



ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE

DEPARTMENT OF MARKETING MANAGMENT

**Prescription drug promotion and prescribing behavior of physicians' in case
of Addis Ababa green licensed private hospitals.**

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Declaration

I, Samrawit G/egziabher, hereby declare that the contents of the thesis report **“Prescription drug promotion and prescribing behavior of physicians in case of Addis Ababa green licensed private hospitals”** are my own work and all sources that I have used or quoted have been indicated and acknowledged by means of complete references.

This thesis report has not been submitted previously for any other degree at this university or any other university.

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ABSTRACT

Pharmaceutical enterprises are using different promotional techniques in order to get Physicians' attention. On the other hand, the healthcare regulatory authorities and other stakeholders in the healthcare industry are also working harder to balance the effect of pharmaceutical companies on physicians' prescription behavior. In this condition, to win the hard competition pharmaceutical companies are using innovative marketing strategies and promotional techniques. Currently, to have an effect on physicians' prescription decision pharmaceutical companies are using different promotional techniques. The purpose of this study is to assess the current prescription drug promotional techniques and assess its effect on prescribing behavior of physicians. Accordingly, the thesis assesses very important research questions on drug promotion in relation with prescribing behavior. Methodology used was all physicians practicing in green licensed private hospitals were considered as a study unit. A set of self-administered semi-structured questionnaires were distribute to those physicians. The findings revealed that the different promotional techniques that pharmaceutical companies are using have an effect on the physicians' prescription decision.

The level of effect depends on factors such as price and quality of the drug, specialty of the physician, and other factors related to the characteristics of physicians. The study also revealed that physicians have a positive perception about the information they have got from medical representatives. The study findings indicate that to be on the competitive edge, pharmaceutical companies need to understand the healthcare environment and the need of physicians. The study is Quantitative research using numerical analysis of data collected through questionnaire.

This study recommends for pharmaceutical companies, the best promotional item to influence physicians prescribing behavior is free medical sample, whereas the promotional aid that influences the most is sponsorship to attend CMEs.

Key terms: Medical representative, Physician, prescriber, prescription, prescription behavior, prescription drug, promotion, Green licensed hospital

LIST OF ABBREVIATIONS

ADR	Adverse Drug Reaction
CME	Continuing Medical Education
DACA	Drug Administration and Control Authority
ECG	Electro Cardio Graph
FMHACA	Food, Medicine and Healthcare Administration and Control Authority
GP	General Practitioner
KAM	Key Account Management
KOL	Key Opinion Leader
MD	Doctor of Medicine
MR	Medical Representative
NDP	National Drug Policy
NHP	National Health Policy
OAU	Organization of African Union
OTC	Over-the-Counter
PR	Public Relation
Rx	Prescription
SOP	Standard Operating Procedure
TT	Treatment
UNECA	United Nations Economic Commission for Africa
WHO	World Health Organization

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The pharmaceutical industry deals with the discovery, developing, producing and marketing pharmaceutical drugs for use as medication. Pharmaceutical companies may deal in generic or brand medications and medical devices. They are subject to a variety of laws and regulations that govern the patenting, testing, safety, efficacy and marketing of drugs.

Unlike other industries, the main objective of pharmaceutical company marketing is to increase the profitability of the organization by accommodating the needs and wants of consumers. In various commercial industries, other than pharmaceutical company, it is much easier for consumers to make the choice to which brand and item ought to be obtained consistent with their necessities and pre-requisitions. Whereas in the pharmaceutical marketing consumers and customers fall into two distinct lines(Biswas and Ferdousy, 2016;). Pharmaceutical marketing differs from other types of marketing because the consumers (patients) are not the target audience. It is the physicians who make the decisions on behalf of the patients. For this reason the marketing strategies are mainly designed for the physicians not for the patients.

To get a market share in this competitive and controlled industry, pharmaceutical companies are applying different marketing approach that is in-line with the respective countries code of ethics(Pitt and Nel, 1993, Vancelik et al., 2007). For example; in USA and New Zealand pharmaceutical companies can promote prescription drugs directly to consumers and healthcare professionals(Buckley, 2004). But in other countries promotion is allowed only to healthcare professionals with the exception of over-the-counter (OTC) drugs.

It is believed that the activity of pharmaceutical companies influence physicians' behavior. Pharmaceutical companies use different techniques to persuade physicians and make them favor their products. The influence can be expressed either by prescribing the drug or making an inclusion in hospital formularies or treatment guides. Companies are imposing an influence on the decision maker either directly or indirectly.

In the promotion of prescription drugs, medical representatives usually offer information about their brand and current modes of therapy, the appropriate drug usage, clinical indications, contraindications and side effects to the prescribers and pharmacists. Moreover, they provide information about their brand usage and positioning. Medical representatives also endow with price of their products and promotional materials as a brand reminder(Buckley, 2004).

Promotion of prescription drugs in Ethiopia is still at its infancy stage, though the practice has been started long time ago. The reason is that the number of stakeholders specially the branded pharmaceutical companies who were active in promotion of prescription drugs was very few. Previously only few generic and branded multinational companies were involved in promotion of prescription drugs and because of this the number of medical representatives was limited. In recent times due to increased competition between the incoming generic and branded multinational companies, the practice is getting an attention from both regulatory bodies and manufacturers, and the number of medical representatives has been showing an increment.

The world health organization WHO defines drug promotion activities as all informational and persuasive activity by manufacturers and distributors the effect of which is to induce the prescription, supply, purchase and or use of medicinal drugs(WHO/HAI., 2005).

In general, Pharmaceutical companies promote their product through their medical representative (MRs) by using drug sample, printed product literature and gifts that helps them to increase acceptability of their product. Pharmaceutical promotion is all about informative action which makes physicians aware of new drugs and treatment optionsGönül et al. (2001); however, evidences showed that there is a limit up to where detailing and other promotional efforts influence prescription pattern beyond where excessive effort becomes counterproductive(Gönül et al., 2001, Manchanda and Chintagunta, 2004). According to(Connett, 2004) some of the most important elements used in promotion are as follows: advertising, sales promotion, personal selling and public relation. In addition the promotion element of the marketing of the organization includes all the relevant activities, materials, and media used by a marketer to inform and remind prospective customers about a particular product offering. No matter how it successfully developed a product may be, it is worthless except its benefit are made clear and

appreciated by the target customers. Each of these promotion elements are briefly described in the literature review section.

1.1.1 Ethiopian Pharmaceutical Market

In Ethiopia, pharmaceutical companies have been promoting their products more commonly on one-on-one basis by medical representatives that is in-line with the country code of ethics. Though many studies have been conducted in the area of pharmaceutical promotion and marketing in other countries, there is no well documented data in Ethiopia. Currently, there are many generic and branded pharmaceutical companies that operate in this country.

FMHACA is a body that regulates activities in respect of food, medicine, environmental health, health professionals, health and controllable health related institutions in Ethiopia. To control and regulate pharmaceutical promotion and advertisement to healthcare professionals and consumers FMHACA has developed a guideline. According to this guideline, any promotional material needs to be approved before it is used and the guideline also describes the professional requirement and conditions to be a medical representative. A person who needs to be a medical representative should have at least a first degree in pharmacy with a minimum of five years work experience and has to be a registered pharmacist (Ethiopia. Drug Administration and Control Authority (DACA), 2008, Ethiopia. Ministry of Health, 2003).

FMHACA expects every company to submit their promotional materials for approval and free medical samples needs to have a stamp on it that states "Physicians' Free Medical Sample" (Ethiopia. Drug Administration and Control Authority (DACA), 2008) But in the market these all requirements are not practical. Reluctance in the implementation of the stated guidelines affects both the industry and the healthcare system. On top of that, unless the guidelines are respected and the promotional practice is done according to the requirements, the prescribers' attitude towards medical representatives may not be good.

In Ethiopian pharmaceutical industry there are a lot of players such as the medical communities, healthcare managers, government authorities, manufacturers, consumers and distributors. They all agree that the purpose of pharmaceuticals is improving the public health problems (Abraham,

2009); however, the relationship among these players especially between the medical community and pharmaceutical companies is becoming a great concern for regulatory authorities. This might be due to increased public awareness, social media, arrival of new manufacturers to the interplay and increased drug expenditure. To establish and promote ethical practices, FMHACA developed guidelines and standard operating procedures (SOPs); however, the implementation of these guidelines and SOPs are ineffective (Ethiopia. Ministry of Health, 1993, WHO, 2010). This might be related to weak management structure and process and lack of trained staffs and resources(WHO, 2010). The first comprehensive Ethiopia National Drug Policy (NDP) that is in accordance with National Health Policy (NHP) was formulated in 1993 and it gives guidance for the pharmaceutical sector of the country(Ethiopia. Ministry of Health, 2003).

Therefore, In Ethiopia, pharmaceutical companies especially those that deal with prescription medications operate in a very competitive environment because of the existence of various brands of generic medications. The competitive nature of the business environment makes it mandatory for them to develop and implement strong promotional strategies in order to gain and maintain a reasonable share of the market.

1.2 Statement of the problem

Promotion can influence prescribing more than we thought possible. Frequent exposure to promotion correlates with more expensive, less appropriate prescribing. People may not be aware of how much promotion influences them. Researches clearly shows that Physicians who report relaying more on promotion tends to prescribe less appropriately, prescribe more often and adopt new drugs more quickly.

Many developed and few developing countries have been studying the type and quality of Physicians contact with pharmaceutical companies (Manchanda and Chintagunta, 2004). In addition (Nair et al., 2010) and a study by osingaleeflang&wieringa (2010), Switzerland suggested that, physicians prescribing behavior is affected by pharmaceutical promotion directed at physicians in a significant positive way. But, unlike those countries, in Ethiopia there is no well documented and/or published study which has looked into this type of relationship between physicians in green licensed private hospitals and pharmaceutical companies. In relation to this,

companies have already understood the importance of promotion on prescription drugs to increase their sells volume and that's why they have already started employing medical representatives (MRs). But they do not have organized findings and evidence that helps them which kind of promotional techniques influence prescribers' behavior. Therefore, the result of this study will help pharmaceutical companies to know the best promotional techniques to influence the most. Since countries are different in many aspects like culture, economic development and literacy, companies need to understand the right kind of promotional mixes that impact prescription decision in Ethiopia scenario.

1.3 Objectives

1.3.1 General objective

To investigate the impact of pharmaceutical sales representative visit (promotion) on Physicians' company specific medication preference working in Addis Ababa green licensed private hospitals.

1.3.2 Specific objective

- To identify the type of pharmaceutical promotional aids physicians want to receive from medical representatives.
- To assess the perception of physicians on the quality of promotional information they received from medical representatives.
- To evaluate if pharmaceutical promotional items have an impact on prescribing behavior of physicians.

1.4 Research questions

1.4.1 Main question

1. What is the impact of pharmaceutical promotional materials on prescribing behavior of physicians?

1.4.2 Sub-questions

2. What are promotional materials used by medical representatives?
3. Which promotional material is more effective to influence physicians prescribing behavior?
4. What is the perception of physicians on the quality of promotional information they received from medical representatives?

1.5 Significance of the study

This research is relevant for creating awareness for health professionals, medical representatives and pharmaceutical companies on how pharmaceutical promotion can influence physicians' selection of medications and decisions of prescribing. On the other hand, the findings of this research can help to medical representatives and pharmaceutical companies to figure out the best promotional approach to influence the most.

Conclusion of this research helps to give recommendations for the healthcare authorities and companies that are involved in pharmaceuticals marketing. It will help companies, payers and policy makers what needs to be done to improve the pharmaceutical business practice. For companies, the study will help to know what mixes of promotional techniques are more productive in influencing prescribers' decision behavior so that companies will marshal an optimal resources rather than over spending or wasting time on unproductive mixes of techniques. For the regulatory authorities, the study will help to understand and give guidance on unacceptable ethical practices. And for the payers who can be the patient, insurance company or government, the study will help to optimize their expenditure and question the unethical practices. In addition to the above points, the findings of this study also will give a clue to conduct further investigation in the area and evaluate the ethical practices of promotion.

1.6 Scope of the study

The study will be conducted on green licensed private hospitals in Addis Ababa, the capital city of Ethiopia and the social political and economic center of the country. Of the total number of pharmaceutical companies, the highest number is located in Addis Ababa represented by many

medical representatives. According to the data obtained from FMHACA, There are 10 green licensed private hospitals in the city which are listed below.

- Teklehaymanot Hospital
- Amin Hospital
- Betezatha Hospital
- St.Yared Hospital
- Addis hiwot Hospital
- Korea Hospital
- Kadisco Hospital
- St.Gebreal Hospital
- Bethel Hospital
- ICMC Hospital

1.7 Limitation of the study

Since the study was conducted only in Addis Ababa green licensed private hospitals, the result may not represent the promotional practice in other parts of the country. Moreover it is limited only to physicians and may not show the practice of other health professionals who have the power of prescribing. Furthermore the study will not deal with governmental hospitals because most of company specific pharmaceutical medications are consumed in private hospitals. Since the study was done by self-administered questionnaire it may be liable to social desirability bias and may have high non-response rate. Time and budget were big limitations to conduct in-depth investigation on physicians' prescription behavior. The study did not also deal with regulatory offices about the promotional practices in the country.

1.8 Definition of terms

Generic Medication: is a pharmaceutical drug that is equivalent to brand-name product in dosage, strength, route of administration, quality, performance, and intended use.

Green licensed Hospitals: the one which are on top level and have approval from FMHACA by fulfilling the needed requirements.

Medical Representative: is a representative of a manufacturing firm employed directly or through the distributor and licensed by the drug regulatory authority to conduct promotional activities in providing information to healthcare professionals about the firm's drugs

Over-the-Counter (OTC) drug: is a medicine or particular pack of medicine which is available without prescription and that can be advertised to the public for use in self-medication.

Physician: is a person who has earned a Doctor of Medicine (MD) degree and who is accepted as a practitioner of medicine under the laws of the state, province, and/or nation in which he or she practices.

Prescription: is any order for medicines written by a duly authorized healthcare professional issued to a patient in order to collect medicine from dispensing unit.

Prescription drug: is a medicine that is only dispensed under a prescription written by an authorized healthcare professional.

Promotion: is any activity undertaken (or material prepared) by a member company or any third party acting on behalf of the company which is directed at healthcare professionals to promote the prescription, recommendation, supply, administration or consumption of its pharmaceutical product(s) through all media, including the internet.

Promotional Item: is a non-monetary gift such as brochures, stationeries, clinical study reprints, detail aids, anatomical charts and others made for promotional purpose.

Promotional Aid: is a non-monetary gift such as sponsorship, meals, and others made for promotional purpose.

1.9 Organization of the paper

The study is organized in to five chapters. Chapter one deals with background of the study, definition of key terms, statement of the problem, research questions, objectives, significance, scope and limitation of the study. The second chapter is devoted to review of related literature. The third chapter is concerned with research approach, research design, sampling technique, data type and source, population and sampling procedure, data collection instrument, reliability and validity and data analysis technique. The fourth chapter will focuses on demographic variables of the respondents, data analysis and interpretation. The final fifth chapter will be consists of summary of the major findings, conclusions and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

The previous chapter provides an overview of the research. This chapter reviews different literatures about the concepts of theoretical and empirical review. At the end, a conceptual framework is provided with its explanation.

