



**ST.MARY'S UNIVERSITY  
SCHOOL OF GRADUTE STUDIES**

**ASSESMENT OF THE EFFECT PRESCRIPTION DRUG  
PROMOTION ON PHYSICIAN PRESCRIBING  
BEHAVIOUR PRACTICING IN ADDIS ABABA.**

**BY: ADIAM BIZUAYEHU**

**SGS/0075/2006**

**ADDIS ABABA**

**ETHIOPIA**

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**A THESIS SUBMITTED TO ST.MARY'S UNIVERSITY,  
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**ST.MARY'S UNIVERSITY**  
**SCHOOL OF GRADUTE STUDIES**  
**FACULTY OF BUISNESS**  
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**PRACTICING IN ADDIS ABABA.**

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## **LIST OF ABBREVIATIONS (ACRONYMS)**

CME	Continuing Medical Education
DTC	Direct to Consumer
DTP	Direct to Physician
FDA	Food and Drug Administration
FMHACA	Food, Medicine and Healthcare Administration and Control Authority
GP	General Practitioner
KAM	Key Account Management
KOL	Key Opinion Leader
MD	Medical Doctor
NDP	National Drug Policy
NGO	Non Governmental Organization
NHP	National Health Policy
OTC	Over-the-Counter
R&D	Research and Development
SOP	Standard Operating Procedure
WHO	World Health Organization

## **Abstract**

*All over the globe pharmaceutical enterprises are using different promotional techniques in order to get Physicians' attention for their products. 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 and their impact on prescribing behavior. Methodology used was using questionnaire tool to collect data and analyze, where a set of self-administered semi-structured questionnaires were distributed to practicing physicians. The findings revealed that the different promotional techniques that pharmaceutical companies are using have an effect on the physicians' prescription decision. However, the level of effect depends on factors such as practice setting, price and quality of the drug, specialty of the physician, and other factors related to the characteristics physicians and working environment. The study also revealed that physicians have a positive perception about the information they have got from medical representatives. However, physicians would like to participate on training regarding physician-industry interaction. 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 a Qualitative research, exploring in more depth people's feelings and views about medicines promotion.*

**Key terms:** *Medical representative, pharmaceutical promotion, pharmaceutical industry, Physician, prescriber, prescription, prescription behavior, prescription drug, promotion, Promotional material*

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# CHAPTER ONE

## INTRODUCTION

### 1.1. Back Ground of the Study

It is ever more important to understand the effects that drug promotion has on prescribing and the use of medication given the growing amounts of money companies are devoting to this activity. In 2009, 3.9 billion prescriptions drug were dispensed in the US alone and US pharmaceutical companies made US\$300 billion in sales revenue. Every year, a large proportion of this revenue is spent on drug promotion. In 2004, for example, a quarter of US drug revenue was spent on pharmaceutical promotion (Geoffrey K. Spurling, Peter R. Mansfield, Brett D. Montgomery, Joel Lexchin, Jenny Doust, Noordin Othman, Agnes I. Vitry 2010.).A prescription drug is a medication that can be supplied only with a written instruction (“prescription”) from a physician or other licensed healthcare professional (Geoffrey K. Spurling et Al, 2010).The world health organization defines Promotion on its Ethical Criteria for medical drug promotion as "promotion" refers to all informational and persuasive activities by manufacturers and distributors, the effect of which is to induce the prescription, supply, purchase and/or use of medicinal drugs (WHO,1988) .In prescription drug promotional practice, 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 J, 2004).

Companies are making an effect on the decision maker either directly or indirectly. Promotion of prescription drug 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 pharmaceutical companies who are active in promotion of prescription drugs are very few. Formerly, only few generic and branded multinational companies were involved in promotion of prescription drug and because of this, the number of medical representatives is 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. Though it has not been too long since pharmaceutical promotion is introduced in Ethiopia, its overall impact on prescribing decision is a vital issue to research. In Ethiopia, number of sales representatives and promotional activities are growing from day to day, on the contrary ethical guidelines regarding promotion are little or lacking. Sales representatives frequently use various promotional mixes. These include One to one sales presentation of pharmaceutical company Product, medical journals, KOL(key opinion leader) advisory, sponsorship of CME(continuous medical education) activities, medical training at work place and scientific brochures. It is believed that the activity of pharmaceutical companies affects 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.

## **1.2. Definition of Key Terms**

*Key opinion leader*-or "thought leaders", are respected individuals, such as prominent medical school faculty, who influence physicians through their professional status. Pharmaceutical companies generally engage key opinion leaders early in the drug development process to provide advocacy and key marketing feedback.

*Continuing medical education*-refers to a specific form of continuing education that helps Those in the medical field maintain competence and learn about new and developing areas of their field. These activities may take place as live events, sponsored symposia, written publications, online programs, audio, video, residency, fellowships Formats Lectures, seminars, refresher courses, workshops or other electronic media. Content for these programs is developed, reviewed, and delivered by faculty who are experts in their individual clinical areas.

*Prescribe* - To order a medicine or other treatment.

*Sample*- is a medicine which is a representative part taken to typify the whole.

*Medical representative*- Is a professional who is represented by drug manufacturer to generate prescriptions by promoting medicines.

### **1.3. Statement of the Problem**

These days the pharmaceutical industry is spending a lot of money on promotion as compared to the money budgeted for Research and Development. Its impact mainly affect prescribing behavior of doctors which intern is associated with change of attitude, preference of source of information and over all typical Pharmaceutical companies in the United States spent about US\$57.5 billion, or 24.4% of their revenue, on promotion in 2004. One estimate of total promotional expenditure in France for 2004 is €2,908 million (12.2% of revenue). However, another estimate is that pharmaceutical detailing cost €3,300 million and accounted for 75% of the overall cost of promotion in that year making promotion 17.3% of revenue. Expenditure on promotion is aimed at maximizing returns for the corporation and shareholders (Geoffrey K. Spurling et al, 2010).

For example in 2002, almost US\$21 billion was spent on promotion in the USA, including over US\$2.6 billion on direct-to-consumer Advertising (DTCA) (Peay, Marilyn Y.peay., et al 2005).In Canada in 2000 there were over 3.4 million visits by sales representatives to doctors, leaving behind 21.5 million drug samples and in the USA pharmaceutical companies organized over 300, 000 events for doctors.

Cost of treatment is related to pharmaceutical promotion because given the fact that pharmaceutical industries spend billions of dollars for promotional materials including samples, high sponsoring costs for CMEs and the like it's logical to say that the variable costs of promotion will be a burden on the final consumers that is the patient/public. So due to broad cost for promotion on the available medicines is a potential threat for the negligence of Research and Development projects which have an important impact on the development of new, innovative and lifesaving medicines. A high cost on promotion causes a constraint of budget for R&D.

## **1.4. Research Question of the Study**

- How does the pharmaceutical promotion materials/methods influence the Physicians' prescribing behavior?
- What is the perception of physicians on the quality of promotional information they received from medical representatives?
- What is the impact of samples on prescribing behavior of physicians?
- What is the impact of sponsored CMEs on prescribing behavior of physicians?

## **1.5. Objective of the Research**

### **1.5.1. The general objectives of this research are:**

- ❖ To methodically assess the Effect of Prescription drug promotion on the physician prescribing behavior practicing in Addis Ababa.

