmacies and over the counter chemical shops serving the health needs of the people in the municipality.

3.3.4 Agriculture

There are several farmlands in the Municipality mainly at Whindo, Mampon, Assakae, Adientem and Mpatado, Akromakrom, and Ahanta-Abasa which serve as a source of food crops for the people of Sekondi-Takoradi Metropolitan Assembly.

3.4 Variables of the study

3.4.1 Dependent variable

The main dependent variable is self-medication.

3.4.2 Independent variables

The key independent variables that were studied to achieve the objectives of the study are:

Channels of medicinal advertisement, availability of health facilities, accessibility of health facilities, educational level, employment status, accessibility to health professionals, common medicines purchased based on advertisements, exposure time, and frequency of exposure to a medicinal advertisement, nature of the illness, and accessibility of medicines without prescriptions. Other variables include age, religion, sex, marital status, place of residence, national health insurance status, and the number of children.

3.5 Study Population

The total number of adults in the Effia-Kwesimintsim is estimated to be 299,280. The study was conducted among adults buying medication from pharmacies and over the counter chemical shops in the two electoral areas (Kwesimintsim and Anaji) purposively selected for this study in the Municipality. These facilities include Jopizo pharmacy, Tonylins pharmacy, Joe-Dee pharmacy, Eddyamps pharmacy, O'nart pharmacy, Good brand pharmacy, Kinquash pharmacy, Dalvu pharmacy, Wilmort pharmacy, Grace will pharmacy, Narco Pharmacy, and Roquaw Pharmacy. The chemical shops include Sir Charles chemical shop, Ababio chemical shop, St. Louis chemical shop, Okai Asare chemical shop, Mary Hayfron over the counter chemical shop, and Aiden chemical shop.

3.5.1 Inclusion criteria

- Individuals 18 years and above purchasing medicine at the pharmacy or chemical shop.
- Adults who visit the facilities within the data collection period

3.5.2 Exclusion criteria

- Individuals below 18 years.
- Individuals who refuse to be part of the study.
- Individuals who visit the facility more than once during the study period.

3.6 Sampling

3.6.1 Sampling Size Determination

The sample size for the study was determined using the Cochran's formula (Cochran, 1977)

$$\mathbf{n = \frac{z^2pq}{e^2}},$$ where:

n = Sample size

Z= Z value for 95% confidence interval =1.96

P= estimated proportion =70%=0.70(Prevalence of self -medication in Ghana (Donkor et al., 2012)

Q= 1-P =1-0.70=0.30

D= desired level of precision = 5% =0.05

N= $(1.96^2 \times 0.70 \times 0.30)/ 0.05^2$

N= 322+ 10% of 322, N= 332+32=364

10% of the calculated sample was added to the sample size to cater for refusals and non-respondents. Therefore, the total sample size would be 400. The data was collected in two weeks and an estimate of 40 participants was recruited per day for the study. A total of 400 participants were recruited for the study. Data were collected within one month.

3.6.2 Sampling Method

A multi-stage cluster sampling method was used for this study. There are twelve electoral areas in the Effia-Kwesimintsim Municipal assembly and these include Effia, Effiakuma East and West, Effiakuma Zongo, East Tanokrom, Anaji East and West, Kwesimintsim, Sabo Zongo, Sofo Zongo, Asakae, and Apremdo. Two electoral areas namely Anaji and Kwesimintsim were purposively selected for the study based on the number of pharmacies and chemical shops in these two electoral areas. Participants for the study were selected from all twelve pharmacies and six chemical shops in the two electoral areas purposively selected for the study. A simple random sampling technique was used to select adults eighteen years and above from the facilities used in this study to avoid bias. The simple random sampling was utilized for selecting participants because it gave every adult an equal opportunity of being selected for the study. The selection of the number of adults from each facility was based on the average number of people who purchased medications from these facilities. Adults who consented to take part in the study were asked to pick ballot papers that had true or false responses written on them. The number of ballot papers used was a total of forty which was the average number who purchased medication per facility. Participants who picked true but later refused to be part of the study to take part were replaced by those who picked false the first time but were still not done with purchasing their medicine at the facility. Respondents who were recruited on the previous day of the study were not included in the subsequent recruitments.

3.7 Data Collection Methods and Tools

Data collection was done using a structured questionnaire from 400 participants from twelve pharmacies and six chemical shops in Anaji and Kwesimintsim electoral areas. The

questionnaires were designed in English but the questions were translated in Fante to some of the participants with little education for them to better understand the questions. The questionnaire was constructed using 26 close-ended questions. The questionnaire contained questions that reflected the variables of the study. The questions reflected on age, marital status, educational status, employment status, place of residence, number of children, information of self-medication in the past one month, factors that contribute to self-medication, type of medicines used, medical conditions that cause people to self-medicate, medicinal advertisement channels. The tool was pre-tested among 20 adults in Apremodo Pharmacy in Apremedo which is in another electoral area and some corrections were made to questions 10, 12, 18, and 24. Questionnaires were administered by the principal investigator and two research assistants. In each facility, the study was first explained to the participants, and consent from each participant was obtained before questionnaires were administered. About 20 questionnaires were administered in each facility per day spending at least ten days in each electoral area. Responses to the questionnaire were immediately keyed on the computer to ensure the information gathered is safe and to prevent the loss of any information on the questionnaire.

3.8 Data Collection Procedure

The data collection team comprised of three members, the Principal investigator (PI) and two research assistants. A training session was organized by the PI for the two research assistants in a day. The research assistants were trained on how to explain the questions on the questionnaire and collect the data, issues on confidentiality and privacy, and the need to seek consent before administering questionnaires. The two research assistants were MCA (medical counter assistants)

3.9 Quality Control

The questionnaires were characterized by identification numbers for them to be identified and corrected. The filled questionnaires were daily cross-checked by the principal investigator after data collection to determine the data's accuracy. It was ensured that only data from completed questionnaires were used for the analysis. Data from the completed questionnaires were entered into Microsoft Excel 2016 by two different assistants to avoid any data entry errors.

3.10 Data Processing and Analysis/ Statistical Methods

Data were processed using Microsoft excel 2016 before it was exported to STATA version 14 for analysis. To ensure accuracy and completeness, data was cleaned by running frequencies of all variables to check for incorrect coding using Stata 14. After double-checking with raw data, all necessary corrections were made before analysis. The number of adults that practiced self-medication was reported as a proportion with frequency. Descriptive analysis was performed on the background characteristics of respondents and the self-medication practices of the respondents. Pearson`s Chi-square/Fisher`s exact was employed to determine statistical significance between the independent and dependent variables. Multivariate logistic regression analysis was used to determine the relationship between medicinal advertisement channels and self-medication.

STATA software version 14 was used to perform all analyses. Statistical significance was set at $p<0.05$ for all analyses.