According to(MMBONE, 2011)Theoretical models, like Newton's Laws or Maxwell's equations, are extremely useful. They cover a wide range of situations and predict extremely well over a very wide range of factor levels. Unfortunately, every theoretical model is based on certain assumptions. If these assumptions are not met, the model may fail to predict correctly. It may not even be close. Even worse, it is not uncommon to have no theoretical model that covers the work you are doing. With no model, you can make no predictions. Theoretical models are very expensive in both time and data. Empirical models are relatively cheap in both time and data. If you can afford it, the best approach is to work on developing theoretical models for the long term while using empirical models to make products to sell along the way.

2.2 Theoretical Review

2.2.1 Promotion and its elements

The promotion element of the marketing mix of the organization includes all the relevant activities, materials, and media used by a marketer to inform and remind prospective customers about a particular product offering(Connett, 2004). The goal of promotion is to persuade the target consumer to buy or consume the product offering.

The promotional element of the marketing mix includes various communication methods and activities aimed at the target consumer.

Various authors agree that the promotional mix includes the elements of advertising, public relations, sales promotion, personal selling, direct marketing, events and sponsorship marketing,

as well as Internet/interactive marketing (Belch and Belch, 2007, Connett, 2004, O'Guinn et al., 2009, Ouwersloot and Duncan, 2008).

➤ **Public relations/publicity**

Public relations (PR) is a management function aimed at managing the relationships and communication between the organization and various public groups to establish common goodwill and maintain the good reputation of the organization (Arens, 2011, Belch and Belch, 2007). The tool used in public relations is communication, and it is used to reach internal and external stakeholders in a manner that will enhance the organization's overall marketing strategy.

➤ **Sales promotion**

Sales promotion is defined as all marketing actions focusing on eliciting an immediate response from the target market by offering value incentives to members of the distribution channel and/or the final consumer (Arens, 2011, Belch and Belch, 2007, Ouwersloot and Duncan, 2008). Therefore, the main aim is to acquire a specific response to the offer from the target audience. They are characterized by the provision of some form of reward for a particular behavior; they change the perception of the value of the offering.

➤ **Personal selling**

This part of the promotional mix is defined as person-to-person communication where the sales representative uncovers and satisfies the needs of a customer to the mutual benefit of both (Arens, 2011, Belch and Belch, 2007). Personal selling brings the customer to the organization and in most cases the consumer is interested in buying. The personal selling process leads the consumer through the details of the product offering and aims at closing with an actual sale of the product.

➤ **Direct marketing**

Direct marketing delivers advertising that is accountable and has added value, because it builds awareness, as well as generating actual sales (Arens, 2011, Belch and Belch, 2007).

The media used in direct marketing include direct mail, telephone, broadcast, printed media and the Internet. The interactive nature of direct marketing enables it to be an integration of advertising, selling, buying and distribution.

➤ **Events and sponsorship marketing**

Sponsorship marketing occurs when an event receives financial support from an organization (the sponsor) and in return provides the opportunity to the sponsor to associate itself with the event. This, in turn, generates publicity for the sponsor(Shimp, 2010).

➤ **Internet/interactive media**

The Internet is the most prominent interactive medium today. Interactivity refers to the ability of an organization to link and connect with its customers (Shimp, 2010).

2.2.2 Influence of promotion on physicians' prescribing behavior

In the developed and few developing countries studies have been conducted to investigate whether pharmaceutical promotion has an overall increase on prescription drugs (Spurling et al., 2010). Though physicians could not agree on the influence of promotion on their prescription behavior (Burashnikova et al., 2008).The results of these findings prove that promotion of drugs affect prescription behavior of physicians positively(Vancelik et al., 2007). To affect the prescription behavior of physicians positively and get increased prescription, MRs use variety of promotional techniques including gifts, drug samples, sponsorship, CMEs and journal advertising (Schramm et al., 2007, Majumdar et al., 2003). However, the impact of promotional effort on prescription generation depends on the kind of brands(Pedan and Wu, 2011), disease categories, specialty of the physician, work settings and economic status of a patient (Joyce et al., 2011, Spurling et al., 2010, Tan et al., 2009, Lobo et al., 2012). Though the effect of promotion on prescription is positive a study proved that the efforts of pharmaceutical promotion have a positive effect on prescription up to a point after which excessive expenditure on pharmaceutical promotion has a counterproductive effect(Gönül et al., 2001). To show the impact of promotion on the impact of prescription drugs studies were conducted and proved that promotion of competitive drugs adversely affect the physicians' prescription behavior and have a

negative impact on less promoted products (Manchanda and Chintagunta, 2004, Pedan and Wu, 2011). Similarly another study also showed that the interaction of medical representatives have an influence on prescribing behavior of promoted drugs (Wang and Adelman, 2009, Zipkin and Steinman, 2005). In general different research findings suggested that drugs promotion has a positive impact on physicians' prescription behavior. However, studies recommend that to optimize their return on investment pharmaceutical companies should use an efficient allocation of resource (Pedan and Wu, 2011).

It has been discovered that innovative promotional techniques in pharmaceutical industry play a key role in keeping physicians' involvement and getting their interest in the product that companies are promoting (Siddiqi et al., 2011). To influence the prescription behavior of physicians', pharmaceutical companies strengthen their relationship with physicians in different ways; for example, a study revealed that around 94% of physicians have some kind of relationship with pharmaceutical companies and most of these relationship involve receiving free medical samples, meals, payments and other promotional materials. Around 28% of respondents received payments for consulting, giving lectures or enrolling patients in trial (Campbell et al., 2007). The relationship of physicians with pharmaceutical companies affect their prescription decision, especially the relationship of KOLs with pharmaceutical companies has a strong influence on their own prescription behavior and fellow doctors that favors a sponsoring company products (Campbell et al., 2007, Nair et al., 2010).

Some researchers also studied that publication of new evidence has a modest impact on change of practice but promotional activities appears to increase the adoption of the evidence; therefore, companies who need to accelerate the adoption of their evidence may need to undertake more active promotion rather than relaying only on publication of an article and creating new guidelines (Majumdar et al., 2003).

2.2.3 The Influence of Medical Representatives (MRs) on Physicians Prescribing Behavior

The influence of MRs visit on physicians prescribing behavior is studied and results showed different level of outcomes. A study done in Russia found that around 30% of physicians

admitted that their prescribing behavior is affected majorly by MRs visit while about 60% of physicians reported a minor influence but it is only 3.2 % of physicians who reported that their prescribing behavior is not affected by MRs visit(Burashnikova et al., 2008). Similarly one systematic review that included about 29 articles that studied the impact of MRs Visit also revealed that around 17 studies found an association between MRs visit and an increment of prescription for the promoted drug and none of the studies found less frequent prescribing for promoted drugs(Spurling et al., 2010). Similarly study conducted on the influence of MRs interaction with physicians at rural family clinic showed that restriction of MRs decreased prescription of branded (Hartung et al., 2010a). In contrast to the above finding a study revealed that the most influential factor in physicians' prescription decision is their previous experience with the product and of the marketing techniques that companies apply detailing by MRs has the highest influence on prescription decision (Pitt and Nel, 1993).

Pharmaceutical promotion can have a positive effect on quality use of medications; however, it might have also a negative influence on quality use of drugs and might affect the patients' wellbeing. Therefore, physicians should aware of the different webs of promotional technique that are directed to them(Kyle et al., 2008). Despite the different techniques companies are using to promote their products, a study revealed that physicians' prescription behavior is influenced more by the scientific information they receive from medical representatives. Regarding the impact of promotional materials such as gifts, the impact is different on consultants and physicians. Consultants are influenced more by scientific information and not interested on small gifts but physicians behavior is influenced more by the gift they get (Siddiqi et al., 2011). The impact of promotional techniques that pharmaceutical companies use differ among the different settings; example, a survey showed that physicians in solo practice, two-person, or small group practices were more likely to have frequent interactions with pharmaceutical industries than those physicians practicing in hospitals or clinics(Campbell et al., 2007).

Medical representatives visit their physicians in their territory with different promotional materials such as brochures, pens, clinical reprints, gifts and samples(Kyle et al., 2008). The positive aspect of medical representatives' visit to physicians is that they come with new information about drugs that benefit patients, encourage Adverse Drug Reaction (ADR)

reporting of their company products and provide samples to physicians that can help needy patients(Burashnikova et al., 2008). The negative side is that they promote medicines as if medicines are a primary option to treat medical anomalies and encourage reliance only on medication rather than non-drug options(Edwards and Ballantyne, 2009).

The interaction and relationship that occur between MRs and physicians has been criticized for long time due to its potential influence to compromise the interest of end users, of course patients. This can be due to excessive sales pressure, presentation of the benefits of a drug without providing negative aspects, the opportunity to supply gifts and promotional items such as pens, coffee cups, notepads, and the provision of free lunch to the physicians and staff. Some have suggested that the personal relationships that develop between the doctor and MRs may bias clinical decision making. Therefore, guidelines have been developed that limit these interactions(Samson, 2011). A standardized method of providing training on physicians' interactions with MRs increases the likelihood that physicians will use information about a medication in a manner in line with most acceptable manner(Gross and Ference, 2011).Pharmaceutical promotion can have a positive effect on quality use of medications; however, it might have also a negative influence on quality use of drugs and might affect the patients' well-being. Therefore, physicians should aware of the different webs of promotional technique that are directed to them(Kyle et al., 2008)..

A study conducted in Eastern Turkey showed that around 40.7 % of the GPs reported that activities of medical representatives have a strong effect on their prescription decision(Vancelik et al., 2007). Another study that assessed the prescription behavior of GPs revealed that physicians with high prescription cost were getting more frequent visit from medical representatives(Watkins et al., 2003). In addition to the frequency of visits, physicians' prescription behavior is also affected by individual difference across medical representatives (Manchanda and Chintagunta, 2004). A sales presentation by an ethically honest and well trained medical representatives ensures that the prescribing patterns of physicians are not negatively affected compared to the false information coming from inappropriately trained medical representatives(Alkhateeb, 2011).

2.2.4 Influence of Key Opinion Leaders (KOLs) on Fellow doctors and Students

In the medical world especially in medical schools and research institutions KOLs have a strong influence on their students and colleagues(Bulte and Joshi, 2007). In academic institution the source of influence of KOLs is not only from their expertise but also the position they hold and clinical experience. Since the KOLs believed to have long years of experience and practical clinical knowledge their recommendation is valued by their students and fellow doctors(Tichelaar et al., 2010). KOLs in the pharmaceutical industry play a great role. They can influence the prescribing behavior of their students and colleagues in their circle. One study showed that physicians' prescription behavior is significantly influenced by the behavior of research active specialists or KOLs in the physicians reference group(Nair et al., 2010). Similarly a study conducted on the final year medical students revealed that students prescribe the drug that their teachers and KOLs use as an example during lecture (Tichelaar et al., 2010). The contribution of KOLs to pharmaceutical companies is not only by prescribing or influencing the prescription behavior of fellow physicians' to use a given drug but also they help companies during the clinical practice guidelines development (Campbell et al., 2007).A study proved that the proper use of KOLs have a multiplayer effect on the prescription choice behavior of fellow physicians(Nair et al., 2010). And research findings suggest that pharmaceutical companies may focus also on physicians that are perceived to influence the prescription behavior of other fellow physicians(Campbell et al., 2007). Similarly other related studies also revealed that the use of different promotional mixes such as sampling, detailing and other promotional aids together with KOLs has a synergistic effect and facilitate the adoption of new drugs by many physicians(Pitt and Nel, 1993).

2.2.5 The Influence of continuing medical educations (CMEs), sponsorships and journal Advertisement on Prescription Decision

In the medical world nothing is static and all the time there is a change. The mode of diagnosis, treatment approach, patient care and emergence of new technologies are influencing the healthcare industry in a way that is different from the past. Therefore, in order to remain current in light of the fast changing medical environment and cope with constantly evolving treatment

and prescribing information, healthcare professionals must continually update their practice knowledge and skills. One of the mechanisms that healthcare professionals use to satisfy their thirst for knowledge is CME (Ladd, 2011).

Most of the time conducting a full scale CME program regularly is expensive and in such cases organizers seek for assistance from pharmaceutical companies either to get partial or full sponsorship. The support from pharmaceutical companies can occur in several ways, including exhibit hall displays and educational grants for programs on specific topics, speaker fees and meal symposia (Singh et al., 2011).

The influence of company sponsored CME has been studied and results showed that the prescription behavior of physicians were affected after the CME. One systematic review that included 10 studies that focused on effect of CME on physicians prescribing behavior found that attending company sponsored CME led to an increase in prescription of the sponsor's product. This effect is assumed to be resulted from manipulation of the presentation content by the sponsoring company in such a way that favors its products (Wazana, 2000).

In CME sessions event organizers can choose a topic that is in line with the sponsor company product offerings. The content of the CME presentation favorably highlights the sponsor company offerings. In addition, during the process of selecting a qualified speaker, the event organizers choose the one who has a positive attitude towards the sponsoring company offerings. The commercial influence that results from these decisions is not necessarily acknowledged or even conscious, but might well reflect the cumulative effect of subtle influences and financial dependency that can affect even the best-intentioned CME providers (Marlow, 2007).

In the past, physicians were relaying on drug firms particularly on medical representatives for information about use of drugs particularly for newer drugs but recently the trend is changing and physicians also started relying on drug firms to finance their scientific meetings such CME, congress and patient case presentation (Lichter, 2008). A historical review of studies on these relationships revealed that the relationships between these two different groups created a gray area for the pharmaceutical companies that can help them manipulate the information that these

physicians receive; however, some of the studies that were revised pointed out the need of reforms for the betterment of the healthcare system (Marlow, 2007, Rodwin, 2010).

2.2.6 The Influence of Free Drug Samples on Physicians Behavior

Pharmaceutical companies usually promote new and expensive drugs that lead to higher cost of prescription medication (Miller et al., 2008, Symm et al., 2006) however, many physicians believe that drug samples can benefit uninsured and poor patients but studies showed that the availability of free drug samples rather leads to higher cost since physicians' prefer to prescribe non generic expensive drugs that have free samples (Warrier et al., 2010). Availability of samples encouraged prescribing habits inconsistent with practice guidelines and in conflict with teaching and formulary policies; for example, study showed that the elimination of free drug samples can increase the prescription of generic and more affordable drugs by more than three times to uninsured patients (Miller et al., 2008).

There are many studies that support the influence of free drug sample availability on physicians' prescription decision; however, most doctors deny that the availability of free drug samples affect their prescription behavior (Warrier et al., 2010). A study showed that elimination of free drug samples decreased the prescription of branded drugs and increased the use of non-promoted branded products significantly. The decrease in the prescription of promoted brands might be due to substitution effect from non-promoted branded drugs or generic products (Hartung et al., 2010b).

Physicians who distribute free drug samples believe that they are helping their patients but this depends on the kind of disease they are treating. If the problem is an acute disease the patient might benefit from the free sample but for a chronic disease patient the benefit is short lived and after finishing the samples dispensed the patient needs to buy the medication for long term use (Symm et al., 2006, Warrier et al., 2010).