### **1.5.2. The Specific objectives of this research are:**

- ❖ To identify pharmaceutical promotion materials/methods that influence the Physicians' prescribing behavior.
- ❖ To assess the perception of physicians on the quality of promotional information they received from medical representatives.
- ❖ To evaluate if Samples have an impact on prescribing behavior of physicians.
- ❖ To see if sponsored CMEs have an impact on prescribing behavior of physicians.

## **1.6. Significance of the study**

The significance of the study is indicated as below for the following different stakeholders.

- For the regulatory authorities, the study will help to understand the current practice and give direction if there is an acceptable ethical practice.
- For Pharmaceutical companies, the study will help to know if the techniques and tools used in promotion are effective and efficient or if there is a need for different approach.
- 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.
- The findings of this study also will give a clue to conduct further investigation in the area and evaluate the ethical practices of prescription drug promotion.

## **1.7. Scope of the Study**

The study only used semi structured questionnaire to collect the data. The data was collected from 12 November 2015-11 December 2015. The findings will not indicate the situation for pre and post the time frame of data collection. Since the study was conducted in Addis Ababa only, the results may not represent the Promotional practices in other parts of the country.

## **1.8. Limitations of the Study**

The study was conducted on licensed physicians who were exposed to promotion and other information from pharmaceutical companies using self-administered semi structured Questionnaire. Moreover, it is limited only to practicing Physicians at the time of the study and may not show the practices of other health professionals who have the power of prescribing. Furthermore, since the study was done by self-administered Questionnaire, it may be liable to social desirability bias. Besides, the nature of the study which is cross-sectional survey indicates only the behaviors and practices that are predominant at the time of the study though the study

would have been in best if done by longitudinal study, Time and budget were another big Limitations to conduct in-depth investigation on physicians' prescription behavior.

### **1.9. Organization of the paper**

The study is organized in to five chapter. Chapter one deals with background of the study, definition of key terms, and 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 design, sampling technique, source of data, instrument and procedures of data collection, methods of data analysis and ethical considerations. The fourth chapter focuses on demographic variables of the respondents, data analysis and interpretation. The final fifth chapter consists of summary of the major findings, conclusions and recommendations.

**CHAPTER TWO**  
**REVIEW OF RELATED LITERATURE**  
**PROMOTION INTRODUCTION**

For any kind of product, there are many approaches for marketing but the most successful strategy is the one that is more focused on the target audience and brand value. Pharmaceutical companies are using various kind of promotional approach to sell their products that is in-line with their marketing strategy. Traditionally, marketing strategies have been built around the four Ps; i.e., the kind of Product the company is offering, the Price the company is charging for the product, a Place that the product will be distributed and more accessible to consumers, and Promotion of the product to communicate the feature and benefits of the product to the consumers. But, in the pharmaceutical industry two more Ps are relevant for the business; these are the Political relationship with the organization responsible for the payment and the Patients who have increasing economic input to their health and access to information (Edwards, Fox & Stonier, 2010).

Pharmaceutical manufacturers particularly prescription drug manufactures seek to establish close relationships with physicians to provide information about new products and to encourage increased prescription of their products. To stand-in these relationships, companies use different promotional techniques and approaches; for example, companies offer free meals, financial support for conferences, free drug samples and various items of both clinical and non-clinical relevance. Pharmaceutical marketing is not solely restricted to these kinds of generosity, however there is evidence that shows where CME is funded by pharmaceutical companies. (Edwards and Ballantyne, 2009).

The pharmaceutical industry claims that drug promotion—visits from pharmaceutical sales representatives, advertisements in journals and prescribing software, sponsorship of meetings, mailed information—helps to inform and educate healthcare professionals about the risks and benefits of their products and thereby ensures that patients receive the best possible care. Physicians, however, hold a wide range of views about pharmaceutical promotion some see it as a useful and convenient source of information. Others deny that they are influenced by pharmaceutical company promotion but claim that it influences other physicians. Meanwhile,



several professional organizations have called for tighter control of promotional activities because of fears that pharmaceutical promotion might encourage physicians to prescribe inappropriate or needlessly expensive drugs .(Geoffrey K. Spurling Et Al, 2010).

## **2.1. Perception Towards Promotion**

The evidence is not conclusive, there is a strong association between reliance on promotion and less appropriate overall use of prescription drugs (Wazana A., 2000). Heavy promotion of new drugs leads to widespread prescribing and use before the safety profile of these products is fully understood. Newer, more expensive medicines displace older, less costly ones without any evidence of an improvement in therapeutic outcomes (Lexchin J., 2002).

In about 74% of the emergency medicine residents surveyed felt that sales representatives sometimes crossed ethical boundaries by giving gifts. 14% of internal medicine residency programmed directors reported observing unethical activities by sales representatives (Keim et al, 1993), these included detailing in clinical areas, making false claims, giving monetary gifts, and conducting unauthorized studies. A study by (Poirier et al, 1994) of people who make decisions about formularies in US private hospitals; found that most (93%) felt that providing non-monetary benefits to doctors to influence formulary decisions or product use was unethical. (Ahmad and Bhutta, 1990) found 95% of the doctors they interviewed in Karachi relied upon industry promotional material as their main source of information about drugs. They also found extremely high levels of irrational prescribing and dispensing for children.

## **2.2. Use of promotion as a source of drug information**

A study done by Tomson and Angunawela described heavy reliance on Pharmaceutical companies as sources of information by Physicians working in a peripheral clinic in Sri Lanka (Tomson and Angunawela, 1990). In contrast, there was low use of commercial information by in health professionals and health professional faculty members reported Nigeria (Osiobe, Stephen A., 1988).

### **2.3. Evidence of negative impact of promotion**

A 1982 study is very commonly quoted as evidence of the negative impact of promotion. They surveyed doctors about two drugs about which there was significant disagreement between scientific and commercial sources of information. There was no scientific evidence of benefit from cerebral vasodilators and evidence of minimal efficacy for propoxyphene. However promotional material presented them as efficacious and reliable (Avorn, Jerry. Chen, Milton. Hartley, 1982).

In another study done by Avorn et al. most of the doctors they surveyed said that they relied mainly on academic sources of information, and that advertising, sales representatives and patient preference were minimal influences on their prescribing. However their beliefs about cerebral vasodilators and propoxyphene tended to be more consistent with the commercial literature than with the scientific consensus. Nearly half (48%) of the doctors who supported the use of vasodilators stated that they were more influenced by scientific rather than commercial sources of information.

Avorn et al. say that this discrepancy between where the doctors' beliefs seemed to come from, and their statements about what influenced them could be because doctors are unaware of how commercial sources influence them, or it could be because doctors are unwilling to admit this influence. There is strong consensus from these studies that doctors who rely more on promotion are heavier or less rational prescribers, or adopt new medicines earlier than those who rely less on promotion (Mapes and Roy, 1991).

The first approach to the question of how promotion affects individual prescribing uses self reported reasons for changes in prescribing, and investigates whether promotion is one of these self reported reasons (Dasta, Joseph F. Visconti, et al, 1995). The prescribing changes might be measured (i.e. externally verified) or they might be self-reported. Ideally there are specific changes in prescribing particular drugs.