3.11 Ethical Issues

Ethical approval was obtained from the Ghana Health Service Ethical Review Committee (Approval Number: GHS-ERC 020/09/20) through the School of Public Health – University of

Ghana. Appendix 4 is a copy of the ethical approval letter. Permission was sort from the pharmacy council and from the owners and managers of the pharmacies and chemical shops the data was collected from. Participants' decision to take part in the study was voluntary and participants were informed that they could withdraw from the study at any point in time of the study. They were also informed that refusal to take part in the study would not warrant a reason for the quality of pharmaceutical services being provided will not be compromised. Participants were assured that their identities would not be disclosed since the questionnaires were labeled in codes and not in the names of participants. Informed consent was sought from participants before the questionnaires were administered and the participants were made aware that the findings from the study are solely for academic purposes and will not be disclosed to a third party. The filled questionnaires were solely possessed by the principal investigator such that it was inaccessible by a third party. There is no conflict of interest in the conduct of the study by the PI. This study was solely financed by the PI. The participants were rewarded with 30ml hand sanitizers. The PI has no conflict of interest regarding the conduct of this study.

3.12 Pre-Test of Research Tool or Pilot Study

The questionnaire was given to the Supervisor and some pharmacist colleagues to read through to ensure the accuracy of the tool being used. The questionnaire was modified accordingly based on the inputs made. Pretesting of the questionnaire was done a week before the actual date of the collection of data in a different electoral area (Apremedo) based on the inclusion criteria for this study. The errors identified such as lack of clarity to some questions was corrected before the

actual data was collected. Responses from the pre-test were consistent with the results at the end of the study. The objectives of the study were efficiently measured by the questionnaire.

Appendix 2 is a copy of the questionnaire.

3.13 Sources of Data

Data used for this study was obtained from both primary and secondary sources. The primary source of data was gathered at the pharmacy and chemical shop facilities used for this study and the source of secondary data was from an extensive search of existing literature.

CHAPTER FOUR

4.0 RESULTS

4.1 Introduction

This chapter provides information on the findings of the study based on the main objective and the specific objectives. Data were collected from four hundred participants from two electoral areas in the Effia-Kwesimintsim Municipal Assembly, Takoradi. The data obtained are presented below in tables.

4.2 Background Characteristics of study participants

A total of 400 participants were recruited for the study. About 57.5% (n=230) of the participants were females and the respondents and (35.8%, n=143) were aged between 18-28 years. The mean age of the participants was 36.9 (SD±14.8) with a minimum age of 18years and maximum age of 77years. Almost half of the participants (49.5%, n=198) were married and the majority (87%, n=348) of the participants were Christians and 38% (n=152) had tertiary education. An estimated 58% (n=232) of the participants were employed. About 77.5%(n=310) were NHIS insured clients. (Table 4.1)

Table 1: Demographic Characteristics of Study Participants

Variable	**Frequency (n = 400)**	**Percentage, %**
Sex		

Male	170	42.5
Female	230	57.5
Age (years)		
Variable	**Frequency (n = 400)**	**Percentage, %**
18 – 28	143	35.8
29 – 38	111	27.8
39 – 48	58	14.5
49 – 58	48	12.0
≥ 59	40	10.0
Mean age (SD)	36.9 (±14.8)	
Relationship Status		
Single	182	45.5
Married	198	49.5
Divorced	8	2.0
Widow	12	3.0
Religion		
Christian	348	87.0
Muslim	42	10.5
Traditionalist	2	0.5
Other	8	2.0
Level of Education		
No Formal Education	18	4.5
Primary School	24	6.0
Junior High School	80	20.0
Secondary School	126	31.5
Tertiary	152	38.0
Employment Status		
Student	70	17.5
Employed	232	58.0
Unemployed	68	17.0

Retired	30	7.5
Place of Residence		
Own apartment	116	29.0
Variable	**Frequency (n = 400)**	**Percentage, %**
Rented apartment	192	48.0
Living with parents	92	23.0
Number of Children		
0	169	42.3
1	46	11.5
2	77	19.3
≥ 3	108	27.0
NHIS Status		
Insured	310	77.5
Not Insured	90	22.5

4.3 Self-Medication Practices among Study Participants

Findings from the study indicated that (62.3%, n=249) practiced self-medication in the past one month. Analgesics were the medicine purchased by (58.6%, n=146) of the participants for self-medication, and body pain was the condition which warranted the need for self-medication by (33.6%, n=87) of the study participants. Approximately 72.2% (n=187) of the study participants obtained their medicine for self-medication from pharmacies and chemical shops. About 41.75% (n=167) of the participants self-medicated to obtain quick relief from their symptoms. The source of information for practicing self-medication among study participants was advice from relatives and friends which constituted 47.9% (n=124). Most (82.6%, n=214) of the study participants perceived their sickness to be minor. Thus the prevalence of self-medication among adults 18years and above in the Effia-Kwesimintsim Municipal Assembly was 62.3% (Table 4.2).

Table 2: Self-Medication Practices among Participants

Variable	Frequency	Percentage, %
Taking medication without a prescription for relief of your symptoms in the past month		
Yes	249	62.3
No	151	37.8
Not indicated		
Medicine used for self-medication (n = 249)		
Analgesics (painkillers)		
Yes	146	58.6
No	103	41.4
Anti-helminthic		
Yes	36	14.5
No	213	85.5
Hematinic (blood tonics)		
Yes	35	14.1
No	214	85.9
Herbal medicine		
Yes	31	12.4
No	218	87.6
Cold medications		
Yes	48	19.3
No	201	80.7
Others		
Yes	125	50.2
No	124	49.8
Condition(s) treated in past month without consulting a doctor (n = 259)		
Fever		

Yes	26	10.3
No	217	83.8
Not indicated	16	6.2
Cough		
Yes	30	11.6
No	213	82.2
Not indicated	16	6.2
Abdominal discomfort		
Yes	6	2.3
No	237	91.5
Not indicated	16	6.2
Malaria		
Yes	46	17.8
No	197	76.1
Not indicated	16	6.2
Headache		
Yes	95	36.7
No	148	57.1
Not indicated	16	6.2
Nausea and Vomiting		
Yes	20	7.7
No	223	86.1
Not indicated	16	6.2
Body pains		
Yes	87	33.6
No	156	60.2
Not indicated	16	6.2
Respiratory tract infection		
Yes	2	0.8
No	241	93.1

Not indicated	16	6.2
Sexually transmitted infection		
Yes	8	3.1
No	235	90.7
Not indicated	16	6.2
Indigestion		
Yes	6	2.3
No	237	91.5
Not indicated	16	6.2
Insomnia		
Yes	4	1.5
No	239	92.3
Not indicated	16	6.2
Allergies		
Yes	21	8.1
No	222	85.7
Not indicated	16	6.2
Others		
Yes	23	8.9
No	220	84.9
Not indicated	16	6.2
How did you get the medicine for your symptoms? (n = 259)		
Bought medicine from the pharmacy or chemical shop		
Yes	187	72.2
No	58	22.4
Not indicated	14	5.4
Past prescription		
Yes	26	10.0
No	219	84.6