A study done on family physicians also showed that availability of free drug samples make physicians to prescribe drugs having samples than who do not have. This means if the physicians' prescription behavior is influenced by availability of free drug samples, one might

expect to see more prescription for drugs having samples. Under the same circumstance, if availability of free samples influences physicians' prescription decision, one might also expect to see lesser formulary preferred medication prescription that leads to higher cost to the patient since this distributed samples are used to promote new and expensive drugs(Symm et al., 2006).

Similarly a study done on resident physicians showed that resident physicians with access to drug samples in clinic were more likely to write new prescriptions for heavily advertised drugs and less likely to recommend OTC drugs than their peers. There was also a trend toward less use of inexpensive drugs(Adair and Holmgren, 2005).

Though drug sampling is one of the most common marketing techniques practiced in the pharmaceutical industry, the tendency to hand out free drug samples decline as the age of the drug increase(Schramm et al., 2007).

In general it is believed that free drug samples have an impact on physicians prescribing behavior; however, the impact differs depending on the experience of the prescriber and seniority (Adair and Holmgren, 2005, Joseph and Mantrala, 2009) experienced doctors demand fewer samples whereas inexperienced doctors ask for more samples(Joseph and Mantrala, 2009).

2.2.7 The Impact of Promotional Gifts on Physicians Prescribing Decisions

Gifts such as stationeries, coffee mugs, stethoscope and others which are related to the physicians' day to day activity in regard to patient care are usually emblazoned with product and /or company names and are called product reminder but their potential to influence prescription behavior extends beyond the advertisement they bear. Some physicians see these industry gifts as professional entitlements and if these doctors did not get any gift from a given pharmaceutical company, they are less likely to prescribe the company's product because they think that the company did not give them attention (Katz et al., 2010).

Drug companies use different selling techniques to bring their products to the physicians' attention (Iserson et al., 2007). Among these techniques gift giving is the most common one (Schramm et al., 2007, Watkins et al., 2003). Usually health professionals accept gifts as

innocuous as stationeries, coffee mugs and fast foods, or as substantial as travel, cash honoraria and research support (Watkins et al., 2003). There are also extreme cases of gift giving, for example, taking active prescribing physicians to a luxuries entertainment place, dancing clubs and cash awards. Irrespective of the content, gifting is ubiquitous. A 2001 survey from the Kaiser Foundation noted that 61% had received meals, free access to entertainment, sporting events or travel, and nearly one in seven had received financial benefits (The Kaiser Family Foundation, 2002). Similarly a study revealed that availability of gifts in the medical industry ensures the generation of prescription but the prescription is generated at the expense of patients' well-being (Oldani, 2004).

A study showed that even if most of the gifts that physicians receiving are in line with professional and pharmaceutical guidelines still there are some personal gifts which are not. For example, gifts such as tickets to sporting events and entertainment and travel expenses to physicians' partners were against the accepted norms (McNeill et al., 2006). According to this study around 51% of physicians still accept personal gifts.

The appropriateness of gifts to physicians is under scrutiny and studies also conducted to see the reaction both from the public and physicians. One study showed that both physicians and member of the public believe that certain gifts from pharmaceutical companies are appropriate but not others. Regarding the appropriateness of gifts the result showed that the response from the public was more permissive. For example, gifts such as food, spirometer/ECG, conference with partner and stethoscope were more accepted by the public. Public respondents believed to judge the acceptability of gifts based on the relevance to the medical practice. On the other hand physicians were evaluating acceptance of gifts based on various factors such as value of the gifts, its relevance to their practice and whether or not the gift transferred to other staff or family members. The items that 50% of physicians agreed to be acceptable were either very low cost or relatively low cost and directly relevant to their practice. Physicians were less accepting moderate cost and expensive gifts even though it has relevance to their practice. In general both the members of the public and physicians were not supporting acceptance of gifts that were clearly irrelevant to the medical practice (McNeill et al., 2010).

2.2.8 The Effect of Price on physicians prescribing Decision

The list of studies on physicians' price sensitivity for prescription drugs is relatively short, and the evidence is not conclusive. For example; a study done by(Gönül et al., 2001) shows that generally speaking physicians' priority in prescription decision is efficacy of the drug and the patient conditions but not price; however, in Medicare patients the decision factor is price of the drug. Likewise a study done by(Campo et al., 2005) shows that price generally does not affect prescription decision, especially when prescription choices have limited financial consequences. Sometimes price sensitivity is revealed when new generic drugs are entering to the market. Studies show that the availability of generic drugs make the price sensitive physicians switch from branded to generic drug because these physicians believe that they reduced the financial burden of their patients by prescribing cheaper generic drugs (Gonzalez et al., 2008). Likewise physicians' prescription decision is also affected by the availability of insurance or Medicare. For instance, physicians become more price sensitive when they treat patients without insurance coverage and they prescribe cheaper drugs but when these doctors find out that their patients are reimbursed generously, they become price insensitive to prescribe branded drugs(López-Valcárcel et al., 2011).

Though the findings about influence of price of prescription drugs are not conclusive at the moment, it is expected that price will be one of the most important marketing tool to sell drugs. This is due to government regulation and insurance companies' guidelines that enforce prescription of generic drugs, and also the apparently higher sensitivity of younger physicians(Campo et al., 2005).

Contrary to the above findings physicians' prescription decision is also affected by their own financial gain. Physicians who prescribe and at the same time dispense drugs tend to prescribe more expensive drugs to benefit out of the higher margin. This kind of behavior suggests that such physicians are acting like imperfect agents to the patient(Liu et al., 2009).

A study showed that besides other therapeutic and compliance factors the cost of a drug affect the prescription decision of physicians(Tan et al., 2009, Tichelaar et al., 2010). For instance, a study conducted by(Reichert et al., 2000) showed that 88% of physicians are conscious about

cost of a drug during prescription decision and 71% of the physicians are willing to sacrifice efficacy to make drugs more affordable to their patients; however, all these doctors lack accurate information about the price of the drugs they are prescribing. Similarly a study conducted on General Practitioners (GPs) also showed that price of a drug is an important factor when they choose their first line drugs (Buusman et al., 2007).

2.3 Empirical review

2.3.1 What is the impact of pharmaceutical promotional material on prescribing behavior of physicians?

There are so many aspects which impact the Physicians' prescribing behavior recent study was conducted in Marathwada region India 2011(Sagar DN, 2012)with selected aspects, which impact the doctor's prescribing behavior while recommending the drugs. Similar like other sectors, drug promotion choices are taken to increase productivity of the company, by fulfilling the needs & wants of the clients. It is quite simple in non-pharmaceutical sectors as the client (consumer) can make up their mind to what item & in what requirements it should be bought. In drug promotion, the client & the customers are two different individuals. Even though the products are being bought by the patients for treating the infected situation, the choice of what item that individual should the physician takes purchase. Therefore the marketing policies are designed by keeping in view the consent of customers' i.e. prescribing physicians, retail chemists & purchaser (customer) i.e. patients. Not only these three but even the factors influencing prescription behavior of physicians: A study with internal customers of the company that is the sales promotion employees of the company are taken into consideration before or along with formulation of marketing strategies (Sagar DN, 2012). Free of cost samples of the drugs, free medical camps, product folders, Continuous Medical Education (CMEs), Gifts & other promotional inputs, Research Molecule, Incentives and Sponsorships to conferences appear to influence prescribing(Lundin, 2000) but more research is needed on this issue.

2.3.2 What are promotional materials used by medical representatives?

Pharmaceutical organizations often use drug samples as a technique in the ambulatory proper care establishing. Little is known about how the accessibility to drug samples affects physicians' prescribing behavior. In this research(Lundin, 2000)of self-reported doctor actions, avoiding cost to the drugswas the most reliable motivator for physicians to use drug samples, although physicians recognized other advantages of drug samples that varied with the medical conditions. The recognized advantages of drug samples often led physicians to review that they would distribute or recommend medicine that differed from their preferred medication choice.

2.3.3 Which promotional material is more effective to influence Physicians' prescribing behavior?

The influence of promotional materials by pharmaceutical industry on prescribing behaviors of doctors has a greater impact. The general promotional tools like gifts and etc. These are more influential rather than scientific promotional tools for the physicians contrast with consultants (Boltri JM, 2002).(Chew LD, 2000) Analyze the effect of drug sample availability on physician prescribing behavior. Based on their review, they investigate that most accepted view that the medicines free samples are beneficial to the patients and indirectly the good caring response come from the doctors from the free samples that's why it should be reconsidered.(Clark MM, 1998) Examine the prescription behavior among Medicare beneficiaries with capped prescription benefits. They find that the prescription behavior has significant impact on the Medicare choices members. Small gifts such as pens, notepads, dinners sponsored by pharmaceutical companies, sponsorship to the conferences and many other activities undertaken by physicians. Many doctors do not take into account accept small gifts as unethical and inputs such Rx affect its structure. A doctor agrees that such activities by the pharmaceutical companies are the indirect requirement of their drug prescriptions(Corckburn J, 1997, Couturier C, 2000). The personalized pharmaceutical marketing along with the facility of gifts and sponsorship to education recreational activities the factors influencing prescription behavior of physicians are Price of the product, Availability of the product, Communication made by MR

the product quality that is being promoted. The conclusion shows that marketing strategies influence the physician prescription behavior in this study.

2.3.4 What is the perception of physicians on the quality of promotional information they received from medical representatives?

The study done in India(Meenakshi Handa, 2013) indicates that physicians perceive conferences/symposia to be the most credible and quality information source. The study indicates a positive correlation between credibility/quality of promotion tools and the extent to which it influence prescription behavior.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter gives a brief introduction about the selected study area (Addis Ababa, Ethiopia), methodology applied in this research and approaches used to collect the required data for the research in order to achieve the overall objectives of the study. In this research, Addis Ababa green licensed private hospitals are considered as a study unit. Therefore, in the following sections a detail view of the research methodology is given.

3.2 Study area

This study is conducted on physicians practicing in Addis Ababa, the capital city of Ethiopia. Addis Ababa is the largest city in Ethiopia located almost at the center of the country on an area of 526.99 km² and is divided into 10 sub cities. Addis Ababa has the status of both a city and a state, and it is also an influential city in Africa due to its historical, political and diplomatic significance. It has been a seat for the African Union and its predecessor Organization of African Union (OAU), the headquarters of the United Nations Economic Commission for Africa (UNECA) and numerous other continental and international organizations. The city is populated by people from different regions of Ethiopia – the country more than 80 nationalities speaking 80 languages and belonging to a wide variety of religious communities. It is also a home to Addis Ababa University which is one of the oldest as well as the largest university in the country (Ethiopia. Central Statistic Agency (CSA) 2007).

There are 10 green licensed private hospitals in Addis Ababa. The city is also a center for all multinational and generic pharmaceutical companies who are operating in the country. These companies have distributors in Addis Ababa and sub distributors in other regions. More than 100 pharmaceutical sales representatives who were representing around 15 manufacturers were practicing in Ethiopia. In general, the focus of most companies specially the branded companies is in Addis Ababa.

3.3 Research design

In a broad, interdisciplinary field such as planning, research is conducted in a number of ways. Three possible research designs are suggested below(Zikmund et al., 2009). They are by no means mutually exclusive a research project may include two or more of these designs.

3.3.1 The Descriptive Study design

This approach attempts to identify the characteristics of the problem through description. Because the subject cannot be described in all its detail, careful selection of facts must occur. Facts should be gathered according to predetermined criteria and for the purpose of demonstrating relationships of interest. To the extent that the descriptive study of a particular problem provides one with a generalized understanding of a phenomenon that, in turn, can be employed to understand other specific problems, this approach is useful and acceptable.

3.3.2 The explanatory study design

This approaches attempts to find the answer to an enigmatic question and are designed to investigate cause and effect relationship. It looks at how things come together and interact.

3.3.3 The exploratory study design

This approach is defined as the initial research in to a hypothetical or theoretical idea. It is conducted about a research problem when there are few or no earlier studies to refer to.

In my study, descriptive research approach is used with the unit of analysis being individual people (physicians) and the core being prescribing behavior.

3.4 Research Approaches

There are three types of research design, Qualitative, Quantitative and Mixed. The research design used may vary from research to research.

3.4.1 Qualitative approach

Qualitative research is a broad methodological approach that encompasses many research methods. It examines the why and how of decision making used to gain an understanding of underlining reasons, opinions and motivations.

3.4.2 Quantitative approach

Quantitative design emphasizes objective measurements and the statistical, mathematical or numerical analysis of data collected through questionnaire.

3.4.3 Mixed approach

Mixed methods research is more specific in that it includes the mixing of qualitative and quantitative data, method, and methodologies, and/or paradigms in a research study or set of related studies.

In my study, quantitative research approaches issued via numerical analysis of data collected through questionnaire. This study has been based on descriptive analysis.

3.5 Data types and Data sources

To address the objective of this thesis, different type of data is employed. The following primary and secondary data sources are used.

3.5.1 Primary data sources

Primary data were gathered through questionnaire. The questionnaire was designed for physicians of different specialty who are practicing in Addis Ababa green licensed private hospitals. The survey captured information related to Socio demographic variable, prescribing decisions and its determinants, physicians exposure to promotional activities, preference to promotional tools, the impact of pharmaceutical promotion on prescribing behavior. The questioners are present in Appendix – I.

3.5.2 Secondary data sources

The secondary source of information include: relevant reports, unpublished sources, reference books, internet websites were recognized and as a main source of information were used as a main input for the design of spatial database application. The reference materials includes journals, report, books, internet websites were also recognized as a main source of information.

3.6 Population and sampling procedure study

3.6.1 Population of the study

The source of population was all physicians practicing in Addis Ababa private hospitals. The study population includes all physicians who are actively prescribing at the time of the study, working in Green licensed private hospitals located in Addis Ababa.

3.6.2 Census

According to the data obtained from FMHACA, there are 10 Green licensed private hospitals in Addis Ababa. Of those, a total of 210 Physicians of different specialty are working. Accordingly, all physicians working in those Green licensed hospitals are taken as the study unit.

3.7 Inclusion and Exclusion Criteria

Inclusion criteria are characteristics that the prospective subjects must have if they are to be included in the study. Exclusion criteria are those characteristics that disqualify prospective subjects from inclusion in the study. Inclusion and exclusion criteria may include different factors depending on the nature of the study (Zikmund et al., 2009).

3.7.1 Inclusion criteria

Physicians with registered license, practicing in green licensed private hospitals, actively prescribing medications for their patients and who are willing to participate in the survey is included in the study.

3.7.2 Exclusion criteria

Physicians who are not authorized to prescribe, who are not volunteer to participate and those who are on annual leave did not participate in the study.

3.8 Study Variables

A variable is a concept or construct that can vary or have more than one value. There are two types of variables, independent and dependent.

3.8.1 Independent Variables

Independent variable is a variable that is controlled and manipulated by the researcher (Zikmund et al., 2009). In this study gender, age, country of first degree graduation, country where specialty program is completed, type of specialty, total years of practice, promotional Aids, promotional items and other factors like Quality and price of the medicine were found to be independent variables.

3.8.2 Dependent Variables

Dependent variable is a variable that is measured as an outcome by the researcher and in this study prescribing behavior of Physicians is considered as a dependent variable.