Sales representatives were more likely to be listed as an influence on the prescribing of drugs used short-term. It is difficult to know how generalizable these findings might be. They may depend on the type of drugs that are being heavily marketed at the time, and other influences on prescribing at the time (Taylor and Bond note the concurrent introduction of a 'limited list').

Among primary care doctors in Kentucky, USA, those who rated information provided by sales representatives highly (as credible, available, and applicable) and reported using it more, chose more expensive prescribing options in response to three clinical vignettes (Caudill et al, 1996).

#### **2.4. Influence of Promotion on Prescription**

A study clearly showed a relationship between seeing sales representatives and prescribing one new drug, and is often quoted by others. The study was done in 1981; approximately a year after temazepam was introduced in Australia. They found that contact with a sales representative about temazepam most consistently predicted a favorable reception of temazepam at various points in the adoption process. Doctors who had seen a sales representative reported earlier awareness of temazepam, prescribed it earlier, were more likely to rate it as a moderate (rather than minor) advance over other drugs, were more likely to have prescribed it, reported prescribing it earlier, and were more likely to prescribe it routinely in preference to other alternatives. Compared to those who saw sales representatives less frequently, those who saw representatives more than once a week were aware of temazepam earlier, prescribed it earlier, and (amongst GPs) were more likely to prescribe it than other alternatives (Peay and Peay, 1981).

Peay and Peay found no relationship between doctors' professional involvement, and involvement in the medical community, and beliefs about temazepam. The study has considerable advantages over those described above. It does not ask doctors to assess themselves

whether promotion has affected their decisions. It does not ask them to rate their own level of reliance on commercial information. (Peay and Peay, 1981).

The question “have you seen a sales representative regarding temazepam?” requests one simple fact that is likely to be easier for doctors to recall than the number of journal advertisements seen, etc. The group of GPs who had seen sales representatives about temazepam may have included more of the commercial information oriented doctors described above, but this is unlikely to account completely for Peay and Peay’s results. (Peay and Peay, 1981).

To sum up , More than \$11 billion is spent each year by pharmaceutical companies in promotion and marketing, \$5 billion of which goes to sales representatives. (Wolfe SM., 1996: Woosley RL.1994) It has been estimated that \$8000 to \$13 000 is spent per year on each physician. (Drake D, Uhlman, 1993). The attitudes about this expensive interaction are divided and contradictory. One study found that 85% of medical students believe it is improper for physicians to accept a gift, whereas only 46% found it improper for themselves to accept a gift of similar value from a pharmaceutical company (Palmisano P, Edelstein J., 1980). Most medical associations have published guidelines to address this controversy.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

In this chapter, the picture of the research design, sample size and sampling Techniques, data source and data collection methods and tools used is presented. Under data collection tools data collection tool development and pilot testing for the instrument is discussed along with the study results. Results are presented in graphical and tabular format based on the responses given by the respondents.

#### **3.1. Research Design**

In this study, a cross-sectional study design was used to study the prescribing behaviors of physicians with the use of self-administered semi-structured questionnaire. The study was conducted between November 12<sup>th</sup>-December 11<sup>th</sup>, 2015.

The research type is a type of cross-sectional study and category of statistical study as the research will try to assess a data according to the research questions.

#### **3.2. Study Setting**

The study was conducted on physicians practicing in Addis Ababa private Hospitals and higher clinics, the capital city of Ethiopia. Addis Ababa is the largest city in Ethiopia located almost at the Centre of the country. Addis Ababa is also a center for all multinational and generic pharmaceutical companies who are operating in the country; the focus of most companies, especially the branded companies is in Addis Ababa.

#### **3.3. Population of the Study**

The source population constituted all physicians practicing in Addis Ababa private Hospitals and higher clinics. The study population included physicians working in private hospitals and higher clinics. Physicians who were not actively prescribing at the time of the survey were not included as part of the study subjects.

### **3.4. Sampling Technique**

According to the data obtained from Food, Medicine, Health Care Administration and Control Authority of Ethiopia (FMHACA), there are 653 Doctors working at private hospitals and higher clinics in Addis Ababa. The 20 % of the general population can be taken as a sample, as it represents the general population. Accordingly, 131 Doctors were included in the study.

### **3.5. Sampling Procedure**

It was assumed that 70% of physicians in the capital were practicing at the private hospitals and the rest 30 % were practicing at higher clinics. Accordingly, 92 physicians were taken from the private hospitals and the rest 39 physicians were taken from private clinic.

#### **Inclusion Criteria**

- Physicians who were active in prescription writing at the time of the survey.
- Physicians having registration certificate to work as a physician.

#### **Exclusion Criteria**

- Those in annual leave and/or not at the working site during the survey period.
- Not having license to practice as physician.

### **Data Collection and Management**

#### **Data Collection Instrument**

A self-administered questionnaire was used to collect data for the cross-sectional survey. Most of the questions were in likert-scale measures, few were multiple choice type that helped participants select that best fits their choice and very few were open ended questions in areas where more explanation were required. There questions were divided in parts.

### **3.6. Ethical Considerations**

#### **3.6.1. Research Approval Process**

Support letter was obtained from Saint Mary University.

#### **3.6.2. Informed Consent**

In this study, an informed verbal consent process was involved. The data collector had given a verbal explanation to each participant on the nature of the study, its purpose, the procedures involved, the potential risks and benefits of involvement. Each participant was informed that participation in the study is voluntary and that he/she can withdraw at any time.

## CHAPTER FOUR

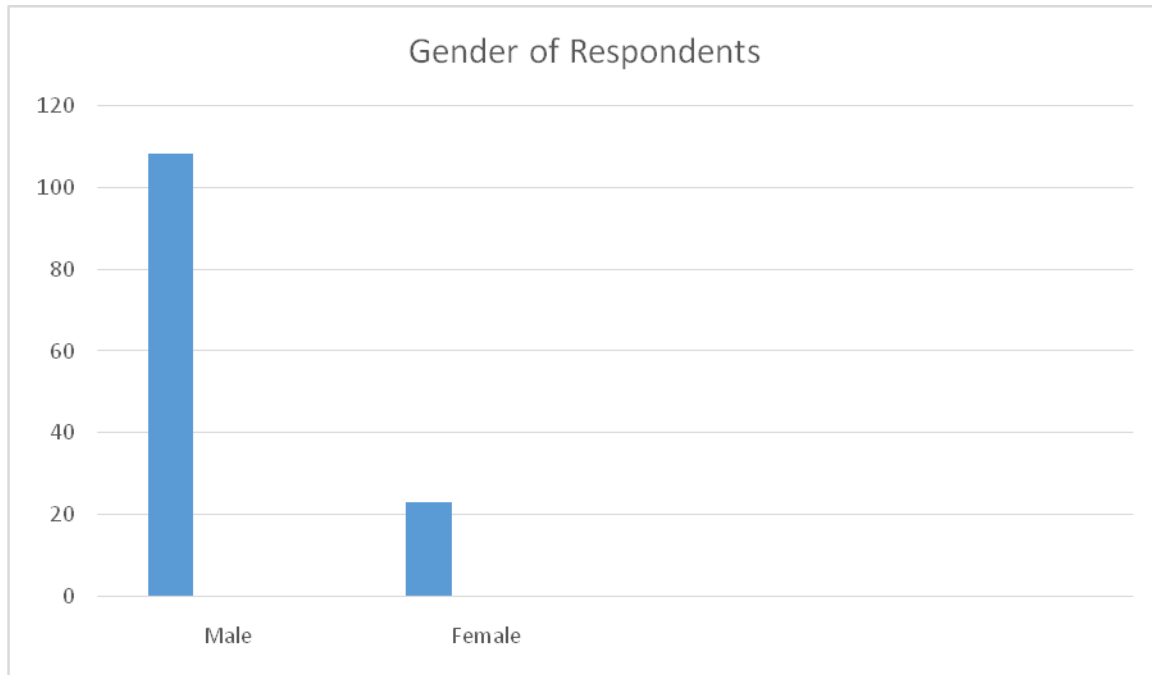
### STUDY RESULTS

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. 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 Effect of prescription drug promotion on physicians' behavior.