Not indicated	14	5.4
Variable	**Frequency (n = 400)**	**Percentage, %**
Took some leftover drugs from a previous visit to the hospital		
Yes	26	10.0
No	219	84.6
Not indicated	14	5.4
Took some medicine from a relative or friend		
Yes	12	4.6
No	233	90.0
Not indicated	14	5.4
Other		
Yes	2	0.8
No	243	93.8
Not indicated	14	5.4
Reasons for self – medication		
Quick Relief		
Yes	167	41.75
No	233	58.25
Previous experience with medicine		
Yes	76	19
No	324	81
Avoiding excessive crowds at the hospital		
Yes	13	3.25
No	387	96.75
Doctor/clinic far from home		
Yes	5	1.25
No	395	98.75
Lack of time to meet a doctor		
Yes	35	8.75

No	365	91.25
Variable	**Frequency (n=400)**	**Percentage, %**
High charges doctor's consultation fees		
Yes	9	2.25
No	391	97.75
Not indicated	14	5.4
Long waiting time at the hospital		
Yes	26	6.5
No	374	93.5
Bad Experience with a doctor		
Yes	6	1.5
No	394	98.5
Source of information on the medicine used for self-medication (n = 259)		
Advice from friends/relatives/parents		
Yes	124	47.9
No	117	45.2
Not indicated	18	6.9
Medicinal advertisements		
Yes	53	20.5
No	188	72.6
Not indicated	18	6.9
Browsing the internet		
Yes	15	5.8
No	226	87.3
Not indicated	18	6.9
Others		
Yes	54	20.8
No	187	72.2
Not indicated	18	6.9
The number of times medicine is taken without		

a physician's prescription in the last month? (n = 259)		
Variable	**Frequency (n = 400**	**Percentage, %**
Once	110	42.5
Twice	82	31.7
Thrice	16	6.2
>Three times	33	12.7
Not indicated	18	6.9
Nature of your sickness (n = 259)		
Sickness is not serious (minor)	214	82.6
Sickness is serious (severe)	29	11.2
Not indicated	16	6.2

4.4 Prevalence of Self-medication based on Medicinal Advertisements

40 %(n=160) of the participants acknowledged the purchase of medicines based on an advertisement**.** The content of the medicinal advertisement portraying symptoms a participant may be experiencing, curiosity about the medicinal product advertised, the benefit of the medicinal product highlighted, the confidence an advertisement creates in the use of a medicinal product, interesting nature of theme or story of medicinal advertisement were reasons for in the purchase based on a medicinal advertisement. About 51.3 %(n=82) of the participants identified the reason, experiencing the symptoms mentioned in the advertisement as the main reason for the purchase of a medicinal product based on the advertisement.

Table 3: Prevalence of Self-Medication Based On Medicinal Advertisements

Variable	Frequency (n = 400)	Percentage, %
Purchase and use of a medicinal product based on a pharmaceutical advertisement in the past month		
Yes	160	40.0
No	240	60.0
Nature of medicinal advertisement, aiding in the purchase from medicinal advertisement (n = 160)		
Symptoms mentioned in the advertisement were the same as what I was experiencing	82	51.3
Curiosity about the medicinal product in the advertisement	25	15.6
The benefit of the medicinal product highlighted	37	23.1
The confidence creates in the use of the medicinal product	6	3.8
The theme or story of the medicinal advertisement was interesting	3	1.9
Other	2	1.3
Not indicated	5	3.1

Not indicated = missing values

4.5 Pharmaceutical Advertisement Channels Exposure and Channels Mostly Accessed

About 88.3% (n=353) of the study participants had been exposed to a medicinal advertisement in the past one month. The participants that had been exposed to medicinal advertisement identified at least one channel or medium of medicinal advertisement they were exposed to in the past one month. Some of the channels or medium they identified with include radio (50.7%, n=179), television (73.9%, n=261), billboard (7.9%, n=28), in a car (9.6%, n=34), social media platforms

(10.2%, n=36) and in print media (3.9%, n=14) (Table 4.3). From the results, television (73.9%, n=261) was the medium mostly accessed by the participants.

Approximately 60% (n=211) revealed television was one the medium that's got their attention, 59.2 %(=209) were exposed to medicinal advertisements daily with about 62.6% (n=221) of the participants mostly being exposed in the evenings (Table 4.3).

Table 4: Pharmaceutical Advertisement Channels Exposure and Channels Mostly Accessed

Variable	**Frequency (n = 400)**	**Percentage, %**
Exposure to a pharmaceutical advertisement in the past one month		
Yes	353	88.3
No	47	11.8
Channel/medium medicinal advertisement was made on (n = 353)		
Radio		
Yes	179	50.7
No	169	47.9
Not indicated	5	1.4
Television		
Yes	261	73.9
No	87	24.6
Not indicated	5	1.4
Billboard		
Yes	28	7.9
No	320	90.7
Not indicated	5	1.4

In a car		
Yes	34	9.6
No	314	89.0
Not indicated	5	1.4
On social media platforms		
Yes	36	10.2
No	312	88.4
Not indicated	5	1.4
In print		
Yes	14	3.9
No	334	94.6
Not indicated	5	1.4
Channel getting attention for use		
Radio		
Yes	115	32.6
No	227	64.3
Not indicated	11	3.1
Television		
Yes	211	60.0
No	131	37.1
Not indicated	11	3.1
Billboard		
Yes	10	2.8
No	332	94.1
Not indicated	11	3.1
In a car		
Yes	12	3.4
No	330	93.5
Not indicated	11	3.1
On social media platforms		

Yes	20	5.7
No	322	91.2
Not indicated	11	3.1
In print		
Yes	2	0.6
No	340	96.3
Not indicated	11	3.1
Times of exposure to a medicinal advertisement (n = 353)		
Morning		
Yes	132	37.4
No	216	61.2
Not indicated	5	1.4
Afternoon		
Yes	137	38.8
No	211	59.8
Not indicated	5	1.4
Evening		
Yes	221	62.6
No	127	36.0
Not indicated	5	1.4
What is the frequency of exposure to these pharmaceutical advertisements? (n = 353)		
Never	4	1.1
Daily	209	59.2
1 – 3 times per week	99	28.0
Once in two weeks	36	10.2
Not indicated	5	1.4

Not indicated = missing values

4.6 Class of Medicine Mostly Purchased

From the study, 35.6 %(n=62) of the study participants indicate that analgesics (painkillers) are the type of medicines mostly purchased based on medicinal advertisements. The second type of medicine mostly purchased was herbal medicine which had a frequency of 59 representing 33.9% of the study participants. 51.7% (n=90) did not seek any further information when purchasing a medicine hence the medicinal advertisements being their only source of the information for the medicine mostly purchased.