3.9 Data Collection Instrument

In this study the researcher used a self-administered semi-structured questionnaire to collect data. Close ended questions is included in the questionnaire. There were forty two (42) questions divided in four parts. The first part was comprised socio-demographic variables and practice pattern of participants. The second part was included questions about CMEs. Questions on preference for promotional materials were constituted the third part, while the last and fourth part questions were source and quality of information. The questioner was adopted from literature.

3.10 Reliability and validity

All the data was checked for completeness, accuracy, clarity and consistency by the investigator and supervisor immediately after data collection. The principal investigator and supervisor closely monitor the data collection process.

3.11 Data analysis technique

All data, which is obtained from the questionnaire, will be coded in terms of number. If there is any missing data, it will be excluded from the analysis. SPSS statistical software is used for data entry and analysis. Microsoft excel program is used to describe the collected data in terms of figures and Tables.

3.12 Ethical Considerations

The study proposal was reviewed and approved by the research committee of Addis Ababa university school of Commerce. Verbal informed consent was obtained from all study participants before administering the questionnaire. The study was conducted after the participant confirms his or her willingness to take part on answering the questionnaire. It is participant's right to escape a question. Privacy and data confidentiality is ensured by putting codes instead of participants name in the filled questionnaire and placing it in locked cabinet so that others except the researcher cannot access the data.

CHAPTER FOUR

STUDY RESULTS

4.1 Introduction

The aim of the research study was to review the current promotional techniques that pharmaceutical companies use to influence physicians' prescription behavior. The findings will provide a better understanding of the effective promotional techniques that win physicians' attention. The main purpose of the study was to determine the influence of prescription drug promotion effort on physicians' prescribing behavior. In order to achieve the research purpose and aim, the research question and research objectives that formed the basis of gathering data and interpreting data will be reiterated.

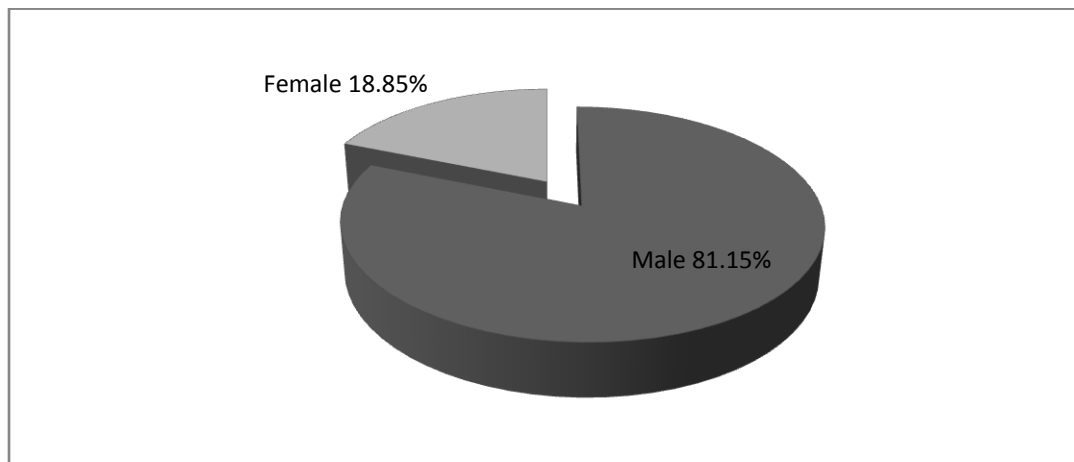
In this chapter, the research findings are presented and discussed. Results are presented in graphical and tabular format based on the responses given by the respondents.

4.2 Socio-demographics of respondents

A total of 210 questionnaires were distributed. Of these, 132 were returned and hence the response rate was 62.9%. Ten questionnaires were rejected due to incomplete or inappropriate response. Of the returned questionnaires, 122 (92.4%) were considered for subsequent data analysis. Hence, all data presented below is based on the questionnaires valid for data analysis.

Analysis of the data collected revealed that 99 (81.15%) of respondents were male and 23 (18.85%) were female as presented in Figure 4.1

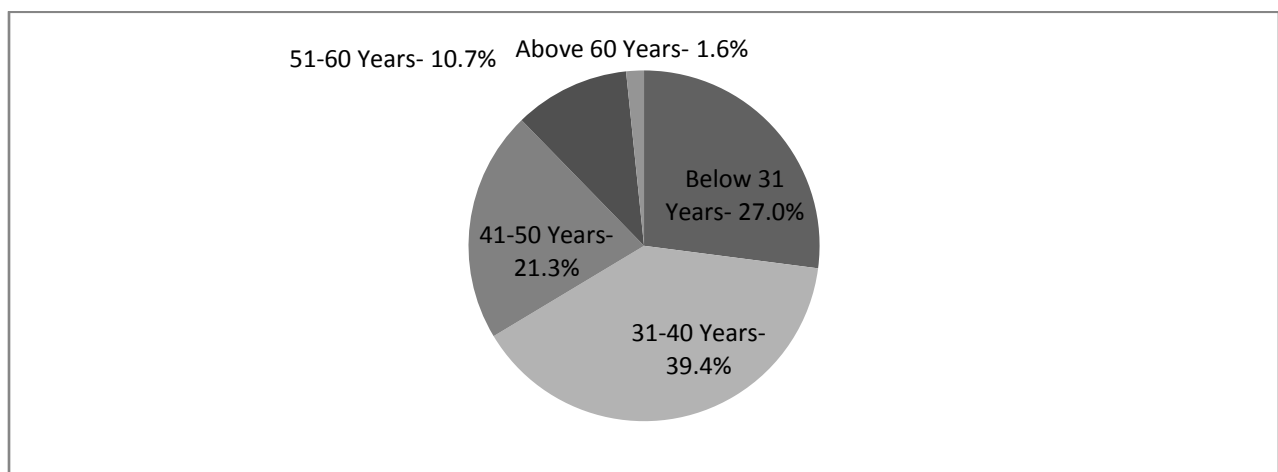
Figure 4.1 Gender of respondents



➤ This indicates that, majority of the participants were male.

Analysis of the data collected revealed that 48 (39.4%) respondents were between the age of 31 and 40 years. The second highest proportion was 33 (27.0%) which constitutes the number of respondents having age below 31 years. And the proportion of respondents between the age of 41-50 years and 51-60 years was 26 (21.3%) and 13 (10.7%) respectively. Of all participants only 2 (1.6%) of them have age above 60 years. (Figure 4.2)

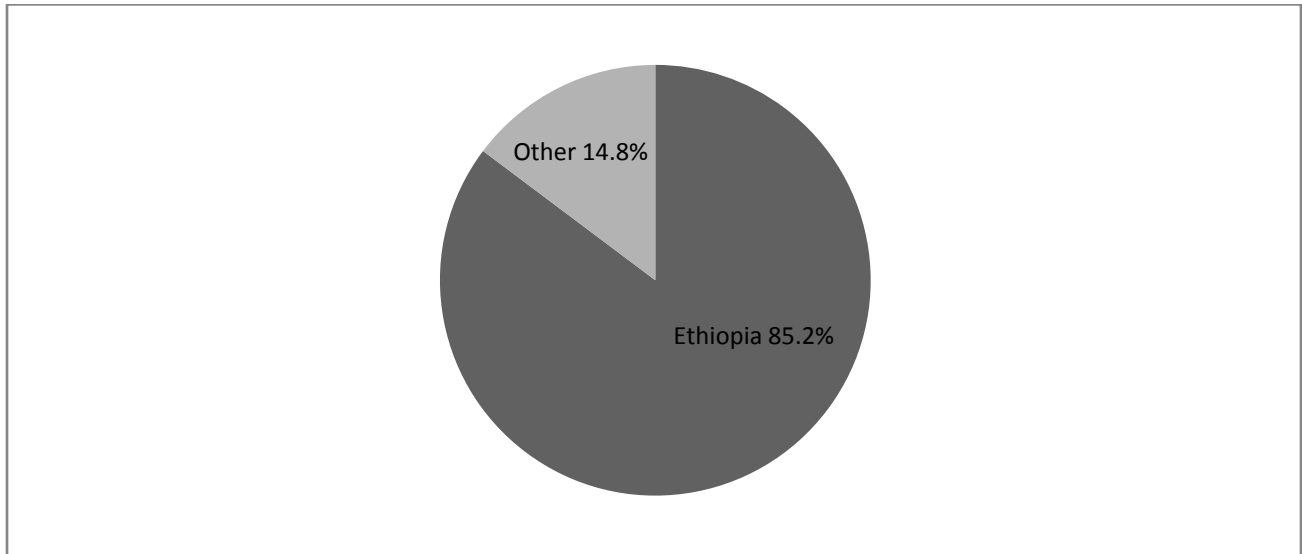
Figure 4.2. Age group of respondents



➤ This indicates that, majority of the participants were between the age 31 and 40.

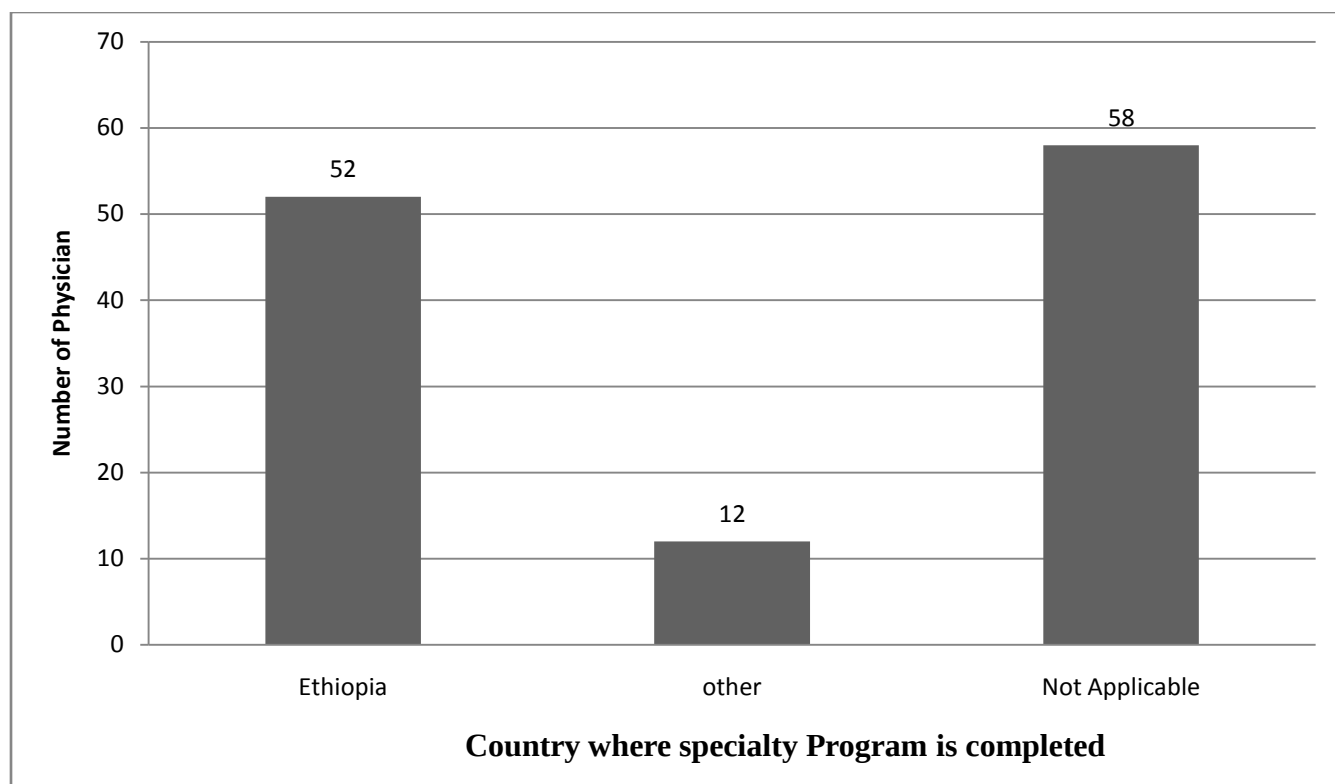
Regarding the country where participants attend their education, of all respondents 104 (85.2%) physicians had completed their first degree in Ethiopia and 18 (14.8%) had completed in countries other than Ethiopia. (Figure 4.3)

Figure 4.3. Country of first degree education



➤ This indicates that, majority of the participants completed their first degree in Ethiopia. Analysis of the collected data revealed that 52 (42.6%) respondents had completed their specialty program in Ethiopia, 12 (9.8%) completed in countries other than Ethiopia. The remaining 58 (47.6%) respondents did not completed specialty program; of these 58 respondents, 24 (41. 4%) were in their residency program and 34 (58.6%) were practicing as GPs. (Figure 4.4)

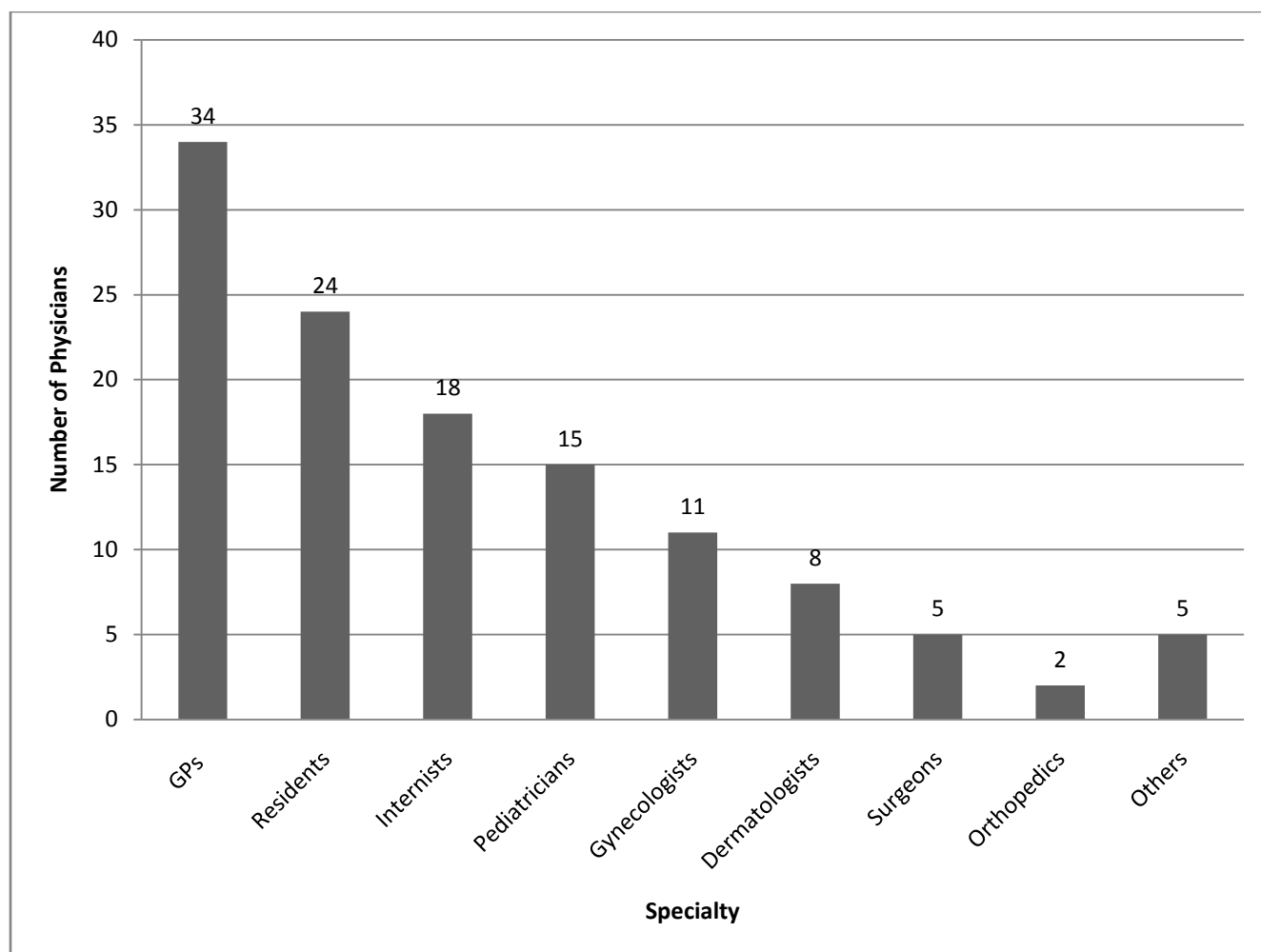
Figure 4.4. Country of specialty program completed



➤ This indicates that, majority of the respondents did not complete specialty program.

Looking at the specialty of participants, 34 (27.9%) were GPs, 24 (19.7%) were residents and 18 (14.8%) were internists, and these three groups constitute more than half of the respondents. The proportion of pediatricians, and gynecologists, which is 15 (12.3%) and 11 (9.0%) respectively was also significant followed by 8 (6.5%) dermatologists. The other 5 (4.1%) were surgeons, 2 (1.6%) were orthopedics and the rest 5 (4.1%) were other specialties. (Figure 4.5)

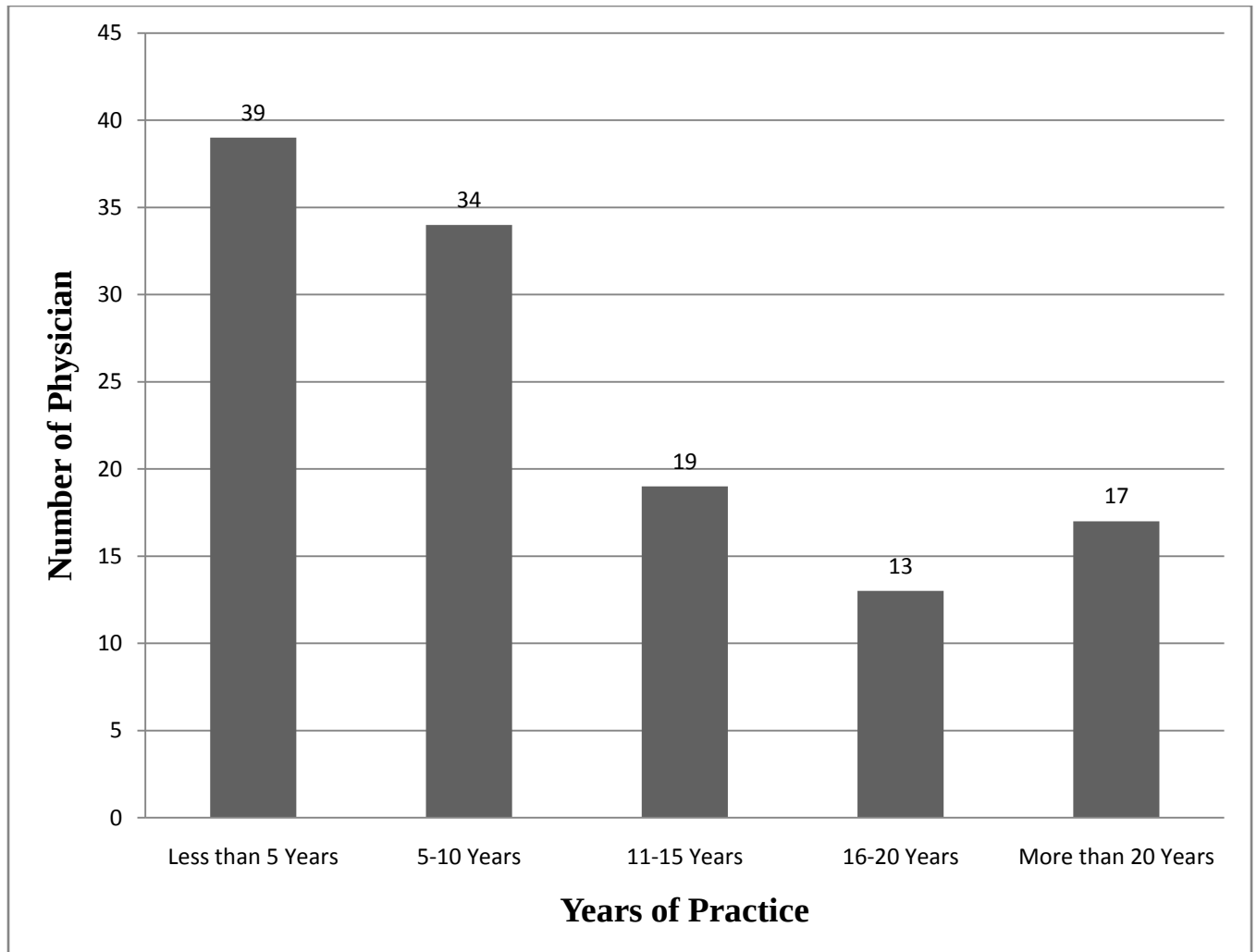
Figure 4.5. Specialty of respondents



- This indicates that, Of the total of respondents with different specialty, GPs, Residents and Internists are the leading one in descending order.

Near to one third, 39 (32.0%) respondents reported that they have less than five years of work experience, 34 (27.9%) respondents claimed that they have 5-10 years of work experience. The other 19 (15.6%) respondents indicated that they have worked for 11-15 years; other 17 (13.9%) respondents claimed that they have worked more than twenty years and the rest 13 (10.6%) respondents had 16-20 years of work experience (Figure 4.6).

Figure 4.6. Respondents' year of practice



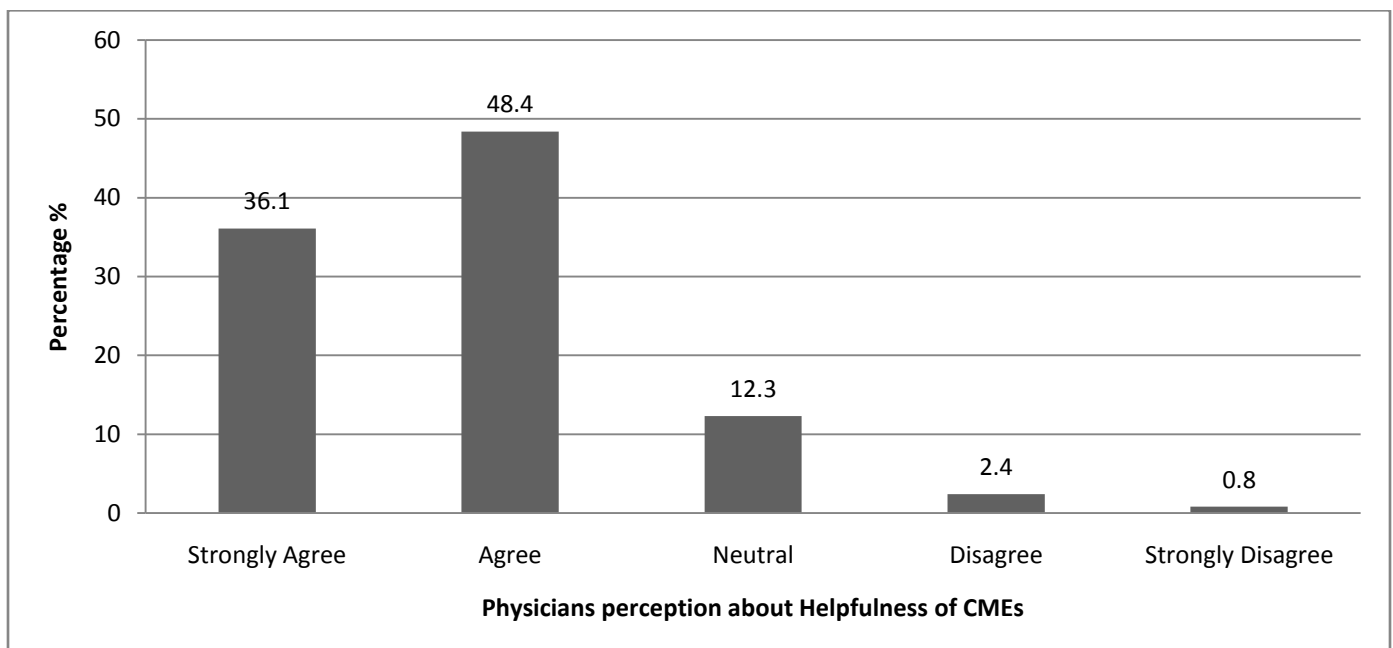
- Majority of the respondents have less than five years work experience.

4.3 Results regarding CMEs, ethics and promotional method

To understand the influence of promotional techniques respondents were asked a set of questions that were answered based on selecting an appropriate choice on a scale from a given list. The scale was 5 point, where, 1-strongly disagree, 2-disagree, 3-neutral, 4-agree and 5-strongly agree.

Regarding the helpfulness of CMEs organized by pharmaceutical companies, physicians were asked and 59 (48.4%) of them agreed that it is helpful, 44 (36.1%) physicians were also strongly agreed but 15 (12.3%) of respondents were neutral about the usefulness of CMEs. The answer of the rest 3 (2.4%) and 1 (0.8%) respondents were disagreed and strongly disagreed respectively. (Figure 4.7)

Figure 4.7. Helpfulness of CMEs in medical practice

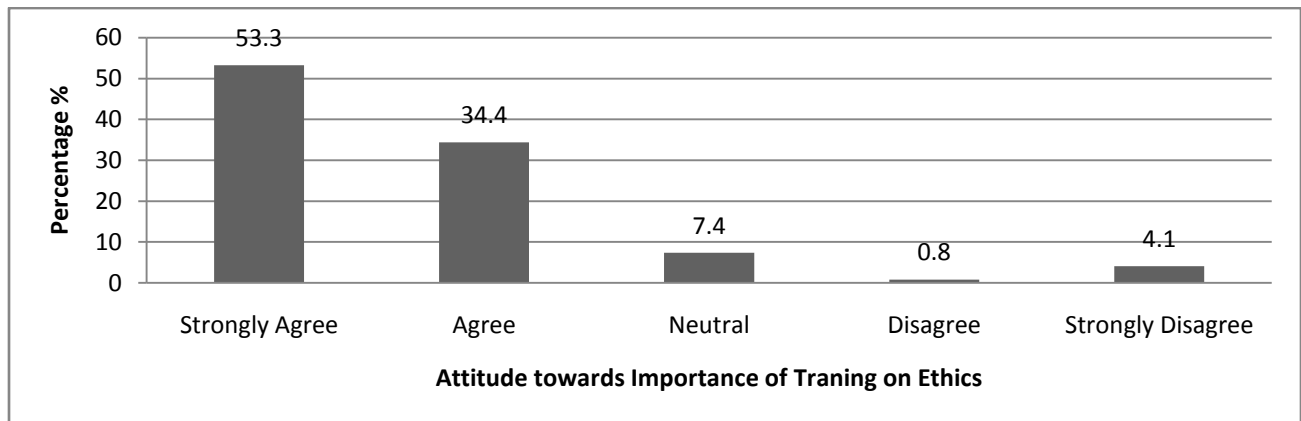


- This indicates that, almost all of the respondent physicians agree on the helpfulness of CMEs in medical practice.

Physicians were also asked questions related to ethical practices that were common in the pharmaceutical industry. Regarding the importance of training on ethics of pharmaceutical industry-physician interactions, 65 (53.3%) strongly agreed on the importance of the training,

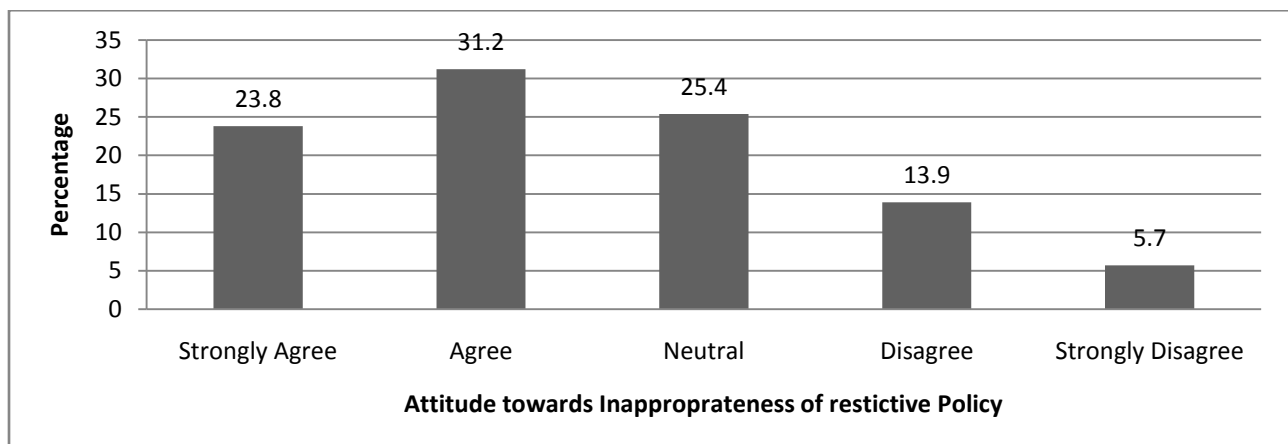
6(4.9%) either disagreed or strongly disagreed on the need of the training. They were also asked on the Inappropriateness of restrictive policy on the interaction of medical representatives and physicians. As many as 38 (31.2%) were agreed on the Inappropriateness of strict policy and all the results for both Questions are shown on Table 4.2. (Figure 4.8 & 4.9)

Figure 4.8. Attitude on the importance of training on ethics



- This indicates that, almost all of the respondent physicians agree on the importance of training on ethics.