#### 4.1. Socio-Demographics of Respondents

A Total of 131 questionnaires were distributed. Of these, 131 were returned and hence the response rate was 100%.

Analysis of the data collected revealed that 108 (82.4%) of respondents were male and 23 (17.6) were female (Figure 4.1).



**Figure 4.1 Gender of respondents**



Analysis of the data collected revealed that 54 (41.2%) respondents were between the age of 31 and 40 years. Of the respondents, 33 (25.2%) were below the age of 31 years. And the proportion of respondents between the age of 41-50 years and 51-60 years was 27 (20.6%) and 15 (11.45%) respectively. Of all participants, only 2 (1.5%) of them have age above 60 years.

Regarding the country where participants attend their education, of all respondents, 121 (92.4%) physicians had completed their first degree in Ethiopia and 10 (7.6%) had completed in other countries.(fig 4.2)

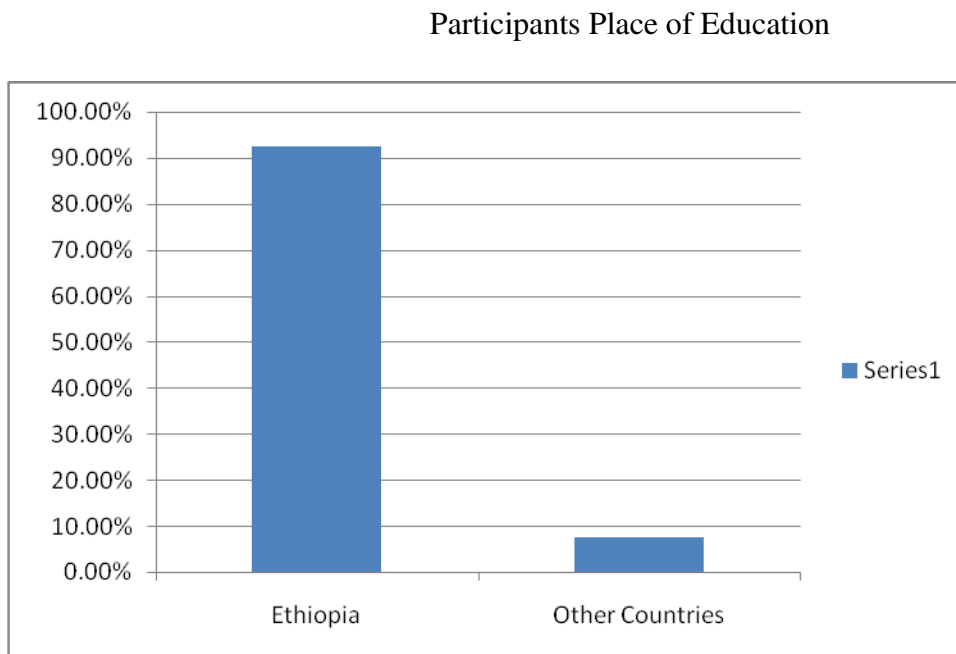
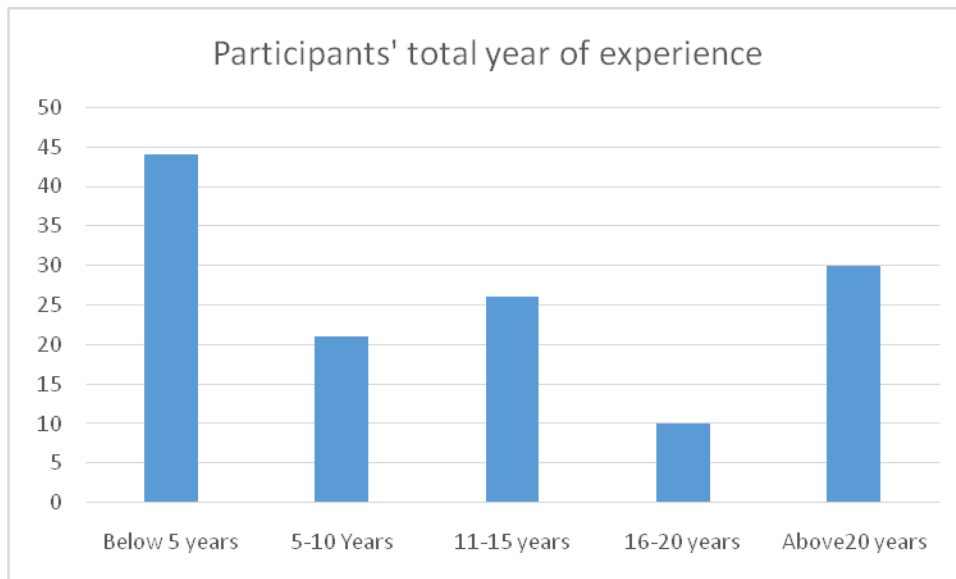


Figure 4.2 Participants Place of Education

In addition analysis of the collected data revealed that 57 (43.5%) respondents had completed their Specialty program in Ethiopia, 12 (9.16%) completed in countries other than Ethiopia. The remaining 62 (47.32%) respondents did not complete specialty program; of these, 47.32% respondents 30(48.4%) were in their residency program and 32 (51.6%) were practicing as GPs.

Regarding the type of university/college where physicians completed their first degree, only 4 (3.1%) of the respondents indicated that they completed their education in private university/college and the rest 127 (96.9%) respondents completed their first degree in public/government university/college.

Almost one third, 44 (33.59%) of the respondents reported that they had less than five years of work experience, 21 (16.03%) respondents claimed that they had 5-10 years of work experience. The other 26 (19.85%) respondents indicated that they had worked for 11-15 years; other 30 (22.9%) respondents claimed that they had worked more than twenty years and the rest 10 (7.6%) respondents had 16-20 years of work experience (Figure 4.3)



**Figure 4. 3: Respondents Total Years of Practice**

Looking at the specialty of participants, 24.43% were GPs, 22.9% were residents and the rest 52.67 % have specialized in many fields, which included internists (22.54%), Pediatricians (10.24%), gynecologists (9.5%) and surgeons(10.39%) (Figure 4.4).