Table 5: Class of Medication Mostly Purchased

Medication purchased based on medicinal advertisements (n = 174)		
Analgesics (painkillers)		
Yes	62	35.6
No	91	52.3
Not indicated	21	12.1
Anti-helminthic(dewormers)		
Yes	16	9.2
No	137	78.7
Not indicated	21	12.1
Hematinic (blood tonics)		
Yes	16	9.2
No	137	78.7
Not indicated	21	12.1
Herbal medicine		
Yes	59	33.9
No	94	54.02

Medication purchased based on medicinal advertisements (n = 174)		
Not indicated	21	12.1
Cold medications		
Yes	18	10.3
No	135	77.6
Not indicated	21	12.1
Others		
Yes	8	4.6
No	145	83.3
Not indicated	21	12.1
Do you seek additional information about the medicine advertised before buying?		
Yes	80	47.1
No	90	51.7
Not indicated	4	2.3
If yes, from whom? (n = 80)		
Physician		
Yes	8	10.0
No	72	90.0
Pharmacy		
Yes	56	70.0
No	24	30.0
Friends/Relatives/Parents		
Yes	16	20.0
No	64	80.0
Others		
Yes	2	2.5
No	78	97.5

4.7 Logistics Regression Analysis of Factors influencing the purchase of medicines based on medicinal advertisements.

Participants between the ages of 29-38 years were more (AOR= 1.23; 95% CI=0.37-1.97) likely to purchase medicines based on medicinal advertisements compared with those between the ages of 49-58 and ≥ 59 years. Adults living in own apartment is more likely to purchase medicine based on medicinal advertisements than adults living with parents. The odds ratio of purchase of medicine based on medicinal advertisements among students was about 3.43 higher than among the employed, unemployed, and retired. Being a student is significantly associated with the purchase of medicines based on medicinal advertisements.

Table 6: Logistics Regression Analysis of Factors influencing the purchase of medicines based on medicinal advertisements

Variable	AOR	95% confidence interval	P-value
Age (years)			
18 – 28 *(ref)*	1.00		
29 – 38	1.23	0.37-1.97	0.71
39 – 48	0.85	0.25-2.56	0.73
49 – 58	0.95	0.46-3.25	0.75
≥ 59	0.92	0.40-2.03	0.68
Sex			
Male	1.00		

(ref)			
Female	0.93	0.61-1.43	0.72
Relationship Status			
Widow *(ref)*	1.00		
Married	1.14	0.35-3.74	0.821
Divorced	1.32	0.45-4.56	0.895
Single	1.15	0.35-3.81	0.945
Level of Education			
No Formal Education *(ref)*	1.00		
Primary School	1.22	0.34-1.51	0.87
Junior High School	1.04	0.38-2.801	0.52
Secondary School	0.98	0.86-3.52	0.44
Tertiary	1.05	0.48-2.90	0.32
Employment Status			

Retired *(ref)*	1.00	0.134-0.874	
Employed	0.58	0.249-1.368	0.249
Unemployed	0.57	0.228-1.512	0.270
Student	3.43	0.134-0.874	0.025
Place of Residence			
Living with parents *(ref)*	1.00		
Rented apartment	0.92	0.62-1.35	0.633
Own apartment	1.33	0.65-1.34	0.68
NHIS Status			
Insured *(ref)*	1.00		
Not Insured	1.14	0.71-1.83	0.54
Perceive sickness as			
Major	1.00		

(ref)			
minor	0.93	0.63-1.36	0.71

4.8 Logistic Regression Analysis of Factors Influencing Purchase of Medicines Based On Medicinal Advertisements

Multiple logistics regression model revealed that, employment status (AOR=1.34 95% CI 1.03-1.74, $p<0.05$) was significantly associated with the purchase of medicine from advertisements after adjusting all the independent variables were significantly associated initially. Hence the purchase of medicinal products based on advertisements in EKMA is influenced by the employment status of an individual. The other factors had no significant association with the purchase of medicines based on advertisements.

Table 8: Logistic Regression Analysis of Factors Influencing the Purchase Of Medicinal Products Based On Advertisements

Variable	AOR	95% confidence interval	p-value
Age	1.01	0.98-1.02	0.093
Sex	1.06	0.74-1.71	0.647
Employment status	1.34	1.03-1.74	0.028
Marital status	1.16	0.85-1.57	0.335
Education	0.90	0.75-1.09	0.313
Residence	0.79	0.59-1.04	0.102
Perceive illness as minor	1.02	0.83-2.14	0.311
NHIS status	0.87	0.54-1.41	0.586

4.9 Frequencies and chi-square test of factors influencing Self-medication

Findings from this study revealed that 86.2% of the respondents self-medicated for the results of the quick relief from their symptoms. There was a significant relationship between self-medication and quick relief (p=0.000). Pharmaceutical advertisements and previous experience with medicine also revealed a significant relationship with self-medication (p=0.003 and p=0.005) respectively. Bad experience with a doctor, lack of time to meet doctor, high consultation fees did not reveal any significant relationship with self-medication. (p=0.822, p= 0.124, and p=0.675) respectively. (table 6). Multivariate logistic regression revealed a significant association of quick relief and pharmaceutical advertisements with self-medication. The likelihood of a person not practicing self-medication due to quick relief and pharmaceutical advertisements is less (AOR= 0.13, CI=0.07-0.21, compared with those who practice self-medication due to quick relief and pharmaceutical advertisements. (AOR= 0.13, CI= 0.07– 0.21, AOR=0.36 CI=0.18 – 0.74) respectively (Table 9)

Table 9: Frequencies and Chi-Square of Factors Influencing Self-Medication

Variables	**Self – Medication**		Total	**Chi-square/ (p-value)**
	No (n %)	**Yes (n %)**		
Quick-relief				70.14 (0.000)
Yes	23(14.0)	144 (86.2)	167 (100.0)	
No	128(54.9)	105(45.0)	233(100.0)	
Previous experience with medicine				
Yes	18(23.6)	58 (76.3)	76 (100.0)	7.89(0.005)
No	133 (41.0)	191 (58.9)	324(100.0)	
Avoiding excessive crowd at the hospital				0.6788 (0.410)
Yes	3 (23.0)	10(76.9)	13 (100.00)	
No	148(38.2)	239(61.7)	387(100.0)	
Doctor/clinic far from home				1.2311(0.267)
Yes	1(20)	4(80)	5(100.00)	
No	150(37.9)	245 (62.1)	395(100.00)	
Lack of time to meet a doctor				
Yes	9(25.7)	26(74.2)	35(100)	2.36(0.124)
No	142(38.9)	223(61.1)	365(100)	
High consultation fees				0.17(0.675)
Yes	4(44.4)	5(55.6)	9(100.00)	
No	147(37.5)	244(62.5)	391(100.00)	
Bad experience with a doctor				0.0506 (0.822)

Yes	2	4	6	
No	149	245	394	
Pharmaceutical advertisement				8.7926 (0.003)
Yes	124	229	353	
No	27	20	47	

Table 10: Multivariate Logistic Regression Analysis of factors influencing Self-medication