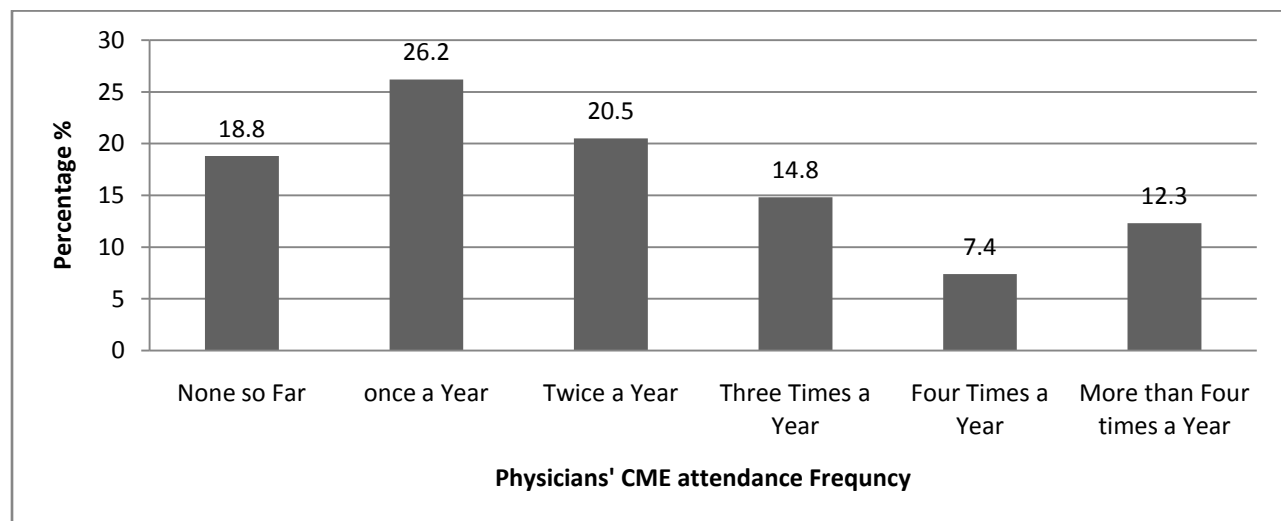
Figure 4.9. Attitude on the inappropriateness of restrictive policy



- On the inappropriateness of restrictive policy, one fourth of the respondents were neutral. And more than half of them did agree.

Participants also asked how often they attend pharmaceutical company organized CMEs and 32 (26.2%) of them attended once a year, 25 (20.5%) physicians twice per year, 18 (14.8%) Physicians attend three times a year, 23 (18.8%) attended none so far, 15 (12.3%) replied more than four times a year and about 9 (7.4%) attended four times a year. (Figure 4.10)

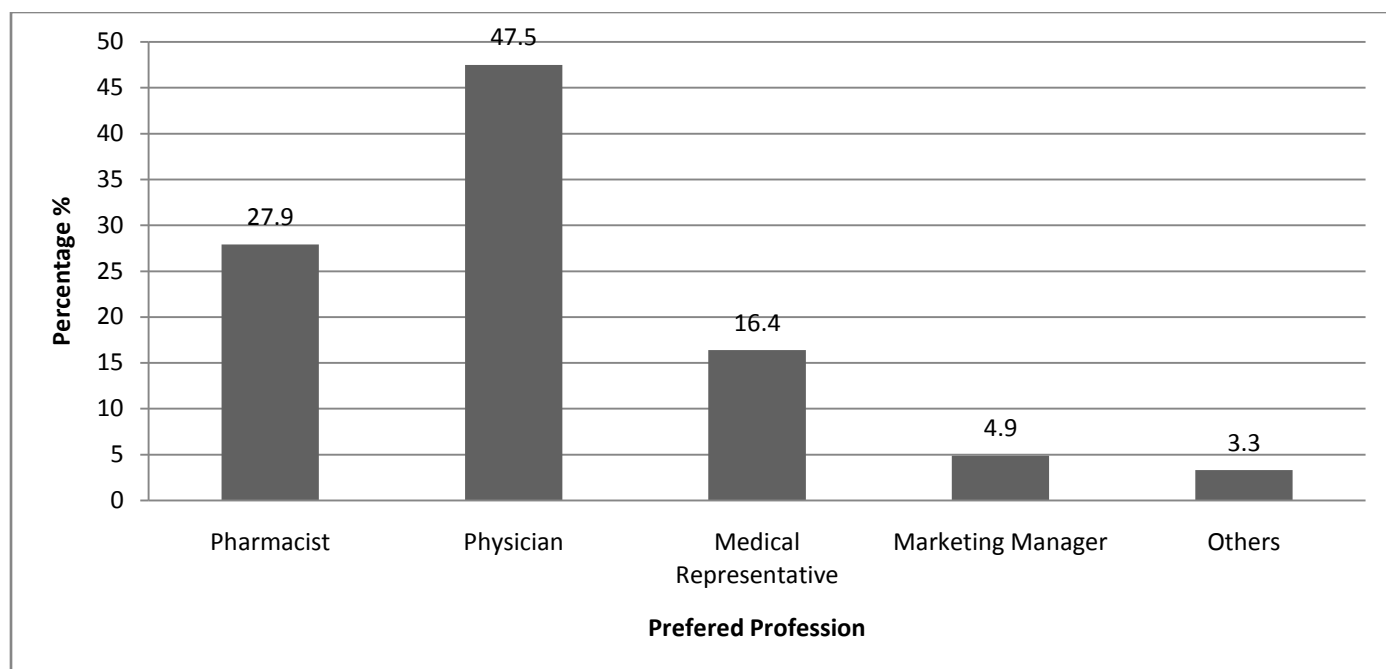
Figure 4.10. Frequency of CME attendance by physicians



➤ This implies almost one fourth of the respondents attend CME at list once a year.

Regarding the profession of the speaker participants asked to choose their preferences as a speaker on CMEs and majority of physicians, 58 (47.5%) preferred a physician, 34 (27.9%) physicians preferred pharmacist as a speaker, 20 (16.4%) preferred a medical representative as a speaker, 6 (4.9%) preferred marketing manager and the rest 4 (3.3%) physicians selected others. (Figure 4.11)

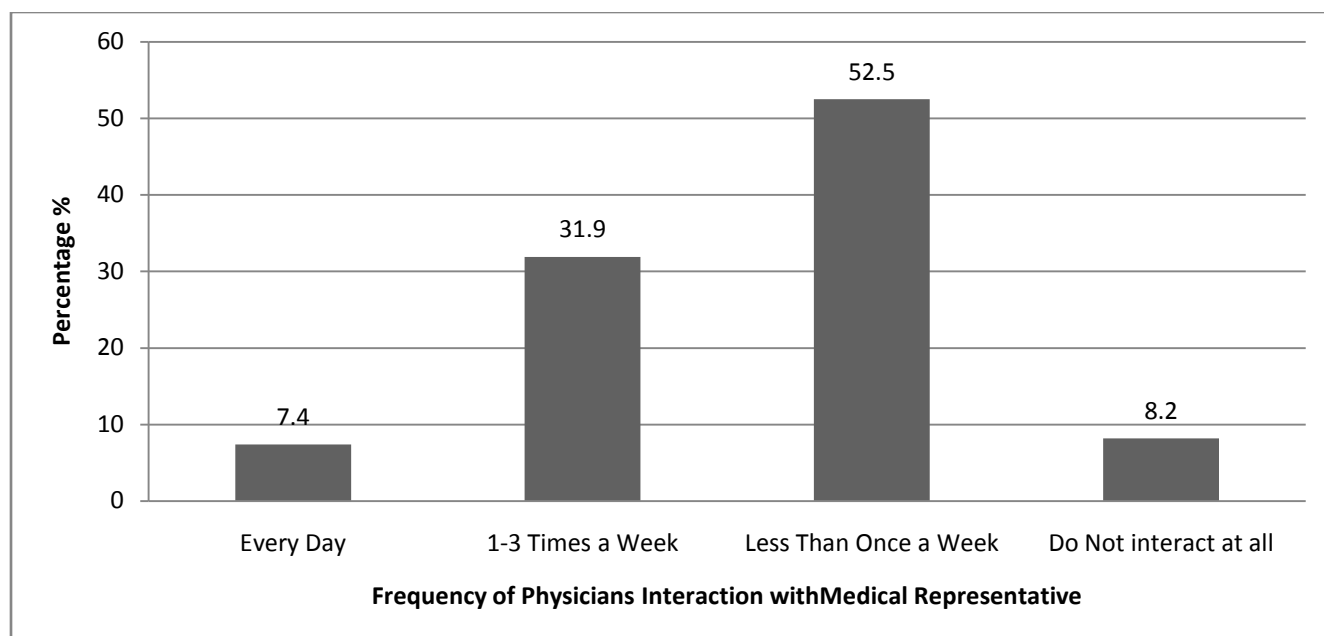
Figure 4.11. Profession of preferred speaker on CMEs



- Almost half of the physicians participated in the study prefer physician to be the speaker on CMEs.

Regarding the frequency of interaction of physicians with medical representatives participants were asked how often they interact with medical representatives. It was less than once per week for 64 (52.5%) of physicians, 1-3 times per week for 39 (31.9%) of physicians and every day for 9 (7.4%) of them. The remaining 10 (8.2%) respondents did not interact with medical representatives at all. (Figure 4.12)

Figure 4.12. Medical representative-physician interaction



- This indicates almost half of the respondent physicians interact with medical representatives less than once a week.

Participants were also asked to mention the materials they prefer to receive from medical representatives, and give the opportunity to choose more than one item and 83 (68.0%) reported that they would like to receive pocket treatment guides, 79 (64.8%) physicians mentioned that they like to receive journal article reprints, 63 (51.6%) participants reported that they prefer to get free medical samples, 65 (53.3%) physicians claimed that they prefer to accept books and 46 (37.7%) physicians preferred to receive stationeries. Beside the above mentioned items 33 (27.0%) physicians reported that they prefer to receive brochures and the rest 3 (2.5%) physicians reported that they prefer to get other materials. (Table 4.1)

Table 4.1. Physicians Promotional Items Preference (N=122)

Promotional Items	Specialty										
	GP	Internist	Surgeon	Gynecologist	Pediatrician	Orthopedic Surgeon	Dermatologist	Resident	Others	Total	Percentage (%)
Stationeries	12	6	2	3	6	1	4	10	2	46	37.7
Free Medical Sample	19	10	3	4	5	1	4	12	5	63	51.6
Pocket Treatment guide	26	14	2	8	9	0	6	16	2	83	68.0
Journal Article reprints	18	12	3	8	11	1	5	17	4	79	64.8
Books	17	9	3	6	10	1	6	11	2	65	53.3
Brochures	11	4	2	1	2	0	4	7	2	33	27.0
Others	0	0	0	0	2	0	0	1	0	3	2.5

- Pocket Treatment guide, Journal Article reprints, Books are the leading on Physicians Promotional Items Preference in descending order.

Physicians were asked about the promotional aids that they already got from pharmaceutical companies and give the opportunity to choose more than One Promotional Aids. 79 (64.7%) of them reported that they participated in product launch dinner. The other 61 (50%), 50 (40.9%), 49 (40.2%), 28 (22.9%) and 23 (18.9%) respondents reported to receive lunch or dinner invitation, meals at departmental conferences, CMEs sponsorship, Invitation to recreational outings and holiday gifts, respectively. Besides, 29 (23.8%) were received sponsorship either to attend international or local conferences While 15 (12.3%) choose others. (Table 4.2)

Table 4.2. Promotional aids physicians are getting (N=122)

Promotional Aids	Specialty										
	GP	Internist	Surgeon	Gynecologist	Pediatrician	Orthopedic Surgeon	Dermatologist	Resident	Others	Total	Percentage (%)
Meals at department conference	11	2	2	2	6	1	6	17	3	50	40.9
Product launch dinner	21	16	3	7	11	1	6	10	4	79	64.7
Invitation to social/recreational outings	6	8	0	3	4	1	1	4	1	28	22.9
Invitation to lunch or dinner	12	10	2	5	9	3	6	12	2	61	50.0
Sponsorship to attend CMEs	12	8	1	4	7	1	5	8	3	49	40.2
Sponsoring to travel & attend international conference	2	5	1	4	6	0	1	1	1	21	17.2
Sponsorship to travel & attend local conference	1	2	0	1	1	1	0	2	0	8	6.6
Holiday gifts	6	5	1	2	4	1	1	2	1	23	18.9
Others	4	0	1	2	0	0	0	7	1	15	12.3

- Product launch dinner, Invitation to lunch or dinner, Meals at department conference are the leading Promotional aids physicians are getting.

Besides the promotional materials other factors were also reported to affect physicians' prescription choice. The majority of respondents 107 (87.7%) confirmed that Price of the medicine can affect their prescription trend followed by 104 (85.2%) who mentioned Quality as a major factor. Side effects of the medicine, availability of alternative, past experience, the disease profile that affect their medication choice, country of the medicine origin and role models influence were also cited as factors that influence prescription behavior. (Table 4.3)

Table 4.3. Other factors that affect prescription trend (N=122)

Influential Factors	Specialty										
	GP	Internist	Surgeon	Gynecologist	Pediatrician	Orthopedic Surgeon	Dermatologist	Resident	Others	Total	Percentage (%)
Seniors/Specialists prescription trend	15	5	2	7	6	1	4	15	1	56	45.9
Quality of a medicine	27	16	5	10	13	2	7	19	5	104	85.2
Price of a medicine	30	15	4	11	12	1	7	23	4	107	87.7
Country of production	15	10	3	10	6	1	5	13	3	66	54.1
Disease profile	21	10	4	7	9	0	7	15	4	77	63.1
Past experience	19	11	3	10	11	1	5	17	4	81	66.4
Availability of alternatives	21	12	4	9	9	1	5	18	3	82	67.2
Side effects	25	13	3	7	10	1	7	16	4	86	70.5

- From Other factors that affect prescription trend, Price of a medicine and Quality of a medicine are on the top.

4.4 Influence of pharmaceutical promotion on prescribing behavior

The influence of promotional materials on physicians' prescription behavior was assessed by asking participants a set of questions about promotional materials that are being in use currently and give them the opportunity to choose more than one answer. When physicians were asked what materials do they think influence prescription choice, 52 (42.6%) of them reported that free medical samples have brand reminder effect and influence prescription choice. Stationeries, pocket treatment guides, brochures and journal article reprints were also mentioned by 43 (35.2%), 35 (28.6%), 23 (18.6%), and 19 (15.6%) of the respondents respectively to have brand reminder Prescription choice. Books were only mentioned by 11 (9.0%) to have brand reminder effect while the other 2 (1.6%) choose others. (Table 4.4)

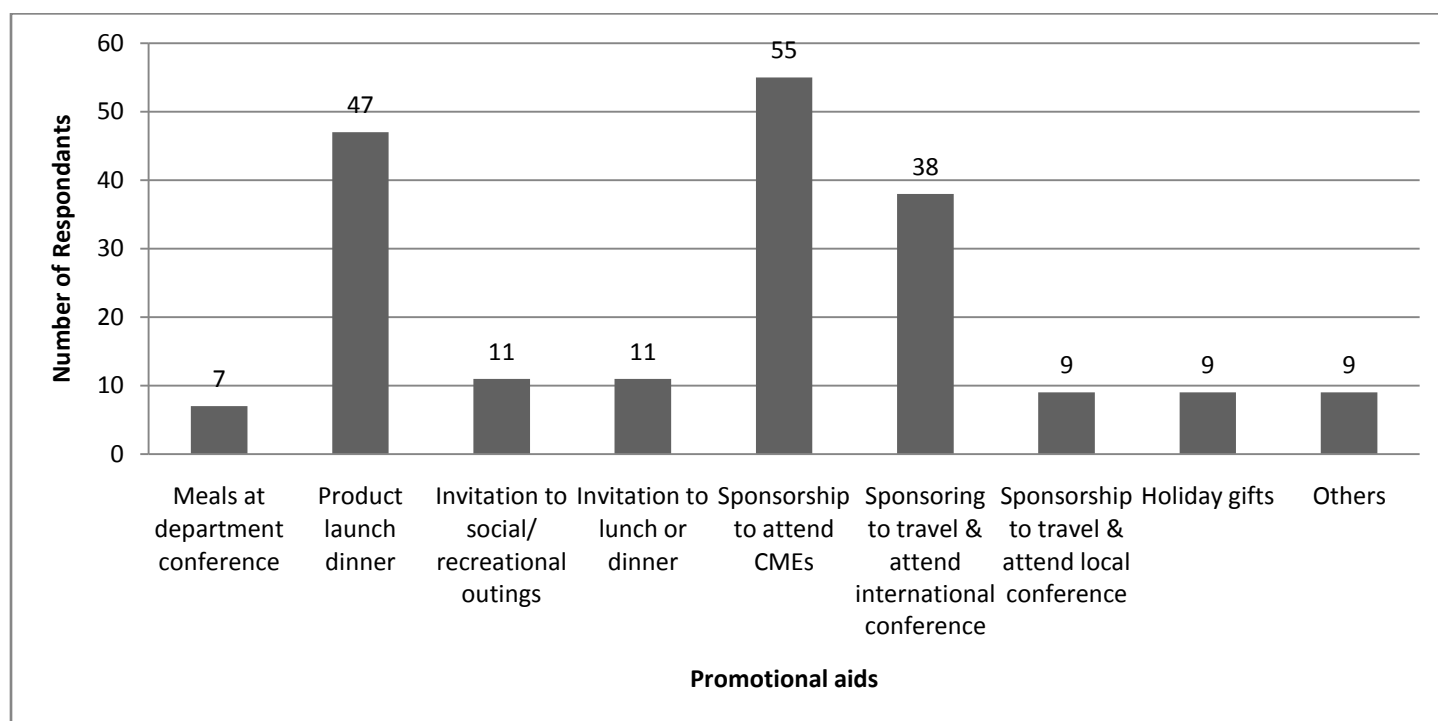
Table 4.4. Promotional items that influence physicians prescription behavior (N=122)

Promotional Items	Specialty										
	GP	Internist	Surgeon	Gynecologist	Pediatrician	Orthopedic Surgeon	Dermatologist	Resident	Others	Total	Percentage (%)
Stationeries	11	8	1	5	4	1	3	8	2	43	35.2
Free Medical Sample	15	8	2	6	5	1	2	11	2	52	42.6
Pocket Treatment guide	14	4	1	2	2	0	3	8	1	35	28.6
Journal Article reprints	5	2	2	1	3	0	2	4	0	19	15.6
Books	2	2	1	1	2	0	1	4	0	11	9.1
Brochures	7	3	1	3	2	1	1	4	1	23	18.9
Others	1	0	0	0	0	0	0	1	0	2	1.6

- Out of the above listed promotional items, Free Medical Sample has high potency to influence physicians' prescription behavior.

A question was also asked about promotional aids that can help to influence prescription behavior. And give them the opportunity to choose more than one answer. 55 (45.1%) physicians confirmed that attending CMEs can influence prescription choice. Being invited to product launch dinner, receiving sponsorship for international conference, invitation to lunch or dinner and invitation to recreational outings were mentioned to have influence prescription choice by 47 (38.5%), 38 (31.1%), 11 (9.0%) and 11 (9.0%) of the respondents respectively, While Sponsorship to local conference, Holiday gifts and Others chosen by 27 (22.2%) of the Physicians. (Figure 4.13)

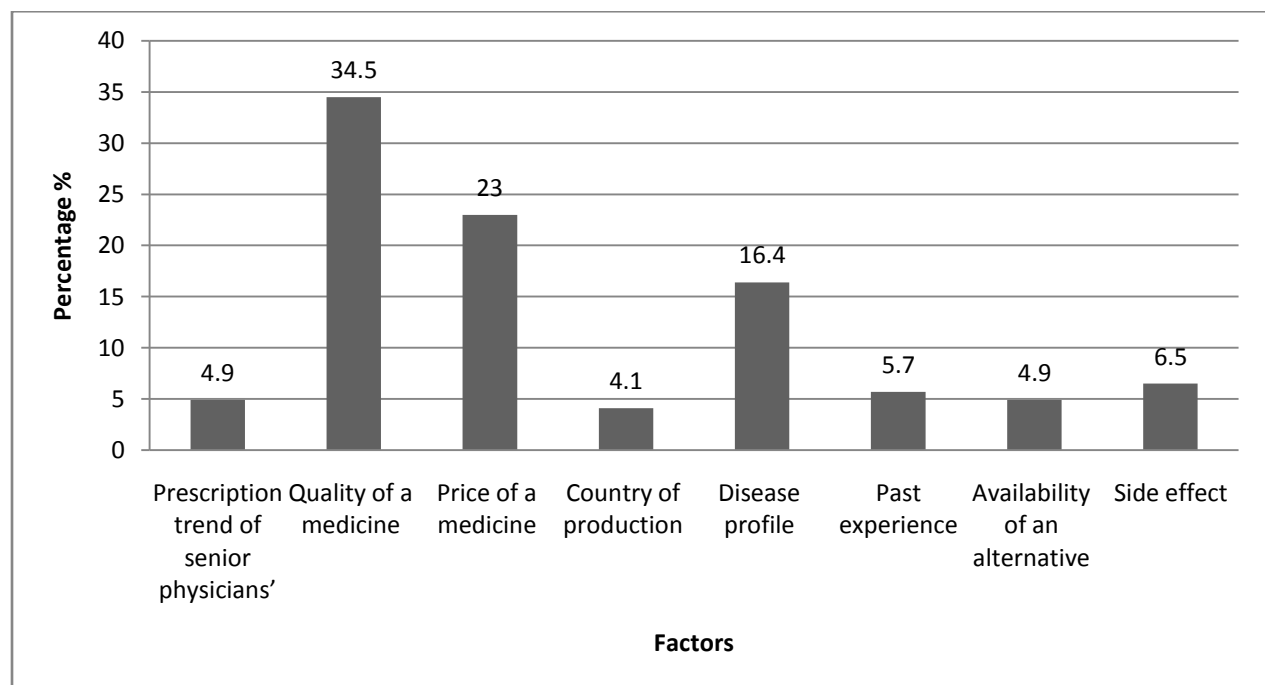
Figure 4.13. Promotional aids that influence prescribing behavior



Out of the above listed promotional aids, sponsorship to attend CMEs and product launch dinner has high tendency to influence prescribing behavior.

When physicians were asked about the most influencing factors other than promotional materials and aids, 42 (34.5%) admitted that quality of a medicine is the top priority in their medication choice, About 28 (23.0%) physicians reported that when they think of prescribing a drug the first thing that comes to their mind is its price. Another 20 (16.4%) participants mentioned that disease profile is the first thing that affect their prescription choice, 8 (6.5%) participants mentioned side effect of a drug is the influential factor in prescription choice and 7 (5.7%) physicians revealed that past experience has the highest priority in their prescription choice, 6 (4.9%) physicians' also admitted that the prescription trend of senior physicians' is the main factor that affect their medication choice, 5 (4.1%) physicians also mentioned that the country of production of a drug is an influential factor. About 6 (4.9%) physicians also mentioned that it is the availability of an alternative drug that guides their prescription choice. (Figure 4.14)

Figure 4.14. Most influential factors other than promotional material



- Quality of the medicine is the Most influential factors other than promotional material.

As shown below in Table 4.6; 43 (35.2%) of physicians Agreed on Participating in company sponsored CMEs does affect prescription decision. Regarding the effect of availability of promotional items having a role on prescription behavior 57 (46.7%) of the Physician agreed, While 65 (53.3%) physicians were agreed that it has an influence on their Prescription choice. Concerning the availability of free medical samples and its influence on prescription choice the 41 (33.6 %) physicians agreed and 50 (41.0 %) also agreed that free drug samples encourage trying the drug. Respondents were also asked about their opinion on promotional aids such as availability of Promotional aids and being invited to recreational events have an effect on Prescribing decision, 57 (46.7%) and 46 (37.6%) of the physicians agreed respectively while 50 (41.0 %) of the physicians agreed that visiting a pharmaceutical manufacturing plant and getting impressed by the facility may affect prescription decision.

Regarding the personality, knowledge, approach and frequency of visiting medical representatives' physicians 54 (44.3 %) and 51 (41.8%) of them agreed respectively that their prescription decision can be influenced by the activity of medical representatives. 61 (50.0 %) physicians were agreed that prescription drug promotion has a positive impact on physicians medication choice. 47 (38.5%) of the physicians agreed Prescription drug promotion should be encouraged while 15 (12.3%) of them disagreed and highly disagreed and 44 (36.1%) of the physicians agreed and highly agreed that prescription drug promotion does not interfere with ethical medical practices while 37 (30.3%) of them disagreed and highly disagreed. For full of physicians perspective on the above issues please refer the table below. (Table 4.5)

Table 4.5. Descriptive statistics for variables affecting prescription behavior (N=122)

Variables	N	Strongly Disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly Agree N (%)
Participating in company sponsored CMEs does affect prescription decision	122	13 (10.7)	27 (22.1)	28 (23.0)	43 (35.2)	11 (9.0)

Availability of promotional items does have a role in medication choice	122	4 (3.3)	11 (9.0)	19 (15.6)	57 (46.7)	31 (25.4)
Availability of promotional materials can influence prescription choice	122	4 (3.3)	7 (5.7)	20 (16.4)	65 (53.3)	26 (21.3)
The availability of free medical samples may affect prescription choice	122	12 (9.8)	25 (20.5)	24 (19.7)	41 (33.6)	20 (16.4)
Free drug samples encourage trying the drug	122	4 (3.3)	8 (6.6)	20 (16.4)	50 (41.0)	40 (32.7)
Availability of promotional aids does affect prescription decision	122	5 (4.1)	17 (13.9)	20 (16.4)	57 (46.7)	23 (18.9)
Pharmaceutical company sponsored entertainments/recreational events have something to do with prescription choice	122	8 (6.6)	23 (18.9)	24 (19.7)	46 (37.6)	21 (17.2)
If a physician is invited to visit a pharmaceutical manufacturing plant and get impressed by the facilities, he/she may favors the company product	122	5 (4.1)	10 (8.2)	29 (23.8)	50 (41.0)	28 (22.9)
The personality, knowledge, and approach of medical representatives might affect prescription decision	122	3 (2.5)	12 (9.8)	20 (16.4)	54 (44.3)	33 (27.0)
Frequency of medical representatives' visit has a role in brand reminding and influence prescription choice	122	1 (0.8)	7 (5.7)	29 (23.8)	51 (41.8)	34 (27.9)
Prescription drug promotion has a positive impact on physicians' medication choice	122	5 (4.1)	7 (5.7)	33 (27.1)	61 (50.0)	16 (13.1)
Prescription drug promotion should be encouraged	122	5 (4.1)	10 (8.2)	46 (37.7)	47 (38.5)	14 (11.5)
Prescription drug promotion does not interfere with ethical medical practice	122	12 (9.8)	25 (20.5)	41 (33.6)	34 (27.9)	10 (8.2)

4.5 Perception of physicians about the quality of promotional information

Physicians were asked about the quality of information they get from medical representatives and their response was measure based on Percentage.

Based on this scale, physicians were asked to rate the high quality of the content of company sponsored CMEs and 49 (40.21%) did not either agreed or disagreed on the quality of the contents. Only 11 (9.0%) of the physicians either disagreed or strongly disagreed on the high quality of pharmaceutical company CMEs.

Regarding the relevancy of the CMEs on disease profile, 47 (38.6%) physicians agreed that company sponsored CMEs help them to get relevant information. Significant proportion of respondents, 17 (13.9%) did not agreed on the relevancy of the information. With respect to receiving current and up-to-date information, 53 (43.4%) physicians agreed that participating in CMEs helped them to receive up-to-date information on medicines. About 8 (6.6%) of them were either disagreed or strongly disagreed on the helpfulness of participating in company sponsored CMEs to get up-to-date information. Almost half of them 58 (47.5%) were neither agreed nor disagreed on the accuracy and completeness of information they received from medical representatives. Only 36 (29.5%) were agreed on the accuracy and completeness of information they received. The majority of respondents 73 (59.8 %) agreed that the information from medical representatives is helpful in their medical practice. For instance, 72.1% of them were either agreed or strongly agreed that, the information they received is helpful on their Prescription choice.

Physicians were also asked a question that states prescription drug promotion help to update physicians' medication knowledge and 70 (57.9%) of them agreed that it helped them to update their medication knowledge. On the question on the usefulness of prescription medicines promotion to increase physicians' practical medication knowledge, 59 (48.4%) agreed that it helps to get practical knowledge about medicines. This is opposed by 15 (12.3%) of the respondents.(Table 4.6)

Table 4.6: Descriptive statistics for variables affecting quality perception (N=122)

Variables	N	Strongly Disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly Agree N (%)
The content of pharmaceutical Company sponsored CMEs are of high Quality	122	2 (1.6)	9 (7.4)	49 (40.2)	46 (37.7)	16 (13.1)
Company sponsored CMEs help to get relevant information on disease profile.	122	1 (0.8)	16 (13.1)	41 (33.6)	47 (38.6)	17 (13.9)
Participating in pharmaceutical company sponsored CMEs helps to get up-to-date information on drugs	122	3 (2.5)	5 (4.1)	13 (10.7)	53 (43.4)	48 (39.3)
Information from medical representatives is accurate, up-to-date and complete	122	4 (3.3)	19 (15.6)	58 (47.5)	36 (29.5)	5 (4.1)
The information from medical representatives is helpful in medical practice	122	2 (1.6)	6 (4.9)	22 (18.1)	73 (59.8)	19 (15.6)
Information from medical representatives can help in prescription choice	122	2 (1.6)	5 (4.1)	27 (22.2)	72 (59.0)	16 (13.1)
Prescription drug promotion helps to update physicians medication knowledge	122	3 (2.5)	6 (4.9)	27 (22.1)	70 (57.4)	16 (13.1)
Prescription drugs promotion help to get practical knowledge about drugs	122	4 (3.3)	11 (9.0)	33 (27.0)	59 (48.4)	15 (12.3)

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

This study was conducted to investigate the influence of pharmaceutical promotion on physicians' prescribing behavior. The study results indicate that the current promotional techniques that are in use have a great role in influencing physicians' prescription decision. However, the usefulness of these techniques is not similar. The effect depends on the situation. The findings of study revealed that physicians' prescription decision can be affected by availability of promotional materials, as well as other factors such as, quality and price of the drug.

In this study the term promotional items and promotional aids are used to represent promotional materials. And looking at the results obtained for promotional materials and methods most physicians believe that their prescription behavior is affected by the activity of medical representatives and pharmaceutical companies. The attitude of most physicians is almost similar on the importance of CMEs and trainings on physician-pharmaceutical industries. Regarding CMEs physicians might believe that they get new information on drugs and current treatment approaches and that is why their response towards the usefulness of CMEs is positive; however, concerning their agreement on the ethical training on physician-pharmaceutical industries might be due to the unethical current promotional activity of some pharmaceutical companies. From this research findings it is obvious that pharmaceutical promotion influence physicians prescribing behavior but physicians agreement on the proper way of interaction with pharmaceutical industries might be for the win-win interaction because they believe that their prescribing behavior is affected but the effect need to be in such a way that does not harm the patients' condition. They also do not want to restrict medical representatives because they believe that they get valuable information from them.