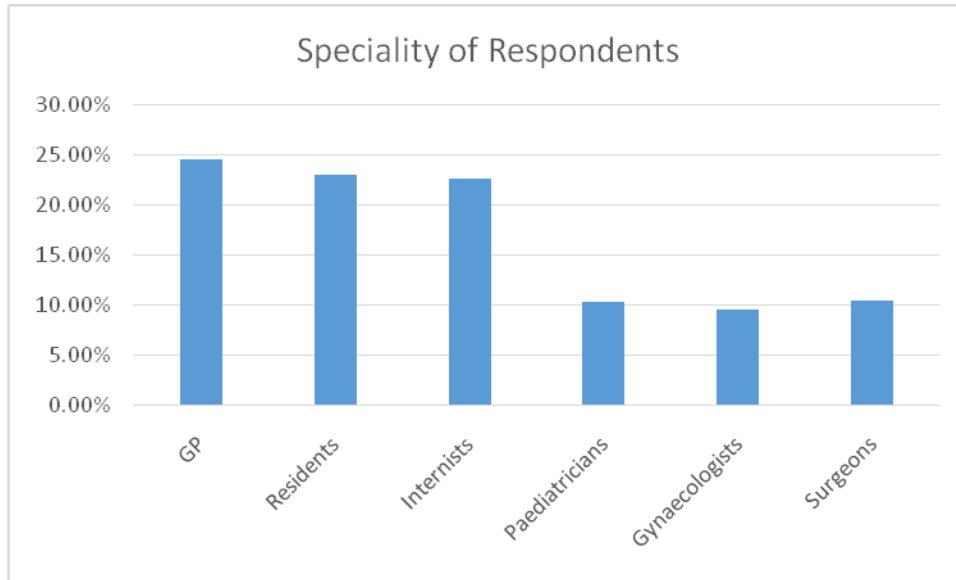
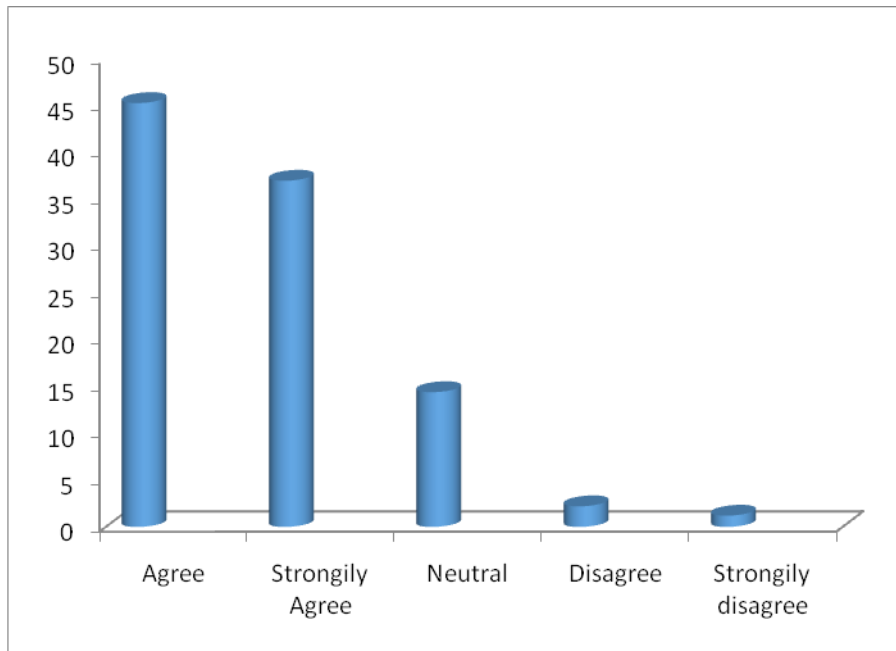


Figure 4.4 Specialty of respondents

Regarding their current practice settings, 70 % were practicing at private hospital and the rest 30 % at higher clinic.

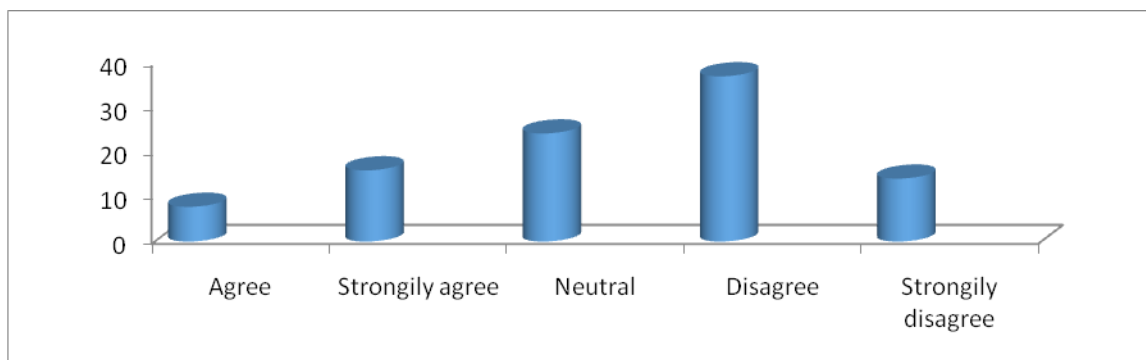
## 4.2. Promotional Techniques

To understand the effect of promotional techniques, respondents were asked a set of questions that were answered based on both likert scales and/or selecting an appropriate choice from a given list. The likert-scale was a 5 point scale 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 45.3% of them agreed that it was helpful, 37% physicians were also strongly agreed but 14.4% of respondents were neutral about the usefulness of CMEs. The answerer of the rest 2.2% and 1.1% respondents were disagreed and strongly disagreed respectively (Figure 4.5).



**Figure 4. 5: Helpfulness of CMEs in Medical Practice**

Physicians were also asked questions related to ethical practices that were common in the pharmaceutical industry and the result is shown in Table 5.2. Regarding the need of training on ethics of pharmaceutical industry-physician interactions, about 52.9% strongly agreed on the need of the training, 4.9% either disagreed or strongly disagreed on the need of the training. They were also asked on the appropriateness of restrictive policy on the interaction of medical representatives and physicians as indicated in figure 4.6



**Figure 4.6 Attitude on appropriateness of Restrictive policy**

Ethical consideration and promotional Methods responses are indicted at the below three figures.

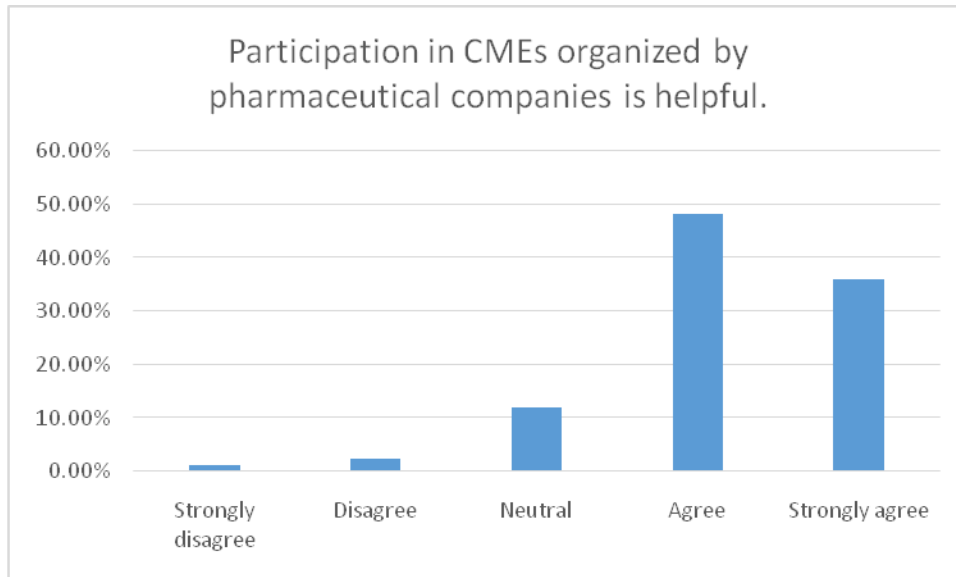


Fig 4.7 Response towards helpfulness of CMEs

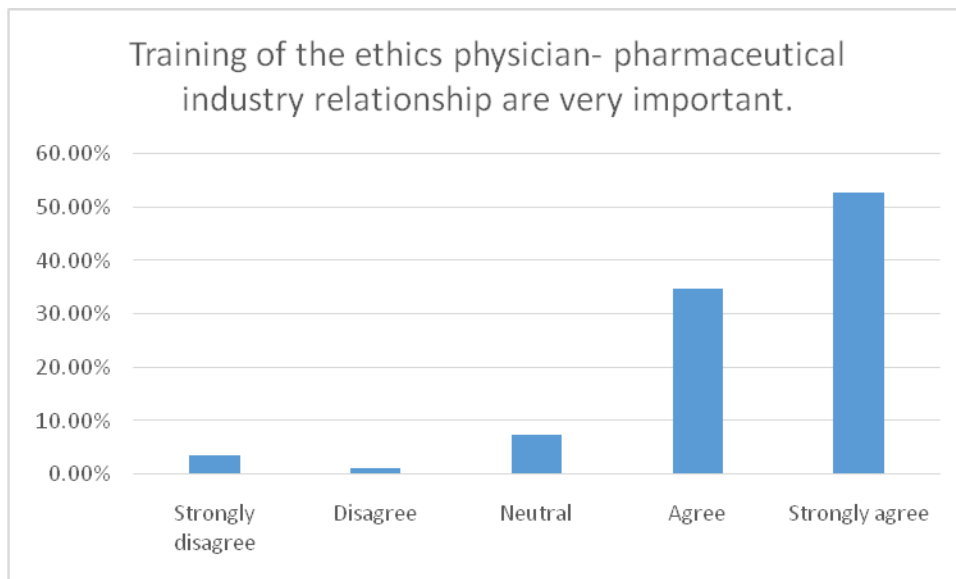


Figure 4.8 Response towards training of ethics for physician-pharmaceutical company relationship

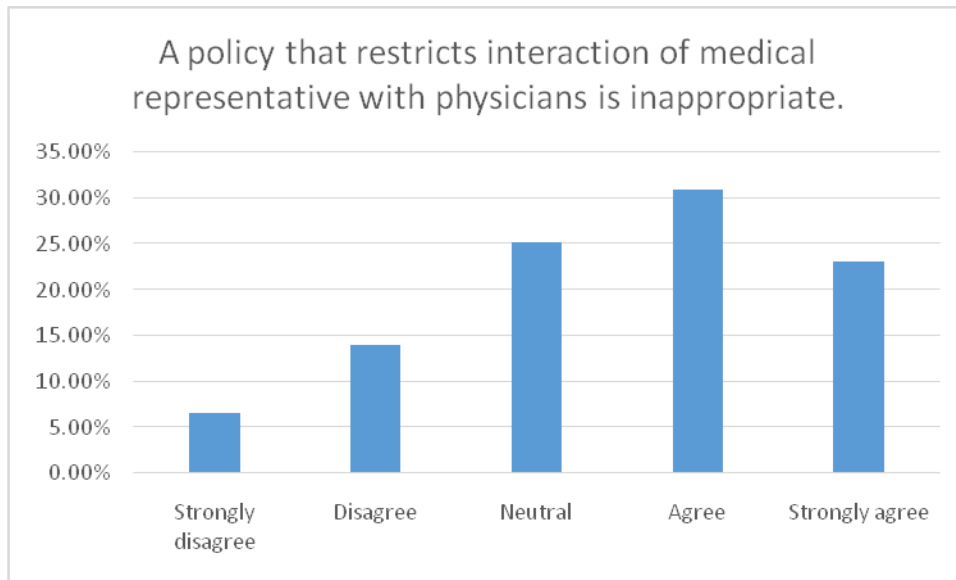


Figure 4.9 Response towards inappropriateness of restriction of medical representatives

Regarding the frequency of interaction of physicians with medical representatives, participants were asked how often they interact with medical representatives. 53.5% of physicians stated that they interacted less than one per week; 34.8% of them interacted 1-3 times per week and whereas 11.7% of them had interacted with medical representatives every day.

Participants were also asked how often they attend pharmaceutical company organized CMEs and 26.0% of them attended once a year, 20.2% physicians twice per year, 18.6% attended none so far, 12.4% replied more than four times a year and about 7.4% attended four times a year. In company sponsored CMEs, 71.4% physicians mentioned their interest to attend CMEs, if the speakers are both from local and abroad. Around 16.6 % physicians mentioned that they prefer local KOL, 7.2 % participants preferred speaker from abroad and only 4.8% of respondents did not mention their preference for speakers.

Regarding the profession of the speaker, participants asked to choose their preferences as a speaker and they had a chance to choose more than one. And majority of physicians, 52.1% preferred a physician, 24.4% physicians preferred pharmacist as a speaker, 15.2% preferred a medical representative as a speaker and around 5.2% preferred marketing manager and the rest 3.1% physicians selected others.

Participants were also asked to mention the materials they prefer to receive from medical representatives, 58.8% of them reported that they would like to receive pocket treatment guides, 69.7% physicians mentioned that they like to receive journal article reprints, 52.3% participants reported that they prefer to get free medical samples, 53.3% physicians claimed that they prefer to accept books and 42.4% physicians preferred to receive stationeries (pens, note pads, pencils etc...). Beside the above mentioned items, 26.9% physicians reported that they prefer to receive brochures and the rest 2.5% physicians reported that they prefer to get other materials.

Physicians were asked about the promotional aids that they already got from pharmaceutical companies. About 65.3% of them reported that they participated in product launch dinner. The other 46.3%, 41.3%, 40.5% and 19.0% respondents reported to receive lunch or dinner invitation, meals at departmental conferences, CMEs sponsorship, and holiday gifts, respectively. Besides, 23.4% of them received sponsorship either to attend international or local conferences.

### **4.3. Influence of Pharmaceutical Promotion on Prescribing Behavior**

The effect 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. When physicians were asked about the materials that they think to influence prescription choice, 47.4% 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 33.6%, 27.8%, 19.1%, and 14.8% of the respondents to have brand reminder effect. Books were only mentioned by 9.1% to have brand reminder effect.

A question was also asked about promotional aids that can help to influence prescription trend and 48.3% 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 brand reminder effect and influence prescription choice by 36.0%, 29.8%, 10.7% and 7.1% of the respondents respectively.

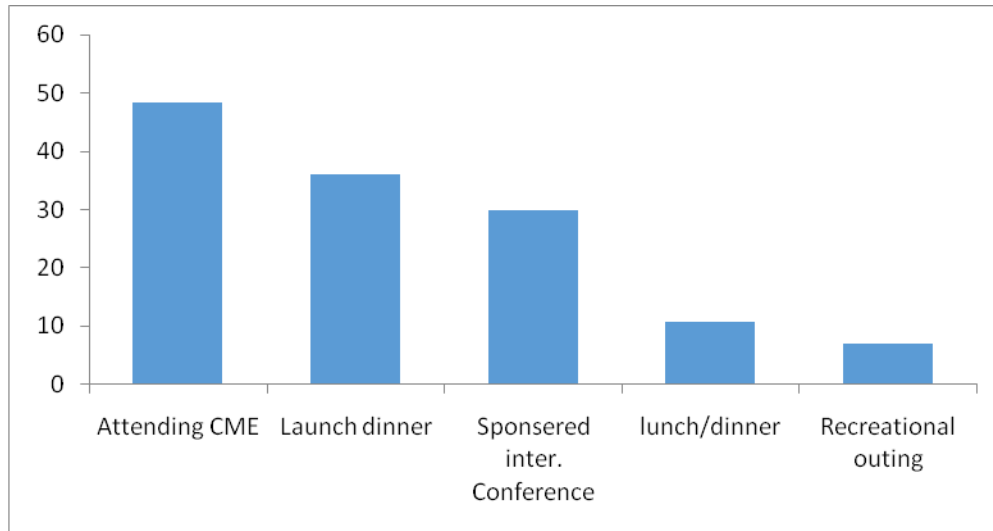


Figure 4.10 Response towards which promotional aids influence prescription

Besides the promotional materials other factors were also reported to affect physicians' prescription choice. The majority of respondents 85.5% confirmed that quality of the medicine can affect their prescription trend and 88.0% who mentioned price as 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.

The physicians were asked about the most influencing factors other than promotional materials, majority of them 54.3% admitted that quality of a medicine is the top priority in their medication choice. About 29.4% physicians reported that when they think of prescribing a drug the first thing that comes to their mind is its price. Another 19.6% participants mentioned that disease profile is the first thing that affect their prescription choice, 9.5% participants mentioned side effect of a drug is the influential factor in prescription choice and 8.6% physicians revealed that past experience has the highest priority in their prescription choice, 6.6% physicians' also admitted that the prescription trend of senior physicians' is the main factor that affect their medication choice and 6.8% physicians also mentioned that the country of production of a drug is an influential factor. About 4.7% physicians also mentioned that it is the availability of an alternative drug that guides their prescription choice.



#### **4.4. Perception of Physicians about the Quality of Promotional Information.**

Physicians were asked about the quality of information they got from medical representatives and their response was measured based on a 5 point likert. The mean and the standard deviation of the result were presented.

Based on this scale, physicians were asked to rate the content of company sponsored CMEs and 48.1% did not either agree or disagree on the quality of the contents. Only 10.7% of the physicians either disagreed or strongly disagreed on the quality of pharmaceutical company CMEs.

Regarding the relevancy of the CMEs on disease profile, 27.2% physicians agreed that company sponsored CMEs help them to get relevant information. Significant proportion of respondents, 13.6% did not agree on the relevancy of the information. With respect to receiving current and up-to-date information, 45.8% physicians agreed that participating in CMEs helped them to receive up-to-date information on medicines. About 1.2% 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 46.5% were neither agreed nor disagreed on the accuracy and completeness of information they received from medical representatives. Only 30.2% were agreed on the accuracy and completeness of information they received. The majority of respondents 60.7% agreed that the information from medical representatives is helpful in their practice. For instance, 72.3% of them were either agreed or strongly agreed on the influence of information they received on their medication choice. Similarly, 46.3% were agreed that information they received influenced their prescription choice. Physicians were also asked to state their agreement about prescription drug promotion that help to update physicians' medication knowledge. 57.9% of them agreed that it helped them update their medication knowledge. The respondents were also asked about the usefulness of prescription medicines promotion to increase physicians' practical medication knowledge. 48.8% of them agreed that it helped to get practical knowledge about medicines. This is opposed by 11.6% of the respondents.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1. Summary Of Major Findings

This study was done to investigate the effect of pharmaceutical promotion on physicians' prescription behavior and has highlighted the complex interrelated factors that affect physicians' prescription pattern. The study results indicated that the current promotional techniques had a great role in influencing physicians' prescription pattern; however, the influence of these techniques was not similar. The effect depends on various factors the findings of this study revealed that physicians' prescription decision can be affected by availability of promotional materials as well as other factors such as; physicians' practice settings, specialty of physicians and quality of the drug.

Moreover, most physicians believed that their prescription behavior was affected by the activity of medical representatives and pharmaceutical companies. The attitude of most physicians was almost similar on the importance of CMEs and trainings on physician pharmaceutical industries interaction, and these findings are similar to the findings conducted by Fischer, et al. (2009). However, concerning their agreement on the ethical training, on physician-pharmaceutical industries interactions might be due to the unethical promotional practices of some pharmaceutical companies.

From this research findings physicians do not want to restrict medical representatives because they believe that they have got valuable information from them; therefore, the activities of pharmaceutical companies need to be in a proper fashion. One way of addressing the concern of physicians not to impair their judgment about prescription choice is having disciplined medical representatives and giving balanced information on CMEs and one-on-one selling (Manchanda and Chintagunta, 2004).

The finding of this study showed that promotional materials had a strong effect on influencing physicians' prescription behavior; however, the degree of influence depends on the kind of materials that were used for promotional purpose. Although promotional materials have an influence on physicians' prescription behavior the perception of physicians is different from those of pharmaceutical companies (Iserson, et al., 2007). Companies are giving promotional materials to remind the name of their brand but physicians needs materials that help their medical practice and at the same time remind them the brand (Cutrona, et al., 2008).

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 (Warrier, et al., 2010). Regarding the stationeries, these are materials that physicians can use in their 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 and this findings are in accordance with the study findings of Pitt and Nel (1993).

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 agreed that free medical samples had the highest influence on their prescription behavior.

Despite the fact that pharmaceutical companies are investing on promotional materials, the findings showed that there was a variation on what physicians expect to receive and what companies believe physicians value. Regarding the promotional aids, GPs were the highest recipients followed by residents and internists. Pediatricians and internists were the focal points for international congress participations. The reason might be due to their involvement in drug formulary preparation (Nair, et al., 2008; Tichelaar, et al., 2010). Despite the investment on promotional aids, physicians' perception about the influence of these materials is a bit different from companies; the results of this study were in agreement with a study findings of Siddiqi (2011). The findings showed that GPs believed that attending CMEs affect their prescription

choice. Though pediatricians and internists were mostly invited to international conference, their attitude on the influence of prescription trend was different. Similar to the findings of Wazana (2000), the results of this study showed that product launch and CMEs can influence physicians' prescription trend.

Furthermore, the results of this study also revealed that in addition to the promotional materials, prescription behavior of physicians were 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 discovered that quality of a medicine is the major factor followed by price of a medicine. The least influential factor that the physicians may consider was the country of production and prescription trend of senior physicians.

This study also shown that GPs and residents were the most influenced physicians by the prescription trend of their instructors and senior specialists. The probable justification for this finding is that residents were under the supervisions of seniors. 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 (Nair, et al., 2008).

In general terms, the result of this study showed that in additional to promotional materials; price and quality of a drug have a great role in prescription choice. Regarding the influence of pharmaceutical promotion materials. According to this result, it is obvious that promotion of prescription drug influences physicians' behavior in a positive way.

Regarding the frequency of visit, personality, approach, knowledge and approach of the medical representatives on the physicians' prescription decision, the study results showed, 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 believe to give them an appropriate and timely information about drugs.

This study also revealed that if a physician is invited to visit a manufacturing plant 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 were technologically advanced and the process was 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.

The results of this study showed that promotion of prescription drug has a positive influence on physician's prescription behavior. The findings also showed that physicians believe that prescription drug promotion should not be banned but it should be done in such a way that does not affect the patients' wellbeing. The reason why physicians support prescription drug promotion is that it gives them quick information about a given drug. They might use this information as it is or go for further reading. Especially in countries where new innovative drugs may not be available as they are launched in other developed countries, physicians know them only on text books; therefore, the effort of medical representatives let them know that these products are in the market.

Regarding the quality of information medical representatives or pharmaceutical companies deliver to physicians, the results were consistent among all physicians, and most physicians agreed that the information they have got from medical representatives was somewhat valuable.

## **5.2. CONCLUSIONS**

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, and side effects have 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.

It can be concluded 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.

### **5.3. RECOMMENDATIONS**

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

- Pharmaceutical companies need to use ethically acceptable promotional materials and methods.
- Pharmaceutical companies need to understand what physicians need most and Address that need.
- Medical representatives should be trained about ethical and professional promotion.
- Pharmaceutical companies need to invest on CMEs and relationship management so that both the physicians and pharmaceutical companies can benefits from the interaction.
- Further longitudinal studies need to be conducted to strengthen the findings of this study.

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**St. Mary's University**

**Master's in Business Administration (MBA) Program.**

**Title: To Assess the Effect of Prescription Drug Promotion on Physicians'  
Prescription Behavior Practicing in Addis Ababa.**

My name is Adiam Bizuayehu and I am currently enrolled at St . Mary's University, School of Graduate Studies. I am writing my MBA thesis as a partial fulfillment.

This study is done to examine the effect of Prescription Drug Promotion on Physicians' prescription pattern and to evaluate what mixes of promotional Techniques are appropriate and most ethical to be used for the maximum benefit of patients. Please be honest in filling this questionnaire, as the results of this study can be used as a basis for further study. Your confidentiality will be protected and any information collected in this Study will be granted with full confidentiality.

For any queries, call me at 0913135555.

## I. Questions

### 1. Gender

- a. Female
- b. Male

### 2. Age

- a. below 29 years
- b. 30-40
- c. 41-50
- d. 51-60
- e. above 60

### 3. University/College from which you Graduated or got your first degree?

- a. Public/Governmental University/College
- b. Private College/University
- c. Other.....

### 4. Your specialty Of Practice

- a. GP
- b. Internist
- c. Surgeon
- d. Gynecologist
- e. Pediatrician
- f. Other.....

### 5. Type of current practice setting

- a. Private hospital
- b. Private clinic

### 6. Years of practice

- a. Less than 5 year's
- b. 5 to 10 years
- c. 11 to 15 years
- d. 16 to 20 year's
- e. Greater than 20 years

## II. Questions related with a continuing Medical Educations (CME)

Please choose the best among the rating in the number from 1 to 5 for the questions 7-8 in below based on your grade.

**Where 5 is -strongly agree, 4-agree, 3-neutral, 2-disagree, 1-strongly disagree**

- 7. Participating in CMEs organized by pharmaceutical companies is helpful .....
- 8. Participating in company sponsored CMEs does not affect prescription decision .....
- 9. How often do you attend pharmaceutical companies organized CMEs?
  - a. None so far
  - b. Once a year
  - c. Twice a year
  - d. Three times a year
  - e. Four times a year
  - f. More than four times a year

### **III. Questions concerning Promotional Materials**

- 10. What promotional items do you usually receive from Medical Representatives?
  - a. Stationeries (pens, note pads, pencils, etc...)
  - b. Free medical samples
  - c. Pocket treatment guide
  - d. Journal article reprints
  - e. Books
  - f. Brochures
  - g. Others, please specify.....

- 11. Of the materials described in Q# 10 which one do you think can have a brand Reminder effect and influence prescription choice? -----

Please choose the best among the rating in the number from 1 to 5 for the questions 12-16 in below based on your grade given

**Where 5 is -strongly agree, 4-agree, 3-neutral, 2-disagree, 1-strongly disagree**

- 12 .Availability of promotional materials can influence prescription-----
- 13 .Promotional materials help to remember drug names-----
- 14 .Availability of brand reminders encourages prescribing the drug-----
- 15 .The availability of free medical samples may not affect prescription choice-----
- 16. Free drug samples encourage prescribing the drug-----
- 17. Have you ever got one of the following promotional aids from pharmaceutical? Companies?
  - a. Product launch dinner
  - b. Invitation to social or recreational outings
  - c. Invitation to lunch or dinner
  - d. sponsoring to attend CMEs
  - e. Sponsoring for travel to international conference

- f. Sponsoring for travel to a local conference
- g. Holiday gifts
- h. Others, please Specify.....

18. Of the materials described in Q# 17 which one do you think can have a brand Reminder effect and influence prescription choice? Please write the letters that holds Your choice. -----

**Please choose the best among the rating in the number from 1 to 5 for the questions 19-29 in below based on your grade**

**Where 5 is -strongly agree, 4-agree, 3-neutral, 2-disagree, 1-strongly disagree**

19 .Availability of promotional aids does not affect prescription decision-----

20. Pharmaceutical company sponsored entertainments/recreational events have nothing to do with prescription choice-----

21 .The funds that one can receive for his/her service from pharmaceutical companies may not have a role in prescription decision-----

22.Information from medical representatives is accurate, up to date and-----

23.Information from medical representatives is helpful in medical practice-----

24Information from medical representatives can help in prescription choice-----

25.The personality, knowledge and approach of medical representatives might affect prescription decision-----

26.Information from medical representatives doesn't have any influence on physicians' medication choice-----

27.A policy that restricts interaction of medical representatives with physicians is appropriate -----

28.Trainings on ethics of physicians-pharmaceutical industries relationship are very important -----

29.Frequency of medical representatives' visit has a role in brand reminding and influence prescription choice-----

#### **IV. Impact of Prescription Drug Promotion**

**Please choose the best among the rating in the number from 1 to 5 for the questions 30-37 in below based on your grade**

**Where 5 is -strongly agree, 4-agree, 3-neutral, 2-disagree, 1-strongly disagree**

30.Prescription drug promotion has a positive impact on physicians' medication choice-----.

31.Prescription drug promotion should be banned-----

32.Prescription drug promotion help to update physicians' medication-----

33.Prescription drug promotion can influence prescription choice-----

34.Prescription drug promotion should be encouraged-----

35.Prescription drug promotion does not have any role in medical

Practice-----

36.Prescription drug promotion help to get practical knowledge about Medicines-----

37.Prescription drug promotion interferes with ethical medical practice-----



# DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Temesghen Belayneh (PhD). All sources of materials used for the thesis have been fully acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree. It is offered for the partial fulfillment of the degree of MA in Business Administration (MBA).

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Name

St. Mary's University, Addis Ababa

---

Signature and Date

January, 2016

## **ENDORSEMENT**

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

Temesgen Belayneh (PhD)

\_\_\_\_\_

Advisor

Signature

St. Mary's University, Addis Ababa

January, 2016