Variables	**Unadjusted OR (95%CI)**	**P-value**	**Adjusted OR (95% CI)**	**P-value**
Quick-relief				
No	0.13 (0.07 – 0.21)	0.000	0.13 (0.07– 0.21)	0.000
Yes*(ref)*	1.00		1.00	
Previous experience with medicine				
No	0.44(0.25-0.79)	0.006	0.54(0.28-1.03)	0.063
Yes (*ref)*	1.00		1.00	
Long waiting time				
N*o*	0.37(0.13-1.00)	0.052	0.41(0.14-1.21)	0.109
Yes (*ref)*-	1.00		1.00	
Medicinal Advertisements				
No	0.40(0.21-0.74)	0.004	0.36(0.18-0.74)	0.005
Yes *(ref)*-	1.00		1.00	

5.0 The Relationship between Medicinal Advertisement Channels and Self-Medication

Over 62.3% (n=249) had taken medication without a prescription for relief of their symptoms in the past one month while 37.8% (n=151) had not taken any medication without a prescription for relief of their symptoms in the past one month. More than half (64.9%, n=229) of those who had taken medication without a prescription for relief of their symptoms in the past one month were exposed to a pharmaceutical advertisement in the past month while 35.1% (n=124) were not. Exposure to a pharmaceutical advertisement in the past month was found to be associated with self-medication (p=0.003). This indicates a statistically significant association between exposure to medicinal advertisements and self-medication. About 61.5%(n=110) who had practiced self-medication in the past one month were exposed to radio advertisements while 38.5% who had not practiced self-medication were not exposed to radio advertisements. Television (p=0.001), billboard (p=0.001), in a car(p=0.002) and on social media platforms are significantly associated with self-medication based on medicinal advertisements. (Table 11)

Table 11: The Relationship between Medicinal Advertisement Channels and Self-Medication

Variables	**Self – Medication**		Total	**Chi-square/Fisher's exact[a] (p-value)**
	No (n%)	**Yes (n%)**		
Exposure to Pharmaceutical Advertisement in the past one month				8.8 (0.003)
Yes	124 (35.1)	229 (64.9)	353 (100.0)	
No	27 (57.4)	20 (42.6)	47 (100.0)	
Channels of Exposure				
Radio				2.3 (0.128)
Yes	69 (38.5)	110 (61.5)	179 (100.0)	
No	52 (30.8)	117 (69.2)	169 (100.0)	

Television				11.9 (0.001)
Yes	104 (39.8)	157(60.2)	261 (100.0)	
No	17(19.5)	70 (80.5)	87 (100.0)	
Billboard				11.7 (0.001)
Yes	18 (64.3)	10 (35.7)	28 (100.0)	
No	103 (32.2)	217(67.8)	320 (100.0)	
In a car				9.6 (0.002)
Yes	20 (58.8)	14 (41.2)	34 (100.0)	
No	101 (32.2)	213(67.8)	314 (100.0)	
On social media platforms				18.0 (0.000)
Yes	24 (66.7)	12 (33.3)	36 (100.0)	
No	97 (31.1)	215 (68.9)	312 (100.0)	
In print				0.778[a]
Yes	4 (28.6)	10 (71.4)	14 (100.0)	
No	117 (35.0)	217 (65.0)	334 (100.0)	

4.10 Multivariate Logistic Regression Analysis of the Relationship between Medicinal Advertisement Channels and Self-Medication

According to the multivariate logistic regression presented in Table 12, respondents who reported not being exposed to television, billboard, in a car and social media platforms had respectively (AOR=0.39; 95% CI=0.21-0.72), (AOR=0.42;95% CI=0.17-1.06), (AOR=0.37;95% CI=0.17-0.79), (AOR=0.24; 95% CI=0.11-0.54) significantly lower odds of practicing self-medication compared with a respondent exposed to a medicinal advertisement on television, billboard, in a car and social media platform. This indicates the significant association of the channel of television, billboard, in a car, and social media platform to self-medication.

Table 12: Multivariate Logistic Regression Analysis of the Relationship between Medicinal Advertisement Channels and Self-Medication

Variables	**Unadjusted OR (95%CI)**	**P-value**	**Adjusted OR (95% CI)**	**P-value**
Channels of Exposure				
Television				
Yes*(ref)*_	1.00		1.00	
No	0.37 (0.20 – 0.66)	0.001	0.39 (0.21 – 0.72)	0.003
Billboard				
Yes*(ref)*_	1.00		1.00	
No	0.26 (0.12 – 0.59)	0.001	0.42 (0.17 – 1.06)	0.067
In a car				
Yes*(ref)*_	1.00		1.00	
No	0.33 (0.16 – 0.68)	0.003	0.37 (0.17 – 0.79)	0.010
On social media platforms				
Yes*(ref)*_	1.00		1.00	
No	0.23 (0.11 – 0.47)	0.000	0.24 (0.11 – 0.54)	0.000

CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction

The majority of the respondents were aged between 18-28 years constituting about 35.8% of the total number of respondents. The prevalence of self-medication among adults 18years and above in EKMA was estimated to be 62.3%, which is within the prevalence rates of 0.1% to 100% in developing countries according to a systematic review of the literature to assess self-medication practices. (Limaye, Limaye, Krause, & Fortwengel, 2017). The huge difference in the prevalence rates across the world could be as a result of the different definitions of self-medication adopted by investigators, the inclusion and exclusion criteria used, the recall period of self-medication by the respondents, and the different study designs employed. According to various literature, clinical conditions such as headaches, fever, chills, common colds, coughs, and skin conditions are usually managed by self-medication practices. The need for quick relief from their symptoms (64.1%) was the main reason for the practice of self-medication by respondents. However previous experience with medicine, long waiting time at the hospital and lack of time to visit the physician were other reasons responsible for the practice of self-

medication in this study. A study conducted by (Olivar & Rodilla, 2018) gave reasons of lack of time to visit physicians, quick relief from symptoms, familiarity with medications which are consistent with the findings of this study. The medicine mostly used for self-medication in this study was analgesics. (58.6%). A meta-analysis and systemic review of the epidemiology of self-medication conducted in Ethiopia also revealed analgesics (46.1%) as being one of the classes of medication mostly used in the practice of self-medication. In line with the use of analgesics is the common condition of body pains (33.6%), for which most of the respondents practiced self-medication. The majority (82.6%) of the respondents perceived their clinical condition to be mild thereby not realizing the need to consult a physician, also accounting for the practice of self-medication among the adults in EKMA. This is in line with several studies and another study conducted by (Shariff & Anas, 2018) which revealed individuals perceived they will be prescribed the same medicine being used for self-medication by the physician.

According to this study, the proportion of respondents who purchased and used medicines based on medicinal advertisements was 40%. In line with a study by (Yaw & Biduki, 2013) in Ejura-Sekyedumase Municipality, 97% of the respondents acknowledged their source of information for self-medication to be medicinal advertisements. The proportion of 40% is slightly lower and this could be because the majority of the respondents 47.9% had their source of information for self-medication to be advised from friends and family. In a study conducted in Egypt among university students, friends and family (62.2%) were most frequently reported to be the source of information for self-medication. also a study conducted in Iran among women, 69% revealed a friend or spouse encouraged the respondents to take medication and about 75% confessed they had recommended some medications to their friends and relatives. (Karimy et al., 2019).