The finding of this study showed that promotional materials have a strong effect on influencing physicians' prescription behavior; however, the degree of influence depends on the kind of materials that are used for promotional purpose. Despite the fact that promotional materials have

an influence on physicians' prescription behavior the perception of physicians is different from those of pharmaceutical companies. Companies are giving promotional materials to remind the name of their brand but physicians need materials that help their medical practice and at the same time remind them the brand. For example, the result of this study showed that physicians prefer to receive pocket treatment guide followed by journal article reprints and books but according to this study findings, free medical samples have the highest influence on prescription behavior followed by stationeries. The possible explanation for this difference might be due to physicians' continuous exposure to the brand name while using samples and stationeries. Samples are readily available for use and if the physician is happy about the outcome of the drug after trying it he/she might consider the drug for next time and stick to it. Regarding the stationeries, these are materials that the physician can use it in his/her day to day activity and the probability of seeing the brand name is higher, and when stationeries are combined with other promotional techniques the influence can be very high.

Findings of this study also revealed that there is a difference in promotional items preference in relation to specialty of physicians. GPs are the one who like to receive materials compared to other specialty irrespective of the kind of materials. However, referring to the specific materials they prefer to receive pocket treatment guide has the highest priority, where free medical samples, journal article reprints, books and stationeries are the materials that physicians' need to get them from pharmaceutical companies. In contrary to GPs orthopedic surgeons are the one who usually do not want to get promotional materials. Next to GPs residents are also the one who need to receive promotional materials at a higher proportion. The promotional materials preference order of GPs and residents is almost similar. The possible explanation for this might be that residents are the one who were GPs before few years and the character they had while they were GPs might be reflected in their current status. The only difference in the order of preference is that residents' top priority is journal reprint article whereas the GPs priority is pocket treatment guide. The reason might be that residents are in their specialty training program and are interested in new findings but GPs are comfortable to stay with treatment guides. The study result also showed that internists are interested in pocket treatment guides. The reason might be that after finishing specialty program these internists might not be active in reading new findings; therefore, they prefer on experts recommendation that is published on treatment guides.

Regarding the effect of promotional items on physicians' prescription behavior still GPs have the leading number followed by residents who believe that promotional items influence their prescription choice. In this regard both residents and GPs agree that free medical samples have the highest influence on their prescription behavior.

In addition to promotional items that come with the brand name of products or the company name, pharmaceutical companies use other methods to promote their brands. Among these methods CMEs, sponsorship of conferences, holiday gifts, product launch dinner and social entertainments are the commonest one. This study showed that physicians are usually participating in product launch dinner. This might be due to the pharmaceutical companies' effort to introduce a new product. In such kinds of activities it is easier for companies to invite all prospect physicians that might need information about a given drug. Physicians also can be invited to lunch or dinner, meals at department conferences or to attend CMEs. These activities are mostly followed after a new product is launched. But regarding the lunch invitation, it could be pre or post launch activity to get information from prescribers about the drug. Despite the fact that physicians get all these materials their prescribing behavior is influenced by few. The study findings showed that the most influencing promotional aids are attending CMEs followed by product launch dinner. Despite the fact that pharmaceutical companies are investing on promotional materials, the findings of this study showed that there is a variation on what physicians expect to receive and what companies believe physicians value.

Regarding the promotional aids, GPs are the highest recipients followed by residents and internists. GPs and internists are the major participant in product launch dinner. In this regard, pediatricians are also having a major participation. Pediatricians and internists are the focal points for international congress participations. The findings of this study showed that GPs believe that attending CMEs affect their prescription choice. Though pediatricians and internists are mostly invited to international conference their attitude on the influence of prescription trend is different.

Findings of this study also revealed that in addition to the promotional materials, prescription behavior of physicians is also affected by other factors such as quality of medicine, price of medicine, side effect of the drug, availability of alternative drugs, past experience, disease profile, prescription trend of seniors and country of production. The results of this study revealed

that quality of a medicine is the major factor followed by price of a medicine. The least influential factor physicians may consider is country of production.

This study also revealed that GPs and residents are the one who are most influenced by the prescription trend of their instructors and senior specialists. The probable justification for this finding is that residents are under the supervisions of seniors and they might accept the recommendations of their seniors, and regarding GPs a similar justification might apply because GPs were working under the supervisions of their instructors and seniors when they were at medical school and their prescription choice might be dependent on seniors' recommendation after they left school. At the same time GPs and residents might believe that their seniors know more because of the accumulated knowledge through experience and continuous reading. The finding of this research revealed that influence of these factors depends on the specialty of physicians.

Quality of a medicine is a major concern for internists, pediatricians and surgeons. This might be due to the consequence of the illness. For example, surgeons are dealing with very sensitive procedure and to facilitative wound healing and improve patients health they might prefer the best quality of a medication. In general terms the result of this study showed that in addition to promotional materials price and quality of a drug has a great role in prescription choice. According to this result it is obvious that promotion of prescription drug influences physicians' prescribing behavior in a positive way.

Regarding the frequency of the visit, personality, approach, knowledge and approach of the medical representatives on the physicians' prescription decision, the study results showed that it has an influence. The possible explanation for this result could be that if a medical representative is a well-trained, knowledgeable and having a professional business approach, physicians always expect something valuable from such kind of medical representative and they could not wait to see him/her because he/she can save time by giving appropriate and timely information about drugs.

The results of this study also revealed that if a physician is invited to visit a manufacturing site of a pharmaceutical company and get impressed by the facility and process, she/he might consider the product for prescription. This might be due to the perception that if the facilities are technologically advanced and the process is up to the standard, the product can be good. Another

possible explanation is that physicians might have heard from mass media that some unethical companies utilize poor facilities and procedures and produce poor quality products.

Regarding the quality of information medical representatives or pharmaceutical companies deliver to physicians, the results were consistent among all physicians, and most physicians agree that the information they get from medical representatives is somewhat valuable.

Regarding the impact of background variable on prescription trend of physicians, a significant result was found only for few variables. The findings of this study revealed that there was a significant association for gender in relation with influence of CMEs on prescription decision, age in relation with influence of prescription drug promotion in relation with influence of prescription drug promotion. The association found might be statistically significant but it might not be significant practically because the number of male participants is more than four times of female participants. Despite these significant results the overall result showed that promotion affected prescription behavior of all respondents in a similar fashion. But significance difference observed among the different age groups can be acceptable because there were variety of participants with different attitude about the importance of promotion.

5.2 Conclusion

The study findings showed that prescription drug promotion can affect prescribing behavior of physicians despite of their socio-demographic deference. In addition to the promotional materials other factors such as price and quality of a medicine, disease profile, side effects were shown to affect prescription trend of physicians.

The findings also showed that the influence of promotional materials depend on different factors such as the specialty of physicians and seniority. Despite the fact that promotional materials affect prescription trend of physicians and companies are still investing to make available these materials, there is a slight difference between what physicians wish to receive and what companies think can influence prescription trend of physicians. This is an indication that companies needs to understand what is very important to physicians and what is really very critical in influencing physicians' prescription behavior.

The research findings also showed that the role of medical representatives is higher in the pharmaceutical industry. Therefore, to benefit from the involvement of medical representatives an employer needs to train its sales people in such a way that can bring a good company image and better sales. Employees' emotional involvement can be improved by motivating; empowering and letting them develop good relationship with their customers. The study results indicate that the personality and visit of a medical representative affect physicians' prescription pattern. This can lead us to understand the appropriateness of a close follow up of potential customers. This is an indication of the importance of Key Account Management (KAM) in the pharmaceutical market.

In addition to the promotional materials, the findings of the study showed that physicians' value information from medical representatives and that is why they use it for prescription decision. The study results also proved that the socio-demographic characteristic of respondents has little role in prescription decision. And this indicates that pharmaceutical companies can use almost similar strategy for all physicians.

5.3 Recommendations

Based on the study findings the following recommendations can be suggested:

- ❖ Pharmaceutical companies need to understand what physicians value most and address that need in a more economic and ethical manner.
- ❖ Pharmaceutical companies need to train their medical representatives about their products and professional ethics.
- ❖ Pharmaceutical companies need to pay attention to other factors such as price, quality and other variables related to their products.
- ❖ Pharmaceutical companies need to invest on CMEs and relationship management so that both the physicians and pharmaceutical companies can benefit from the interaction.
- ❖ Pharmaceutical companies need to use ethically acceptable promotional materials and methods.
- ❖ Pharmaceutical companies, regulatory authorities and customers need to work hand in hand for the benefit of the patient.
- ❖ Pharmaceutical companies need to balance the information they use during one-on-one or CMEs presentations so that they can help physicians get appropriate information that can address their patients' problem, and on top of that if physicians get valuable and trustworthy information from medical representatives, they will have positive perception about medical representatives and value the information they get.
- ❖ Regulatory authorities need to follow the ethical practice of pharmaceutical promotion.
- ❖ Further studies need to be conducted to strengthen the findings of this study.

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Appendix – I: Questionnaire

ADDIS ABABA UNIVERSITY SCHOOL OF COMMERCE Masters in Marketing Management Program

Self-administered Questionnaires for data requirement

Dear Respondent

My name is Samrawit G/egziabher. I am a Masters program student at Addis Ababa University school of commerce in Marketing Management Program; I am doing a research on influence of prescription drug promotion on prescribing behavior of Physicians practicing in Addis Ababa Green Licensed private hospitals. The purpose of this questioner and your answers is to help me understand the effect of prescription drug promotion on physicians' prescribing behavior and to evaluate what mixes of promotional techniques are appropriate and most ethical to be used for the maximum benefit of patients.

Therefore, your answer will be used for academic purpose, Any information collected in this study will be granted with full confidentiality. Hopefully you would help me to answer the questions freely and openly. Thank you for your cooperation.

For any queries, call me at +251 913600524.

Part I: Demographic Characteristics

Please provide your background information under the following headings.

1. Gender

Male ☐

Female ☐

2. Age

<31 ☐

31-40 ☐

41-50 ☐

51-60 ☐ >60 ☐

3. Country of First Degree Education

Ethiopia ☐

Outside Ethiopia ☐

4. Country of Specialty Program

Ethiopia ☐

Outside Ethiopia ☐

Not Applicable ☐

5. Specialty

Internal medicine ☐

Surgeon ☐

Orthopedics ☐

Pediatrics ☐

Gynecologist ☐

Dermatologist ☐

General Practitioner ☐

Resident ☐

Other ☐

6. Year of practice

<5 ☐ -10 ☐

11-15 ☐

16-20 ☐

>20 ☐

Part II Questions concerning CME, Ethics and Promotional method

Please tick in boxes numbered from 1 to 5 for the Question 1-3 in the table based on your rating. 5- Strongly agree, 4- Agree, 3- Neutral, 2- Disagree, and 1- Strongly disagree.

No	Description	5	4	3	2	1
1	Participating in CMEs organized by pharmaceutical companies is helpful					
2	Training on ethics of physician-pharmaceutical industries relationships are very important					
3	A policy that restricts interaction of medical representatives with physicians is inappropriate					

Please answer the below by choosing the best according to the level of the effect on your prescribing decision.

4. How often did you attend CMEs organized by Pharmaceutical companies per year?

Once ☐ Twice ☐ Three times ☐
 Four times ☐ Greater than four times ☐ None ☐

5. Which Profession do you prefer as a speaker on CMEs?

Pharmacist ☐ Physician ☐ Medical Representative ☐
 Marketing Manager ☐ Other ☐

6. How often did you interact with medical representatives?

Less than Once per week ☐ 1-3 times per week ☐
Every day ☐ Do not interact at all ☐

7. What promotional items do you usually prefer to receive from medical representatives?

(Please check all that apply)

Stationeries ☐ Free medical samples ☐ Books ☐
Pocket treatment guide ☐ Journal article ☐ Brochures ☐
Others ☐

8. Have you ever got one of the following promotional aids from pharmaceutical companies? (Please check all that apply)

Product launches dinner ☐ Invitation to social or recreational outings ☐
Invitation to lunch or dinner ☐ sponsoring to attend CMEs ☐
Holiday gifts ☐ Sponsoring for travel to international conference ☐
Meals at Departmental Conference ☐ sponsoring for travel to a local conference ☐
Others ☐

9. Which of the following factors have an impact on prescription choice? (please check all that apply)

Seniors/Specialists prescription trend ☐ Quality of medicine ☐ Price of medicine ☐
Country of Production ☐ Disease Profile ☐ Past experience ☐
Availability of alternatives ☐ Side affects ☐

Part III Questions related to variables affecting prescribing behavior

Please answer the below by choosing the best according to the level of the effect on your prescribing decision.

1. Which of the Below Listed Promotional Materials have an influence on Brand reminder and prescription choice? (Please check all that apply)

Stationeries	☐	Free medical sample	☐	Pocket treatment Guide	☐
Books	☐	Brochures	☐	Journal Article Reprints	☐
Others	☐				

2. Which of the Below Listed Promotional aids have more influence on prescription choice? (Please check all that apply).

Product launches dinner	☐	Invitation to social or recreational outings	☐
Invitation to lunch or dinner	☐	sponsoring to attend CMEs	☐
Holiday gifts	☐	Sponsoring for travel to international conference	☐
Others	☐	sponsoring for travel to a local conference	☐
		Meals at Departmental Conference	☐

3. What is the most influential factor other than promotional materials for prescription choice?

Seniors/Specialists prescription trend	☐	Quality of medicine	☐	Price of medicine	☐
Country of Production	☐	Disease Profile	☐	Past experience	☐
Availability of alternatives	☐	Side affects	☐		

Please rate the following accordingly

No	Description	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	Participating in company sponsored CMEs does affect prescription decision					
2	Availability of promotional items does have a role in medication choice					
3	Availability of promotional materials can influence prescription choice					
5	The availability of free medical samples may affect prescription choice					
6	Free drug samples encourage trying the drug					
7	Availability of promotional aids does affect prescription decision					
8	Pharmaceutical company sponsored entertainments/recreational events have something to do with prescription choice					
9	If a physician is invited to visit a pharmaceutical manufacturing plant and get impressed by the facilities, he/she may favors the company product					
10	The personality, knowledge, and approach of medical representatives might affect prescription decision					
11	Frequency of medical representatives' visit has a role in brand reminding and influence prescription choice					
12	Prescription drug promotion has a positive impact on physicians' medication choice					
14	Prescription drug promotion should be encouraged					
15	Prescription drug promotion does not interfere with ethical medical practice					

Part IV Questions related to variables affecting quality perception

Please rate the following accordingly

No	Description	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	The content of pharmaceutical Company sponsored CMEs are of high Quality					
2	Company sponsored CMEs help to get relevant information on disease profile					
3	Participating in pharmaceutical company sponsored CMEs helps to get up-to-date information on drugs					
4	Information from medical representatives is accurate, up-to-date and complete					
5	The information from medical representatives is helpful in medical practice					
6	Information from medical representatives can help in prescription choice					
8	Prescription drug promotion helps to update physicians medication knowledge					
9	Prescription drugs promotion help to get practical knowledge about drugs					