However, no investigation has been done to identify where these family and friends receive their information from.

The proportion of adults who purchased based on medicinal advertisements can be accounted for based on exposure to medicinal advertisements. 88.3% of the respondents had been exposed to at least one channel of advertisement in the past one month, with 62.6% exposed daily to these advertisements via one of these channels and mostly being exposed in the evening. In line with the AIDA model, the main reason the respondent purchased a medicine based on an advertisement was "symptoms mentioned in the advertisement were the same as was I was experiencing" this creates an awareness stage that gets the attention of the consumer to the medicinal products. An awareness of the medicinal product creates an interest in acquiring the medicinal product since it addresses the individual's clinical condition. This also creates the desire to use the product to be relieved from symptoms as mentioned in the advertisement thereby leading the person into the action of actually purchasing the medicinal product for use. Also, the frequency of advertisements has a positive effect on the purchasing of the products since it produces a recall effect in a consumer. (Prabha et al., 2019)

According to the findings in this study, the channel of medicinal advertisements mostly accessed was television (n=261,73.9%). The other channels of medicinal advertisements were accessed in the following order radio (50.7%, n=179) social media platforms (10.2%, n=36), billboard (7.9%, n=28), in a car (9.6%, n=34),) and in print media (3.9%, n=14) (Table 4.3). Television was also the medium of advertisement that got the attention of about 60% of the respondents and is in line with the AIDA model as the pharmaceutical marketer first gets the attention of the consumer for the other stages of interest, desire, and action (purchase) of the model to take effect. This is also consistent with a study by(Bhangale, 2013) which identified television to be

the common source of awareness concerning OTC medicines. Television is one of the channels of communication that conveys an advertising message to a large group of prospective consumers. Television gets more attention because of its audio-visual means of carrying messages to potential consumers and this audio-visual effect appeals to the sense of sight and hearing, thereby advertising messages are made impressive and attractive to viewers

(Thomas, 2019). This finding is however in contrast with some studies which identified the use of radio as the most accessible channel of medicinal advertisement due to his findings that radio was more portable than television and due to the occupation of most of the respondents (farmers) were able to carry it around thus radio advertisement being easily accessible than other mediums of advertisements. The most common medicine purchased from medicinal advertisements was mainly analgesics, which accounted for 35.2% of the respondents, where the majority of the respondents acknowledged pharmacies and chemical shops as their source of analgesics. Analgesics include non-steroidal anti-inflammatory drugs (NSAIDs) and paracetamol (acetaminophen) and are the most commonly used OTC which are generally safe when used appropriately in terms of

dosage. Medical conditions for which analgesics are used include headaches, body pains, toothaches, dysmenorrhea, fever, and chills. However inappropriate use may result in health implications that include gastrointestinal problems, liver toxicity, and kidney failure. (Informa- et al., n.d.) Many users are however ignorant of these effects since they are hardly mentioned in advertisements as most researchers suggest that medicinal advertisements mostly describe the benefits of the medicinal product and do not highlight the possible risks and side effects.

This finding is slightly low compared to a study conducted in Ghana, among construction workers on the use of analgesics, the prevalence rate was 68%, with radio and television

advertisements (72.9%) being the major source of influence of the use of analgesics.(Badzi & Ackumey, 2017) The difference would be due to the difference in the target population. The second medicine mostly purchased by respondents was herbal medicines with 33.9% of the respondents purchasing them. The use of herbal medicine by individuals is gradually gaining a lot of popularity due to the use of marketing strategies such as advertisements on radio, television, and on the internet. (Aziato & Antwi, 2016) These channels could be employed for public education on the benefits and risks of these medicines and emphasizing the need to consulting a health practitioner before the use of these products. This is because they are OTC's and do not require a prescription in acquiring them. There is also a need for education especially by pharmacists when an individual purchase these medicines and strict regulation of the sale of these medicines is also required to ensure the appropriate use of these medicines. There is also the need to ensure the quality and safety of medicinal products.

From the results of the study, there was a significant association of exposure to medicinal advertisements and self-medication ($p=0.003$) and a strong association with television($p=0.001$) billboards($p=0.001$), in a car($p=0.002$), and social media platforms($p=0.000$) as channels of medicinal advertisements. Exposure to medicinal advertisements via television, billboard, in a car, and social media platform turned out to be significant in practicing self-medication. According to existing literature, the negative impact of medicine advertising includes persuades and misinforms patients, over-emphasizes drug benefits and does not educate, encourages drug over-utilization, strains relationships with health care is not rigorously regulated(Prabha et al., 2019). Strategies should thus be in place by the regulatory body (FDA) to minimize the extent to which these advertisements influence inappropriate medicine use. The factor that strongly impacted the purchase of medicine from advertisement was employment. This could be due to

the presence of a source of income hence the ability to purchase these medicines and also make autonomous health decisions. Students were 3.43 times likely to practice self-medication based on medicinal advertisements and this would be due to the easy access to these channels of advertisements because of better education and lack of time.(Olivar & Rodilla, 2018). However, some other research revealed age to be a factor for one to purchase from advertisements where the age group between 35-44years was unlikely to purchase from advertisements due to lack of interest in the product advertised and 13-17 years due to lack of funds. The age group between 25-34 years was found out to purchase more from advertisements. (Mekawie & Hany, 2019)

5.2 Limitations of The Study

Information about self-medication was self-reported and thus there could be the possibility of recall bias. However, this was tried to be minimized by limiting the reporting on SM within one month before the study. There was also the possibility of social desirability bias where respondents may deny the practice of self-medication and this was tried to be minimized by ensuring anonymity. Secondly, the study excluded adults who did not come to the pharmacy to purchase medication during the time of the study due to the limited time for data collection and so may not be representative of the entire Effia-Kwesimintsim Municipal Assembly.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATION

6.1 Conclusion

The study confirmed an association between the channels of medicinal advertisement and self-medication indicating medicinal advertisement as an important predictor of self -medication among adults in EKMA. Self-medication is a public health problem that needs urgent attention with a prevalence rate of 62.3% in EKMA. Currently, exposure to medicinal advertisements on various channels of advertisements is on the rise and there was a significant association with self-medication based on the results of this study. Exposure to advertisements via channels of television, billboards, in-car advertising, and social media platforms was associated significantly with the practice of self-medication with the most common type of medicine mostly purchased based on advertisement being analgesics. The most common channel accessed was television and the factor that was associated with the purchase of medicines from advertisements was the employment status of an individual. Medicines obtained for self-medication were easily accessible at pharmacies and chemical shops. Community pharmacists also need to educate the

community on the appropriate and safe use of medication. Good reviews on medicinal advertisements such as it being informative, educative, and empowers the patients, promotes a patient relationship with a health professional and encourages adherence and compliance to medicines could be well-devised and deployed by the FDA to successfully engage the public to improve the use of medications.

6.2 RECOMMENDATIONS

In line with the findings of this research, the following recommendations are made.

There is a need for the strict regulation of sales of medicines in pharmacies and chemical shops by the Pharmacy council of Ghana to help limit the practice of self-medication and also create awareness of the need to consult a qualified health professional in acquiring a medicine. There is also the need for the Pharmacy Council to ensure that qualified personnel are employed at the pharmacies.

The study again recommends that pharmaceutical companies should be rigorously regulated so that their advertisements carry the right information to encourage the responsible use of medicine by the FDA. There is a need to limit the frequency of medicinal advertisements via various channels especially on television, billboard, in-car, and social media platforms since it has been associated with self-medication.

There must be periodic public education on the effects and consequences of self-medication and other non-prescribed medication as many do not seek further information on medicine when purchasing them. There should also be public sensitization on perceiving some illness as minor, thereby delaying the right medical care. The medium of advertisement that is significantly associated with self-medication should be employed in educating the public on health-related issues and encourage health promotion.

Future research could be utilized to identify the perception of health professionals on how self-medication associated with medicinal advertisements serve as facilitators or barriers in their quest to provide optimum healthcare to patients.

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Appendix 1: Informed Consent Form

STUDY TITLE: CHANNELS OF MEDICINAL ADVERTISEMENT AND Its ASSOCIATION WITH SELF-MEDICATION AMONG ADULTS IN EFFIA-KWESIMINTSIM MUNICIPALITY.

Ann Tetteh Ofosu, Department of Social and Behavioral Science, School of Public Health, College of Health Sciences, University of Ghana, P. O. Box LG 13, Legon

Contact: Mobile 0246323249; Email: tettehofosua@yahoo.com

General information about the study

This is a research study being undertaken as a requirement in the University of Ghana, School of Public Health, Legon to attain a master's degree in public health. This is useful in helping inform policy on medicinal advertisements on the various channels of advertisements. It will also help in regulatory measures for medicinal advertisements. Although the practice of self-medication is known among the adult populace, one cannot tell the prevalence of self-medication associated with the channels of medicinal advertisements. Thus for this reason I seek to undertake this study to estimate the prevalence of self-medication as a result of medicinal advertisement channels

among adults in EKMA, to determine the channel of medicinal advertisement frequently accessed, find out the class of medicine mostly purchased based on the medicinal advertisement, to identify factors associated with the purchase of medicines from medicinal advertisements and to determine the association between self-medication and medicinal advertisements. The duration of the study will be in a month. Findings from the study will therefore be important in facilitating the development of strategies that will be used in addressing the high incidence of self-medication by providing baseline information about the current incidence of self-medication associated with the channels of medicinal advertisement.

Procedures

Adults aged 18 years and above from Effia Kwesimnstim Municipal Assembly will be used in this study. Eligible participates who will agree to participate will be required to complete a structured questionnaire. Questions about their background, Factors influencing self-medication

and the drugs frequently used and for which conditions and the channels of medicinal advertisements mostly resorted to will be completed.

Funding

The study will be sponsored by the Principal Investigator

Possible Risks and Discomforts

There is no risk or harmful consequences to your person, image, or self-esteem or denial of medical treatment for participation in this research. However, the only discomfort is the little time you will spend with us. But it will be very quick so that we do not take much of your time.

Possible Benefits

There is no direct benefit to the participants of this study. This is useful in helping inform policy on medicinal advertisements on the various channels of advertisements. It will also help in regulatory measures for medicinal advertisements. Thus a benefit to society.

Your participation in this study is voluntary. During the filling of the questionnaire, you can choose to ignore any questions that you are uncomfortable with and also at liberty to withdraw from the study at any time. However, we will encourage you to participate and complete the questions since your opinions are very important to us.

Confidentiality

Though we would be glad if you take part in the study, neither you nor the study will be affected or suffer if you decide not to take part in the study. All the information will be kept confidential and the data will be stored in a locked cabinet. Access will be limited to only the researcher and research supervisor. Your name, identity is not needed for the study. However, the information you would be treated strictly confidential. We assure you that your name shall not appear or be mentioned in any report that might come out of this study.

Contact for Additional Information

If you have questions later, you may contact:

Ann Tetteh Ofosu

Department of Social and Behavioral Science

University of Ghana School of Public Health

College of Health Sciences

P. O. Box LG 13, Legon

Mobile 0246323249

Email:tettehofosua@yahoo.com

If you have any questions about your rights as a research participant, you can contact the Administrator Nana Abena Apatu for participants to make further clarification on ethical issues and their rights as participants if need be of the GHS Ethical Review Committee at the following address:

GHS-Ethical Review Committee

Research and Development Division

Ghana Health Service

P. O. Box MB 190, Accra

Office: 0302 681 109

Mobile: 0503539896,

EMAIL: ethics.reseach@ghsmail.org

Participant Voluntary Consent

I _____, declare that the above document describing the purpose, procedures as well as risks and benefits of the research titled "(CHANNELS OF MEDICINAL ADVERTISEMENT AND Its ASSOCIATION WITH SELF-MEDICATION AMONG ADULTS IN EFFIA-KWESIMINTSIM MUNICIPALITY.)" has been thoroughly explained to me in English language. I have been allowed to ask any questions about the research and answered to my satisfaction. I hereby voluntarily agree to participate as a subject in this study.

_____ _____/_____/_____

Signature of Participant ……. Thump print……...

Date……. Date……

INTERPRETERS' STATEMENT

I interpreted the purpose and contents of the Participants' Information Sheet to the forenamed participant to the best of my ability in the Fante language to his proper understanding.

All questions, appropriate clarifications sort by the participant, and answers were also duly interpreted to his/her satisfaction.

Name of Interpreter……

Signature of Interpreter……... OR Thumb Print …….....

Date……

Contact Details

Ann Tetteh Ofosu

Department of Social and Behavioral Science

University of Ghana School of Public Health

College of Health Sciences

P. O. Box LG 73, Legon

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Email:tettehofosua@yahoo.com

STATEMENT OF WITNESS

I was present when the purpose and contents of the Participant Information Sheet were read and explained satisfactorily to the participant in the language he/she understood (….name of language) I confirm that he/she was allowed to ask questions/seek clarifications and the same were duly answered to his/her satisfaction before voluntarily agreeing to be part of the research.

Name……

Signature…….... OR Thumb Print …….....

Date……

Appendix 2: Questionnaire for respondents

Dear Respondent, I am a student at the University of Ghana researching channels of medicinal advertisement and its effect on self-medication among adults in EKMA. I am humbly soliciting your support in this project and implore you to participate in it. Please, respond to the questions by giving honest and accurate answers as they will contribute to the success of this study by providing baseline information about the current prevalence of self-medication and the effect of medicinal advertisement on self-medication. This will be useful in planning a health and medicine education program in EKMA, I hereby assure you that all the information that will be provided to these questions will be treated confidentially, more so, your name is NOT required. Thank you.

Data collector (s)……. Form ID……

A. SOCIO-DEMOGRAPHIC CHARACTERISTICS
Please provide answers where needed and tick option(s) that apply

1. Age (in completed years) …….……

2. Gender

(0) Male

(1) Female

3. Marital status

(0) Single

(1) Married

(2) Divorced

(3) Widow

4. Religion

(0) Christian

(1) Muslim

(2) Traditionalist

(3) Other specify……...

5. Highest level of education

(0) Not been to school

(1) Primary

(2) JHS

(3) Secondary

(4) Tertiary

6. Occupational status

(0) Student

(1) Employed

(2) Unemployed

(3) Retired

7. Place of residence

(0) Own apartment

(1) Rented apartment

(2) Living with parents

8. Number of children

(0) None

(1) 1

(2) 2

(3) 3+

9. NHIS status

(0) Insured

(1) Not insured

B. PREVALENCE OF SELF-MEDICATION AMONG ADULTS AT EKMA

Self-medication is the use of medicinal products by the consumer which is not prescribed by the physician.

10A. Have you taken medication without a prescription for relief of your symptoms in the past month?

(0) Yes

(1) No

10B. If yes, which type of medicine did you use?

(0) Analgesics (painkillers)

(1) Anti-helminthic

(2) Hematinic (blood tonics)

(3) Herbal medicine

(4) Cold medications

(5) Others ……...

11. Indicate which condition(s) you have treated in past one month without consulting a doctor

(0) Fever

(1) Cough

(2) Abdominal discomfort

(3) Malaria

(4) Headache

(5) Nausea and Vomiting

(6) Body pains

(7) Respiratory tract infection

(8) Sexually transmitted infection

(9) Indigestion

(10) Insomnia

(11) Allergies

(12) Others …….

12. How did you get the medicine for your symptoms?

(0) Bought medicine from the pharmacy or chemical shop

(1) Past prescription

(2) Took some leftover drugs from the previous visit to the hospital

(3) Took some medicine from a relative or friend

(4) Other …….

13. What was your reason for self-medicating?

(0) Quick relief

(1) Previous experience with medicine

(2) Avoiding excessive crowds at the hospital

(3) Doctor/clinic far from home

(4) Lack of time to meet a doctor

(5) High charges to doctor's consultation fees

(6) Long waiting time at the hospital

(7) No trust in the doctor

(8) Bad experience with a doctor

14. What was the source of information on the medicine used for self-medication?

(0) Advice from friends/relatives/parents

(1) Medicinal advertisements

(2) Browsing the internet

(3) Others……

15. How many occasions have you taken medicine without a physician's prescription in the last one month?

(0) Once

(1) Twice

(2) Thrice

(3)>Three times

16. How will you describe your sickness?

(0) Sickness is not serious (minor) [ ]

(1) Sickness is serious (severe) [ ]

C.PHARMACEUTICAL ADVERTISEMENT CHANNELS EXPOSURE

17A. Have you been exposed to a pharmaceutical advertisement in the past one month?

(0) Yes [ ]

(1) No [ ]

17B. If yes, which of the following channels/medium was the advertisement made on?

(1) Radio [ ]

(2) Television [ ]

(3) Bill board [ ]

(4) In a car [ ]

(5) On social media platforms [ ]

(6) In print [ ]

18. Which of the following medium gets your attention?

(1) Radio [ ]

(2) Television [ ]

(3) Billboard [ ]

(4) In a car [ ]

(5) On social media platforms [ ]

(6) In print (newspaper or magazine) [ ]

19. Which times of the day are you exposed to the advertisement?

(0) Morning

(1) Afternoon

(2) Evening

20. What is the frequency of exposure to these pharmaceutical advertisements?

(0) Never

(1) Daily [ ]

(2) 1-3 times per week [ ]

(3) Once in two weeks [ ]

(3) Other…….

D. FACTORS DRIVING PURCHASE OF MEDICINE FROM ADVERTISEMENT

21A. Have you purchased and used any medicinal product based on a pharmaceutical advertisement you have come across in the past month?

(0) Yes

(1) No

21B. If yes, what about the medicinal advertisement, helped you in making your decision?

(0) Symptoms mentioned in the advertisement were the same as what I was experiencing

(1) Curiosity about the medicinal product in the advertisement

(2) The benefit of the medicinal product highlighted

(3) The confidence it creates in the use of the medicinal product

(4) The theme or story of the medicinal advertisement was interesting

Others …….

E. PERCEPTION (S) ON PHARMACEUTICAL ADVERTISEMENT

22. What is your perception of pharmaceutical advertisements?

(0) Informative [ ]

(1) Educative [ ]

(2) Misleading [ ]

(3) Entertaining [ ]

(4) Attractive [ ]

(5) Others ……

23. Do you buy medicine based entirely on a medicinal advertisement?

(0) Yes
(1) No
(2) Sometimes
(3) Most times

24A. Did you experience the benefits as communicated in the medicinal advertisement?

(0) Yes [ ]

(1) No [ ]

24B. If No, what did you do?

(0) Repeated the medicine

(1) Purchased a different medicine

(2) Visited the Hospital

Others……...

25. What type of medication do you buy based on medicinal advertisement?

(0) Analgesics (painkillers)

(1) Anti-helminthic(dewormers)

(2) Hematinic (blood tonics)

(3) Herbal medicine

(4) Cold medications

(5) Others …….

26A. Do you seek additional information about a medicine advertised before buying?

(0) Yes

(1) No

26B. If yes, from whom?

(0) Physician

(1) Pharmacy

(2) Friend/ relative/ parents

Others…….

Appendix 3: Ethical Approval Letter

GHANA HEALTH SERVICE ETHICS REVIEW COMMITTEE

In case of reply the number and date of this Letter should be quoted.

Research & Development Division
Ghana Health Service
P. O. Box MB 190
Accra
Digital Address: GA-050-3303
Tel: +233-302-681109
Fax + 233-302-685424
Email: ethics.research@ghsmail.org

MyRef. GHS/RDD/ERC/Admin/App/201436
Your Ref. No.

23rd October, 2020

Ann Tetteh Ofosu
School of Public Health
University of Ghana
Legon – Accra

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol.

GHS-ERC Number	**GHS-ERC 020/09/20**
Study Title	Channels of Medicinal Advertisement and Its Association with Self-Medication among Adults in Effia-Kwesimintsim Municipality
Approval Date	23rd October, 2020
Expiry Date	22nd October, 2021
GHS-ERC Decision	**Approved**

This approval requires the following from the Principal Investigator

- Submission of yearly progress report of the study to the Ethics Review Committee (ERC)
- Renewal of ethical approval if the study lasts for more than 12 months,
- Reporting of all serious adverse events related to this study to the ERC within three days verbally and seven days in writing.
- Submission of a final report after completion of the study
- Informing ERC if study cannot be implemented or is discontinued and reasons why
- Informing the ERC and your sponsor (where applicable) before any publication of the research findings.

You are kindly advised to adhere to the national guidelines or protocols on the prevention of COVID -19

Please note that any modification of the study without ERC approval of the amendment is invalid.

The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Kindly quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED.....
Dr. James Akazili
(Head, Ethics & Research Management Department)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra