



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

**THE IMPACT OF MARKETING COMMUNICATION ON
PHYSICIAN'S PRESCRIPTION BEHAVIOR; 16
SELECTED HOSPITALS IN ADDIS ABABA AS CASE**

BY: BERSABEH GETACHEW

ID: -SGS/0146/2009B

DECEMBER 2018

ADDIS ABABA, ETHIOPIA

**THE IMPACT OF MARKETING COMMUNICATION ON
PHYSICIAN'S PRESCRIPTION BEHAVIOR; 16
SELECTED HOSPITALS IN ADDIS ABABA AS CASE**

BY: BERSABEH GETACHEW

ID: -SGS/0146/2009B

**RESEARCH THESIS SUBMITTED TO SCHOOLS OF GRADUATE
STUDIES OF ST. MARRY'S UNIVERSITY IN PARTIAL FULFILMENTS
OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ART IN
MARKETING MANAGEMENT**

ADVISOR: ADANECH GEDAF AW (ASSISTANT PROFESSOR)

**DECEMBER 2018
ADDIS ABABA, ETHIOPIA**

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

**THE IMPACT OF MARKETING COMMUNICATION ON
PHYSICIAN'S PRESCRIPTION BEHAVIOR; 16
SELECTED HOSPITALS IN ADDIS ABABA AS CASE**

APPROVED BY BOARD EXAMINERS

Dean, Graduate Studies

Signature & Date

Advisor

Signature & Date

External Examiner

Signature & Date

Internal Examiner

Signature & Date

.....

.....

Table of contents

Declaration	III
Confirmation	IV
acknowledgement.....	V
List of Abbreviation.....	VI
List of tables.....	VII
List of figures.....	VIII
Abstract.....	X
Introduction	- 1 -
1.1. Background of the study.....	- 1 -
1.2. Statement of the problem	- 3 -
1.3. Objectives of the study	- 5 -
1.3.1. General objective	- 5 -
1.3.2. Specific objectives	- 5 -
1.4. Hypotheses of the study	- 5 -
1.5. Significance of the study	- 5 -
1.6. Scope and limitation of the study	- 6 -
1.7. Definitions of terms.....	- 7 -
1.8. Organization of the study	- 8 -
Chapter Two.....	- 9 -
2. Literature review.....	- 9 -
2.1. Pharmaceutical Marketing Communications	- 9 -
2.1.1. Definitions of pharmaceutical marketing communications	- 9 -
2.1.2. Dimensions of pharmaceutical marketing communications.....	- 11 -

2.1.3. Integrated marketing communications.....	- 16 -
2.2. The definition of physician prescribing behavior	- 17 -
2.2.1. Influence of pharmaceutical promotions on physician prescription behavior	- 18 -
2.2.2. The effects of direct-to-physician marketing.....	- 18 -
2.2.3. The effect of direct-to-consumer marketing	- 19 -
2.3. Empirical findings of related studies.....	- 21 -
2.3.1. Understanding pharmaceuticals industry	- 24 -
2.4. Conceptual framework	- 27 -
2.5. Hypothesis formulation	- 28 -
Chapter Three.....	- 31 -
3. Research Methodology	- 31 -
3.1. Research approach.....	- 31 -
3.2. Research design	- 32 -
3.3. Population and Sampling method	- 32 -
3.3.1. population.....	- 32 -
3.3.2. sample size	- 33 -
3.4. Data collection instrument.....	- 33 -
3.5. Reliability and Validity	- 34 -
3.6. Data analysis techniques and data presentations.....	- 35 -
3.7. Ethical considerations.....	- 36 -
Chapter Four	- 37 -
4. Data analyses and presentation.....	- 37 -
4.1. Descriptive analysis.....	- 37 -
4.1.1. demographic characteristics.....	- 38 -
4.1.2. marketing communications	- 39 -

4.1.3.	summary of marketing communication dimensions	- 43 -
4.1.4.	physician prescription behavior dimensions	- 44 -
4.1.5.	comparison of marketing communication tools.. Error! Bookmark not defined.	
4.2.	Inferential statistics.....	- 45 -
4.2.1.	validity and reliability	- 45 -
4.2.2.	correlation analysis of variables.....	- 46 -
4.2.3.	regression analysis	- 47 -
4.3.	Discussion.....	- 53 -
Chapter Five.....		- 55 -
5.	Summary, Conclusions and Recommendations	- 55 -
5.1.	summary of major findings	- 55 -
5.2.	conclusion.....	- 56 -
5.3.	recommendations.....	- 58 -
Bibliography.....		- 60 -
6.	appendices	- 60 -
6.1.	appendix i survey questionnaire.....	- 60 -

DECLARATION

I, the undersigned, declare that this thesis is my original work. All sources of materials used for this thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher institution for the purpose of earning any degree.

BERSABEH GETACHEW

Name

Signature

St. Mary's University College, Addis Ababa

December 2018

CONFIRMATION

I confirm that this thesis has been advised by me and submitted for examination with my approval.

Adanech Gedafaw (Assistant professor)

Advisor

Signature

St. Mary's University College, Addis Ababa

December 2018

ACKNOWLEDGEMENTS

First and for Most I would like to Thank the Almighty God for everything. My Deepest gratitude goes to my adviser Adanech Gedafaw (Assistant Professor), for her unreserved guidance. I would like to thank all the study participants for their willingness, Special Thanks goes to my Family and Friends, without their help and encouragement this work would never come to an end.

Bersabeh Getachew

LIST OF ABBREVIATIONS/ ACRONYMS

PPB	Physician Prescription Behavior
MCs	Marketing Communications
IMC	Integrated Marketing Communications
FMHACA	Food, Medicine, Healthcare Administration and Control Authority
MRs	Medical Representatives
WHO	World Health Organization
CME	Contentious Medical Education
USA	United States of America
DTCA	Direct to Customer Advertisement
PSRs	Pharmaceutical Sales Representatives
PDMA	Prescription Drug Marketing Act
R&D	Research and Development
BRICMT	Brazil, Russia, India, China, Mexico, and Turkey
HIV	Human Immunity Virus
SSA	Sub Saharan African
CAGR	Compound Annual Growth Rate
APF	Addis Pharmaceutical Factory
EPHARM	Ethiopian Pharmaceutical Manufacturing Factory

LIST OF TABLES

TABLE	PAGE
Table 4.1 Demographic Characteristics of Respondents	39
Table 4.2 Respondents' perception on Advertising	40
Table 4.3 Respondents' perception on Sales Promotion	41
Table 4.4 Respondents' perception on Direct Marketing	42
Table 4.5 Respondents' Perception on Personal Selling	43
Table 4.6 Respondents' Perception on Public Relations/ Publicity	44
Table 4.7 Summary of Marketing Communication Dimensions	45
Table 4.8 Physician Prescription Behavior	45
Table 4.8 Reliability Analysis of the Variables	47
Table 4.9 Correlation Analysis of Variables	48
Table 4.10a Regression Results of the Effect of MCs on physician prescription behavior	49
Table 4.10b Regression Results of the Effect of MCs on physician prescription behavior	49
Table 4.10c Regression Results of the Effect of MCs on physician prescription behavior Coefficients a	51
Table 4.13 Summary of Proposed Hypotheses	52

LIST OF FIGURES

FIGURE	PAGE
Figure 2.1. Conceptual Framework	29

ABSTRACT

All over the globe pharmaceutical enterprises are using different promotional techniques in order to get Physicians' attention for their products. Even though, currently, to have an influence on physicians' prescription decision pharmaceutical companies are using different promotional techniques, there is no evidence that which marketing strategy is/ are most effective in Ethiopian medical institutions' context. The purpose of this study is, thus, to assess perception of physicians on different promotional activities and determine their effects on physician prescribing behavior. Accordingly, the thesis proposed important research hypotheses on the effect of pharmaceutical marketing on physician prescribing behavior. Methodology used was using questionnaire tool to collect data and analyze, where a set of self-administered structured questionnaires were distributed to a sample of 133 practicing physicians working at selected 10 private and 6 public hospitals in Addis Ababa. The respondents participated in this study were selected by using convenient non-probabilistic sampling technique. The findings revealed that the different promotional techniques that pharmaceutical companies are using have significant effect on the physicians' prescription decision except advertising. It was found that prescription behavior of a physician greatly influenced by pharmaceutical marketing. Among all promotional strategies public relation ($\beta = 0.698$ at $p < 0.05$) followed by personal selling ($\beta = 0.518$ at $p < 0.05$) and sales promotion ($\beta = 0.408$ at $p < 0.05$) were found most effective strategy that influence a physician's prescription remarkably while advertisement has showed insignificant effect as commercials of the pharmaceutical products in a scientific journals attracts the physician concentration least. The study also revealed that physicians have a positive perception about the information they have got from continuous medical education, free sample demonstration, interpersonal relationship with sales representatives and printing object like brochures. To be on the competitive edge, pharmaceutical companies need to understand the healthcare environment and both financial and non-financial need of physicians.

Key terms: *Marketing Communications, Physician, Prescription Behavior, pharmaceuticals*

CHAPTER ONE

INTRODUCTION

1.1. BACKGROUND OF THE STUDY

World Health Organization (WHO) defines pharmaceutical promotion as all information and persuasive activities by manufacturers and distributors, the effect of which is to induce the prescription, supply, purchase and/ or use of medicinal drugs. It is well established in the literature that pharmaceutical companies commonly employ a wide range of marketing strategies to increase their drug sales (Parker, 2005). Most pharmaceutical companies commit a great deal of time and money to marketing in hopes of convincing physicians and pharmacists of the merits of their products (Al-Haddad, 2014).

The pharmaceutical industries spend between 15 and 25% of its total budget on promotional Activities, and this proportion is even higher in third world countries (Laborite, 1985). Prescription drugs spend tens of billions of dollars marketing their products to healthcare providers each year. These payments may lead prescribers to direct demand towards the firms that pay them (Colleen, 2017).

Pharmaceutical companies are developing processes to influence the people who influence the physicians. There are several channels by which a physician may be influenced, including self-influence through research, peer influence, direct interaction with pharmaceutical companies, patients, and public or private insurance companies. These activities are performed by the pharmaceutical companies in two ways like creating the pull strategy and push strategy. Pull strategy mainly concentrate on the mass media promotions and limited influence to the doctors. Push is the main promotional method followed by many countries where doctor level promotions are more prominent. Country like Sri Lanka is more towards this strategy where Government has not given the provision to do pull strategy (Wendy D. 2007).

A study by (Saad Shamim, 2014) there were certain factors, which influence the prescription behavior of physicians such as New drug in market, Brand prescription, sponsorship to conference, promotional tools and drug sample. Influence is heavily depends on how the sales person promote their brands. Hence it is very much important to identify the doctor's psychology

in order to get the mind share for prescribe the brand. This study touched the key variables which will help pharmaceutical companies to mind share for prescribe the brand.

Leo A. and Kangis R. (2000) argued that promotions to physicians by pharmaceutical companies directly influence drug choice and prescriptions issued for a particular drug. Hence, physicians do not seem to widely use alternative information resource such as medical journals. Instead, information is mainly obtained from promotional packages, company medical representatives, and sponsored work shop. However, the same sources of information have been criticized by several scholars as biased.

These days, pharmaceutical companies use different kind's promotional strategies in order to sell their brands. The target audience for these companies is doctors since they are the one who prescribe the medications. Pharmaceutical companies give gifts, sample drugs, brochure, prepares contentious medical education (CME), arrange trip and so on. In Ethiopia, Pharmaceutical companies promote their product through their medical representative (MRs) or sales representatives by using drug sample, printed product literature and gifts that helps them to increase acceptability of their product. Many prescribers receive pens, notepads and coffee mugs so that a targeted drug's name stays upmost in subconscious mind of the prescribers (Birhanu, 2016). For this reasons here in Ethiopia the same molecule of drugs is sold under different brand names. For e.g. Ciprofloxacin 500mg is sold fewer than 10 brand names.

According to revised document that contains list of human pharmaceutical suppliers issued by Food, Medicine, Healthcare Administration and Control Authority of Ethiopia FMHACA (2014), there are a total of 254 pharmaceutical supplier companies in Addis Ababa currently which comprise Manufacturers, Importers and Wholesalers. Most of these companies promote their products in different brand names with almost similar kind of promotional tools. Determining the most effective way of promotion is crucial to pharmaceutical companies to direct their promotional effort appropriately.

According to FMHACA, Pharmaceutical promotion includes representation such as sound, word, sign, image, electronics or other means whatever, for the purpose of promoting directly or indirectly the prescription, sale or dispensing of any pharmaceuticals. The authority also defines countries. "Pharmaceuticals as any substance used in the diagnosis, treatment, mitigation or prevention of a disease in human and includes narcotic drugs, psychotropic substances and

precursor chemicals, traditional medicines, complementary or alternative medicine; poisons, blood products, vaccine, radioactive pharmaceuticals, cosmetics and sanitary items and medical instruments. Broadcast advertising of prescription is prohibited in Ethiopia except ORS, oral contraceptives, condoms, vaccines, vitamins, medicated and non-medicated cosmetics, sanitary and beautifying agents like tooth paste, diapers and modes, and disinfectants (FMHACA, 2013).

This study touches the key variable which will help pharmaceutical companies to streamline the marketing strategy and enable them to invest their budget in proper way to get the consistence business throughout the financial year. It provides the baseline information to the industry which gives a basic platform to understand the doctor's perception towards the branded drugs in Ethiopia Pharmaceutical industry.

1.2. STATEMENT OF THE PROBLEM

To survive in the competitive marketing environment, both small and large organizations need to adopt promotional mix strategies in order to attract and retain customer hence long term relationships and growth in terms of productivity. Increased revenue, increased client-base and customer loyalty are measures of growth of any organization in the competitive market (Mbongo P, 2014).

The impact of pharmaceuticals promotional strategy on physician prescribing pattern has been studied in different countries. And the result revealed that the existence of close relationship between them. Pharmaceutical companies use many methods to influence the prescribing habits of physicians. These companies spend billions on marketing annually in hopes of increasing their revenue and market share. The success of a marketing strategy depends on a number of factors, with some strategies generating far superior outcomes than others. A more focused understanding of the most effective marketing approaches could save pharmaceutical companies billions in advertising and increase their sales.

In this context it is a question that how drug companies promote their product to the medical professionals. According to the Jon Buckley (2006) had published the paper article on Electronic Journal of Business Ethics and Organization Studies titling "Pharmaceutical Marketing – Time to change" had mention two ways, which are creating pull and creating push. As mentioned in this article, pull strategy is much more common in the countries like United States of America (USA)

and New Zealand where those pharmaceutical companies are given provision to advertise their products on mass media. This is commonly known as Direct to consumer advertisements (DTCA). This was somewhat controversial among the medical professional and health related agencies. Flynn (1999) argues that DTCA makes consumers better informed and more sophisticated. In his view consumers are enabled, through DTCA, to better understand the market for drugs and the therapeutic options available to them. This view is also shared by Calfee (2002), who argues that consumers can engage in more equitable relationships with health care providers and become partners in their own health care as a result of DTCA.

Mintzes et al (2002) found that consumers pulled prescription drugs through the system, going to physicians with requests for medications that they had learnt of through advertisements. Their research showed that patients normally got positive responses to requests for prescriptions. Their research also showed that physicians were influenced in their choice of drugs and might otherwise have prescribed different drugs. In contrast to pull strategy; push is the opposite strategy, which many countries are followed. This was found that more viable and reliable promotional method to a pharma company where that many governments are not allow direct to consumer advertisements (Joan Buckley, 2006).

Separate studies by McInney, Scheidermeyer, Lurie et al (1990), Banks and Mainour (1992) and Chren, Landefeld and Murray (1989) all found that there was a strong correlation between doctors' tendencies to recommend drugs and their receipt of gifts/sponsorship/ non-related payment etc. Studies by Wazana (2000), Chren et al (1989) and Thomson, Craig and Barnham (1994) all show that gifts impact on doctors' prescribing practices. Wazana (2000) examined 29 empirical studies of the impact of interactions between the medical profession and Big Pharma. According to this 29 empirical studies that doctors are more keen prescribing the drug with relate to detailing skills, sampling of the products, scientific materials, relationship with the doctor, continuous meeting and CME meeting conducted as promotional tools by the pharmaceutical companies.

The primary purpose of this study is to assess how promotional tools influence physicians prescription patterns and behaviors. In Ethiopia, pharmaceutical companies use different promotion strategy in order to sell their brand. This pharmaceutical company's don't know which marketing strategy is the most effective. It is creating a provision to researcher to identify

this factors which create push for the doctors to prescribe branded drugs. In this study, researcher looking to identify to what extent promotion strategies of pharmaceutical companies will influence on doctors to prescribe the branded drugs in Addis Ababa, Ethiopia.

1.3. OBJECTIVES OF THE STUDY

1.3.1. General Objective

The impact of marketing communication and physician's prescription behavior-selected hospitals in Addis Ababa as case

1.3.2. Specific Objectives

- ✓ Determine the effect of advertising on physician prescription behaviors
- ✓ Determine the effect of sales promotion on physician prescription behaviors
- ✓ Evaluate the effect of direct marketing on physician prescription behaviors
- ✓ Evaluate the effect of personal selling on physician prescription behaviors
- ✓ Evaluate the effect of public relations on physician prescription behaviors

1.4. HYPOTHESES OF THE STUDY

H₁ - Advertising has significant effect on physician prescription behaviors

H₂ - Sales promotion has significant effect on physician prescription behaviors

H₃ - Personal selling has significant effect on physician prescription behaviors

H₄ - Direct marketing has significant effect on physician prescription behaviors

H₅-Public relation has significant effect on physician prescription behaviors

1.5. SIGNIFICANCE OF THE STUDY

There are many pharmaceutical companies that are currently marketing their products in Ethiopia. This happens through selected distributors in the country involved in the pharmaceutical business. To sell their products at the consumer level, companies have their own marketing team, which influence their customers (Prescribers and retailers) and they invest a lot of budget to successfully accomplish this. This study, thus, will contribute to owners or

managers in charge of promotional activities in pharmaceutical companies in Ethiopia, helping them in grasping what attitudes physicians hold towards promotional efforts by the companies directed to doctors. It is also important to determine the amount and intensity of budget allocation for promotional activities in efficient and effective ways.

Besides, it presents an interesting snapshot of how future physicians in Ethiopia view the promotional effort by pharmaceutical industry. In this regard, it will be very important for medical students to sharpen their attitude towards detailing, sample drugs, promotional gifts from pharmaceutical industry and attitudes towards pharmaceutical sales representatives (PSRs) is whether favorable due to large amount of money invested by pharmaceutical companies for promotion.

The study might also pave the way for further study on the effect of attitude on the prescribing behavior of physicians and thereby track for possible remedy to change, reduce even eliminate the negative attitude medical students and/or practicing physicians have. This study also has its own contribution for both decision makers and researchers in field of medical ethics.

1.6. SCOPE AND LIMITATION OF THE STUDY

1.6.1. SCOPE OF THE STUDY

Conceptually, this study focuses on the evaluation of marketing communications' effect on physician prescription behavior. It was conducted on medical doctors who are actively working for both selected public and private hospitals in Addis Ababa. Other health care practitioners' perceptions such as health officers, nurses, optometrists, etc. who are authorized to issue prescriptions are excluded as they are not the intention of this study. On the other hand, physicians working at different organizations in regional states are also excluded due to time and financial constraints. Geographically, the study considers only the physicians practicing at selected hospitals in Addis Ababa.

Based on Keller's (1991) model, which considers the promotional mix factors affecting physicians' prescription behaviors. The intended determinant factors to be assessed are advertising, personal selling, direct marketing, sales promotion and publicity/ public relations. However, physician's personal skills and level of competency, economic status, seniority and

other demographic and macro factors are also not considered even though they have their own contributions on the subject under study.

1.6.2. LIMITATION OF THE STUDY

Limitation of the study may arise from the sampling methods as the sample was taken from judgmentally and conveniently selected respondents in the selected hospitals. Such non-probabilistic sampling approach may induce sampling errors and fails to generalization of the study to other related subjects as well. On top of that one of the disadvantages of this study, which depended on the responses of the physician, is a tendency among responders to give socially desirable responses to questions relating to one's behavior. Disclosure of unethical prescription behavior may inhibit them to tell the actual truth on ground. This also affects the credibility of the major findings and respective conclusions.

1.7. DEFINITIONS OF TERMS

Behavior: According to (Eagly, 1993) Behavior is defined as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor”

Detailing: Detailing refers to the activity of pharmaceutical sales representatives (reps), when they make calls to physicians and provide them with "details" of approved scientific information, benefits, side effects, or adverse events, related to a drug (Pharma Marketing Network, 2015).

Detail: "Detail" means that parts of an in person, face-to-face sales Call during which a Sales Representative, who is trained and knowledgeable with respect to the applicable Product, including its label and package insert, and the use of the applicable promotional materials, makes a presentation of such Product to a medical professional with prescribing authority. When used as a verb, "Detail" means to engage in Detailing activities. (Pharma Marketing Network, 2015)

Sample drug: According to the Prescription Drug Marketing Act of 1987, the term "drug sample" means a unit of a drug, which is not intended to be sold and is intended to promote the sale of the drug. According to this act, the manufacturer or distributor of a drug subject may distribute drug samples by mail or common carrier to practitioners licensed to prescribe such drugs or, at the request of a licensed practitioner, to pharmacies of hospitals or other health care entities. The recipient of the drug sample must execute a written receipt for the drug sample upon its delivery and the return of the receipt to the manufacturer or distributor (Pharma Marketing Network, 2015).

Gifts: A gift is understood to mean: A sum of money, or Any physical object, or the possibility to participate for free in events which are open to the public or are private in nature, are only accessible in return for payment and represent a certain value (such as complimentary tickets for sports events, concerts, theatre, conferences etc.), or Any other advantage with a pecuniary value such as transport costs (EMA, 2013).

1.8. ORGANIZATION OF THE STUDY

To give a clear and concise understanding to the reader this study is wrapped up as follows. Chapter one introduces the very essence of marketing communications (promotional mixes) and its background followed by problem statement extracted from the literature gap of the study area. The second chapter deals with the theoretical framework, empirical framework and the conceptual framework of the study and their respective justifications of the model to be applied for analysis. Chapter three is dedicated for the methodological part. It explains about the nature of the study, the sampling design and techniques applied; the sources of data collection and the means of analysis applied to execute the study. The fourth chapter deals with the analysis part of the study like the correlation and regression analysis with major findings and discussion as well as the testing of the hypothesis proposed in chapter one. Finally, the fifth chapter summarizes the whole journey by summarizing, concluding, recommending and giving some directions for future research.

CHAPTER TWO

2. LITERATURE REVIEW

Pharmaceutical marketing is quite different from general marketing as the decision makers are the physicians (secondary customers) not the patients (original consumers), thus maximum marketing strategies are designed on focusing to the physicians. This study explores the influence of pharmaceutical marketing on the prescription practices of physicians in Ethiopia. In this regards, the review of the related literature is composed of pharmaceutical marketing communications and their respective based on theoretical and empirical studies along with design of conceptual frameworks (models) and hypotheses formulation. Finally, overview of Ethiopian pharmaceutical industry is discussed briefly.

2.1. PHARMACEUTICAL MARKETING COMMUNICATIONS

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 are the target audiences of the pharmaceutical companies. For this reason, the marketing strategies are mainly designed for the physicians not for the patients.

2.1.1. DEFINITIONS OF PHARMACEUTICAL MARKETING COMMUNICATIONS

In order to answer the question what is pharmaceutical marketing a clear definition of the concept is highly relevant. In this research the American definition of pharmaceutical marketing is relied on. According to the Prescription Drug Marketing Act (PDMA), a law of the United States federal government, “pharmaceutical marketing is the business of advertising or otherwise promoting the sale of pharmaceuticals or drugs” (U.S. Department of Health and Human Services, 2006).

One of the most widely used definitions of marketing communication (MC) was developed by Rossiter and Bellman (2005) who defined it as “marketer-originated messages, placed in various media, their purpose being to sell the brand by showing it, saying things about it, or both, in a manner that establishes the marketer’s desired position for the brand in the minds of target

customers. The above definition brings out the idea that messages sent by the marketer are controlled and developed by the marketer using various channels of communication.

Mass communication was at the heart of marketing communications from the Industrial Revolution through until the last quarter of the twentieth century (Egan, 2007). As Eganen lightened, mass communication was challenged because marketers become more interested in employing the one-to-one marketing as two major changes of direction are in effect. These changes were development of relational marketing and the advancement of technology that aided marketers to analyze and target individual consumers. This lead us to realize the importance of understanding the relationship between digital communication and traditional communication in the old media; for example, TV, radio, newspapers, magazines and billboard ads, the communication model was and is one-to-many compared to the one-to-one or many-to-many communication model in digital media, like blogs, social networks, wikis and every form of viral marketing campaign (Frey and Rudloff, 2010).

The best consideration nowadays for a company-to-customer communication is the one-to-one or the one-to-many model (Hoffmann and Novak, 1996). These models speak of a monologue in the old media and a dialog in the new media, because of the inter activity of social-network and forum users. Resulting from this, the goal in traditional media was branding by convincing the customer of a strong brand. In contrast the digital media is about communication with the potential customer or user in a dialog to create interest by using a pull strategy. In addition, it can be said that it is a supply-side thinking communication in the old media compared to a demand side thinking in the digital media, where “customer pull becomes more important” (Chaffey, 2009). Besides this, in media communication, the customer is a target in comparison to the digital media communication where the customer is a partner, by answering surveys and product rankings” (Chaffey, 2009). It has to be noted as well that mass communication (one-to-many model) is not completely dead as many big companies are still effectively applying mass advertisement. Both types of communications have their own qualities and drawbacks and marketers employ them whenever they are appropriate.

2.1.2. DIMENSIONS OF PHARMACEUTICAL MARKETING COMMUNICATIONS

According to Smith (1991) the main goal of pharmaceutical marketing is pharmaceutical care, care that is required for patients and consumers and declares safe and rational drug usage. This involves providing solutions for diseases and sickness in order to improve overall health and public's knowledge of health (Sheehan, 2007). Moreover, marketing practices are also aimed at increasing sales and profits for manufacturers and wholesalers (Rubin, 2004). Via marketing efforts directed at consumers, the pharmaceutical industry aims at expanding the market and influencing market share (Bala & Bhardwaj, 2010).

Other key goals of marketing are the exchange of information, and matching as closely as possible the marketing mix of their companies to the needs of their costumers/patients (Smith, 1991). The exchange function of pharmaceutical marketing entails the exchange of information, products, use right and payment at every stage of the supply chain as well as upwards (towards the manufacturer/wholesaler) as downwards (towards the customer) (Smith, 1991). The exchange of information is part of a larger goal of pharmaceutical marketing, communication.

Through marketing efforts, it becomes possible for pharmaceutical drug manufacturers and drug wholesalers to communicate new developments in pharmaceuticals and drugs, and to promote their products to physicians and consumers or patients. The content of the information notifies physicians and consumers about the efficacy and the characteristics of a drug, which eliminates any uncertainty and initiates the process of diffusion and early adoption of the new drug (Honka,2005). With promotion through advertising one can increase brand awareness (Yoo, 2000), this way drug manufacturers can be competitive with other pharmaceutical manufacturers in the pharmaceutical industry. The marketing communication mix, in theses regards consists of five diverse fields of communication channel: advertising, personal selling, public relations, direct marketing and Sales promotion.

2.1.2.1. Advertising

Advertising is a one way, non-personal and planned paid promotion or message aimed at influencing the attitude and behavior of a broad audience about a product or a service (Frey & Rudloff, 2010). It is the tool within the marketing communications mix with the largest reach. It

includes all types of media like television, radio, print, online advertising and any kind of ad which is meant to stimulate visual or verbal senses of the target audience. It has almost no geographical boundaries and therefore reaches the largest amount of customers while generating the lowest per-head costs in the MC. But also other sources of advertising in public places like billboards, public transportation vehicles or even restrooms are used as advertising space. Even the most unlikely places are used as a space for placing ads in order to make the customers aware of the brand, company, or a certain product. However, since it is a one-to-many type of communication, biased and low in credibility, consumers have lost trust in it. According to Mangold and Faulds (2009), consumers have become more educated and want to control messages they receive. This has led to the current shaking up of the advertising industry.

Advertisement in the pharmaceutical marketing context is a paid non-personal promotion of ideas, goods and service by identified sponsors. It includes promotion of drugs in non-personal way through literatures, magazines or banner in conferences. Catch cover of free samples and words on the packaging of gift items are also included under advertisements.

2.1.2.2. Personal Selling

Belch and Belch (2013) defined personal selling as a form of person-to-person communication in which a seller attempts to assist and/or persuade prospective buyers to purchase the company's product or service or to act on an idea. Unlike advertising, personal selling involves direct contact between buyer and seller, either face-to-face or through some form of telecommunications such as telephone sales. Personal Selling differ from most other forms of marketing communication because the message moves directly from the marketer to an individual member of the target audience, providing an opportunity for interaction and modification of the basic message to address specific target audience concerns (Percy, 2008).

Personal selling provides extraordinarily good support in order to inform customers about new products/ services as well as a close connection between the company represented by the company representative and the customer. On the other hand, personal selling is the most expensive segment of the MCs mix and the most formidable form of marketing communication. Being able, as a company to sell personally to customers and improve the relationship between the company and the customers will generate a large benefit for the company regarding the

customer relationship management. The reason for business to perform is to satisfy the needs of customers and therefore each company has to evaluate the future needs and desires of its target customers. The best solution for evaluating the needs is via personal contact with the customers, because through performing like this, companies get the necessary information from the source, which actually creates the demand. Within personal selling there is one top priority, which should be the attitude for each company performing this kind of marketing communication. This attitude is “the customer comes first”. This means the company is adapting its products/services according to the demand created by customer and does not try to create demand for the customer by selling them products the company thinks the market demands. (Percy, 2008).

Sales promotion in pharmaceutical promotions is considered as any initiative undertaken by an organization to promote an increase in sales, usage or trial of a product or service. Sales promotions are varied. Often they are original and creative, and hence a comprehensive list of all available techniques is virtually impossible. In pharmaceutical marketing these includes brand reminders like pens, paper weights, writing pads etc. Gifts of various value are also included in this category (Hesse, 2007)

2.1.2.3. **Public Relations**

Public Relations is a proactive and reactive management function used to evaluate public attitudes, identify the policies and procedures of an individual or organization with the intention of executing a program of action to earn public understanding and acceptance (Johnston, 2009). PR is an essential part of the marketing communication and has high importance in bigger organizations than small companies (Frey, 2010). Kunczik, 2002 indicated that companies can communicate PR via different channels, like sponsorship, interviews, charitable events, financial reports to shareholders, factory tours or lobbying just to mention a few. PR will help companies get closer to their customer by providing additional information and revealing more information than the company actually has to.

In pharmaceutical marketing it includes various program designs to promote the brands. It involves product launch meeting, clinical or scientific meetings, conducting a discussion by a specialist doctor related to products, sponsoring physician for conferences etc. It helps an organization and its publics adapt mutually to each other and broadly applies to organizations as

a collective group, not just a business; and publics encompass the variety of different stakeholders.

2.1.2.4. **Direct Marketing**

Direct marketing is a management concept, a multi-level communication and distribution tool (Hesse, 2007). It is accountable, interactive and used to ensure direct response from customers (Percy, 2008). A Direct Marketing campaign accesses huge recorded databases to build profiles of potential customers and provide valuable marketing information for effective direct targeting. It involves activities like direct mail, telemarketing, database management, direct response ads through the direct mail, the internet and various broadcast and print media (Belch, 2003, Hesse et al., 2007). Direct Marketing is divided into two elements, namely building a quality database over a long period and cost monitoring and controlling. The controlling elements indicate that there is much control given to the marketer as opposed to Social Media which puts control in the hands of the consumers. Scholars suggest that the main aim of direct marketing is to stimulate the targeted audience to take a now action, and create an individualized customer relationship (Hesse, et al., 2007).

The difference between direct marketing and advertising is that the company reaches out for their target customers without any intermediary channels as they are used and required in advertising in order to get into contact with customers. The different components of promotional tools used in direct marketing can be split up into direct mailing, catalogues, inserts and coupons, online marketing as well as telemarketing. If performed correctly direct marketing is seen as one of the most effective marketing communication tools, because the company creates in the long run valuable relationships with its customers, who are always well informed about changes or additional products/services in the portfolio of the company (Hesse, 2007).

The objective of direct marketing is to support the customer in a purchase decision by making them aware of new products or just to remind them about a demand, which is not yet distinct. On the other hand, there is also a negative side to direct marketing as marketing communication tool. It is an unsolicited advertisement, which is nowadays often seen as annoying by the general public. The same holds for telemarketing and direct marketing via e-mail, which is seen as spam or an invasion of privacy and often has the contrary effect for the company. Therefore,

companies should handle the direct marketing tools with caution in order not to upset their customers and weaken the relationship between the company and the customers (Mullin, 2002).

Direct marketing is a type of advertising campaign that seeks to elicit an action from a selected group of consumers in response to a communication from the marketer. The communication itself may be in any of a variety of formats including postal mail, telemarketing, and direct e-mail marketing and point-of-sale interactions. In pharmaceutical marketing it involves sending information of the brand advertisements via post, telephone, email or others (Hesse, 2007)..

2.1.2.5. Sales Promotion

Sales promotion refers to marketing and communication activities that change the price/value relationship of a product or service perceived by the target, thereby generating immediate sales and alters long term value (Schultz, Robinson and Petrison, 1998). To initiate instant sales or specific purchase, sales force and consumers are given incentives that result in tangible and non-tangible benefits (Belch & Belch, 2003; Percy, 2008; Mullin and Cummins, 2008). However, Schultz et al., (1998) posit that one disadvantage of sales promotion is that it does not change the opinion of the buyer about the product but rather initiates immediate or short term results. Marketers however misuse sales promotion in Social Media through posting promotions and not engaging with customers.

Sales promotion is one of the simpler tools within the MC Mix and is inessential part of the marketing communication for all types of companies. The objective of sales promotion is to deliver an incentive for the customer to buy the product. This incentive is normally delivered by providing free goods, gifts, discounts, coupons or samples. Everything that adds additional value to the actually purchased products is seen by the customer as a benefit and therefore appreciated by the customer. Customers have shown that they are willing to pay a premium for real value and service, which can easily be influenced by sales promotion. ((Belch & Belch, 2003)

Belch and Belch (2013) alleged that the marketing mix is now considered to be six as interactive media is becoming one of the major promotional-mix elements that modern day marketers use to communicate with their target markets. Interactive/Internet marketing is becoming imminent as technology advances in the communication technology and it led to the growth of interactive media particularly internet. Interactive media allow for a back-and-forth flow of information

whereby users can participate in and modify the form and content of the information they receive in real time. The Interactive media allowed users to perform a variety of functions such as receive and alter information and images, make inquiries, respond to questions, and, of course, make purchases. Internet has changed not only the ways companies design and implement their entire business and marketing strategies, it is also affecting their marketing communications programs. Companies develop their own websites to promote their products and services. Moreover, because of its interactive nature, Internet is a very effective way of communicating with customers. Many companies recognize the advantages of communicating via the Internet as it will allow direct interaction with customers (Belch and Belch, 2013).

The development of modern marketing communications has led to a shift towards an integrated communications approach which is assimilating different promotional tools rather than separately planning on each tool. Integrated marketing Communications (IMC), which will be discussed further in the next topic, is a unified way of using promotional tools to create a communications' synergy (Semenik, 2002).

Sales promotion is any initiative undertaken by an organization to promote an increase in sales, usage or trial of a product or service. Sales promotions are varied. Often they are original and creative, and hence a comprehensive list of all available techniques is virtually impossible. In pharmaceutical marketing these includes brand reminders like pens, paper weights, writing pads etc. Gifts of various value are also included in this category.

2.1.3. INTEGRATED MARKETING COMMUNICATIONS

A taskforce from the American Association of Advertising Agencies (the "4As") (cited in Belch & Belch, 2003) developed one of the first definitions of integrated marketing communications: a concept of marketing communications planning that recognizes the added value of a comprehensive plan that evaluates the strategic roles of a variety of communication disciplines for example, general advertising, direct response, sales promotion, and public relations and combines these disciplines to provide clarity, consistency, and maximum communications impact. Marketing communications must become more integrated the various elements of promotion devoted to informing, persuading and inducing action from a range of target

audiences must be studied, analyzed, planned and implemented in a coordinated and effective manner.

The fundamental principle of IMC is that it takes a holistic approach to communications and drives an organization to consider the total impact of all of their communications activities at any one time (Egan, 2007). Schultz and others note that the process of integrated marketing communications calls for a “big-picture” approach to planning marketing and promotion programs and coordinating the various communication functions. It requires that firms develop a total marketing communications strategy that recognizes how all of a firm’s marketing activities, not just promotion, communicate with its customers (Belch and Belch,2003). Many companies have adopted this broader perspective of IMC. They see it as a way to coordinate and manage their marketing communications programs to ensure that they give customers a consistent message about the company and/or its brands. For these companies, the IMC approach represents an improvement over the traditional method of treating the various marketing and communications elements as virtually separate activities.

Belch (2003) emphasized on the importance of IMC by outlining the very relevance of integrating promotional tools. They noted that by coordinating the marketing communications efforts of a company, one can avoid duplication, take advantage of synergy among promotional tools, and develop more efficient and effective marketing communications programs. By doing so, a company can maximize the return on its investment in marketing and promotion. They also believe that the move to integrated marketing communications reflects an adaptation by marketers to a changing environment, in terms of consumers, technology, and media.

2.2. THE DEFINITION OF PHYSICIAN PRESCRIBING BEHAVIOR

Physician prescribing behavior is a very broad concept including various dimensions. In this research the focus will be on adoption. According to the American Marketing Association (2010) adoption can be explained as a process that individuals and firms, in this specific case, physicians, go through when accepting new products. The different stages in the process of adoption include; new product awareness, gathering information, developing positive attitudes towards the product, testing it in some direct or indirect way, finding satisfaction in the trial and adopting the product into a standing usage or repurchase pattern. The process of adoption often is

also referred to as the process of diffusion, the process by which new ideas and products become accepted by a society. According to a study by Rogers (1995) this process is a social process, where social contagion initiates adoption. That is, a physician's decision to adopt a drug is influenced by their exposure to other physicians' attitude, knowledge, or behavior (Van den Bulte, 2001).

2.2.1. INFLUENCE OF PHARMACEUTICAL PROMOTIONS ON PHYSICIAN PRESCRIPTION BEHAVIOR

Beliefs about marketing efforts in the pharmaceutical industry are extremely at odds. However, an undeniable fact is that marketing efforts do have a significant impact on physicians' decision to adopt and can initiate the process of diffusion. This refers the informative and persuasive effects and elaborates on the effects of Direct to Physician marketing (DTP) and Direct to Consumer marketing (DTC).

2.2.1.2. Informative and Persuasive Effects

In the early stages of the product life cycle marketing functions more as an informative instrument, later this function becomes more persuasive. The informative effect implies that marketing serves as a communication channel, which educates physicians and exposes consumers to information that may improve their health outcomes and medical options. (Rubin, 2003). The persuasive effect eventually will lead to overuse, misuse and wrong prescription of drugs (Chetley, 1995). It will put extra pressure on physicians to prescribe onerous expensive drugs even when a cheaper generic drug would be appropriate (Mot, 2005). These findings are in accordance with the findings in former research by Caves & Hurwitz (1988) and Rizzo (1999).

2.2.2. THE EFFECTS OF DIRECT-TO-PHYSICIAN MARKETING

Physician prescription behavior is affected by pharmaceutical marketing in a significant, positive way. Marketing efforts create awareness among physicians about new drugs and their specifics (Carter, 2001). Due to the promotional activities directed at physicians, physicians learn and experience the effectiveness of the new drugs more rapidly when exposed to marketing communication.

Pharmaceutical marketing can have direct effects and indirect effects. Direct effects, also called reminder effects, are effects that directly influence physician adoption of drugs, here goodwill, achieved by constant interaction between pharmaceutical representatives and physicians, influences the preferences for certain drugs and products. The direct effects positively influence physicians' probability to prescribe (Honka,2005). Indirect effects can be explained as effects that indirectly affect physician adoption. Important is the perceived product quality, marketing communication makes it possible for consumers to change attitudes and reduce uncertainty about the exact quality of a new drug through a process of learning (Narayanan, 2005).

Another important influence that direct to physician marketing practices on the adoption of new drugs is social contagion. That is, physicians are influenced by exposure to other physicians' attitudes, knowledge, or behavior when deciding to adopt a drug (Van, 2001). When a physician makes a decision to adopt he/she influences other physicians near him/hers (Berndt, 2003).

A study by Wieringa (2010) suggests that marketing effects are largest in size in the period right after the introduction of a brand or a new drug and that the marketing efforts directed at physicians become less effective at a later stage in the product life cycle. This can be explained by the fact that most information is dispersed in the early stages in the product life cycle of a new drug. In addition, a study by Srinivasan (2001) suggests that up to a certain point marketing communication directed at physicians positively affects the prescription probability of a drug, when passing that point excessive marketing efforts generate adverse effects.

2.2.3. THE EFFECT OF DIRECT-TO-CONSUMER MARKETING

With Direct-to-consumer advertising patients are provided with information about a (new) drug. Pharmaceutical companies try to persuade consumers/patients to discuss their specific brand when visiting their doctor, which indirectly makes physicians aware of the new brand. Studies suggest that physicians' probability of adopting a drug is significantly affected by patient requests. For instance, a study by Posavac (2004), shows that a physician's probability to prescribe or adopt a drug increases when a patient is positively influenced by DTCA, as the patient is likely to search for more information about the drug. However, a physicians' reason not to describe a requested drug is also relevant in this context. For example, when a physicians'

belief is that the drug is not right for the patient and another drug is more appropriate or when a less expensive drug is available on the market that has the same specifics.

Despite of positive effects of Direct-to-consumer advertising, negative effects are as well relevant when assessing the effect on adoption and diffusion of drugs. Patient's drug requests can put pressure on physicians, which can lead to the adoption and prescription of a drug, even though when the physician believes the drug is less appropriate and that there may be a comparable drug available that is less expensive. This will lead to overuse, misuse and wrong prescription of drugs through a persuasive effect. A survey conducted by the American Association of Pharmaceutical Scientists (Pirisi, 1999) reported that 91% of the physicians felt pressure for complying with patient requests, only 9% felt no pressure, 6% felt a lot of pressure and, the remaining 85% felt some or little pressure.

In summary of the above classification, the pharmaceutical marketing influences greatly the prescription behaviors of physicians and they are more keen prescribing the drug with relate to detailing skills, sampling of the products, scientific materials, relationship with the doctor, continuous meeting and CME meeting conducted as a promotional tool by the pharmaceutical companies. Effectiveness of different method such as frequency of visit, quality of products, skillful details of product and gifts, varies widely physicians to physicians and sales personnel to sales personnel. Some of the major factors are summarized as below.

Frequency of visit to the physicians by the sales personnel and personal relationship of the physician with the medical representatives are mostly influence the prescription behavior of the physicians. Itis a quiet simple equation. In Ethiopia, there are more than 125 pharmaceutical companies with more than 10000 brands (FMHACA, 2017). For example, calcium, generic have been than 15 brand name. Which one will a doctor write for his/her patient? Answer is simple, the brand which is more visited to the physicians. That's why frequency of visit and personnel relation is most important than others.

A physician always prefers the quality of the product for his patient. That's why quality of the product is so much important. A product with less or no quality not suitable for long run, with quality product sales personnel also gets extra confident to detail the brand in front of the physicians. Same thing to the physicians also, because they can write it freely.

Skillful detail of a product is necessary to promote a drug, especially for the newer molecule. New drug molecules are not really familiar to the physicians. A perfect detailing of that drug can create the opportunity to make a space into physician's prescription. Beside this new information of existing product can be more accepted by a skillful detailing.

Gift with high value are always appreciated by the physicians. Sales personnel are always tried to find out the hidden need of a physicians. If they find it and solve it with proper item, then it will be a perfect gift to them and this may contribute in the prescription a lot. In medical institutes in Bangladesh, conference occurs in very frequent basis. Sponsoring this event are also an excellent way to get into the good list of a physicians. That's why it is considered as somehow effective to make good relation to physician's and this also reflects into the prescription.

2.3. EMPIRICAL FINDINGS OF RELATED STUDIES

Related studies conducted on the effect of promotional strategies on the prescription behavior of physician have been briefly stated as below.

Prescription Behavior, Leo and Kangis (2000) examine and presented how the medical doctors decide about their prescription pattern of different medicines. According to these authors, of particular interest is the assessment of the extent to which behavior is entirely volitional and thus completely under the physician's control. This would determine the extent to which external stimuli, such as communications from the pharmaceutical industry and the media, have any influences or not. The analysis of the influence of different factors has found that prediction of intended prescription behavior increases significantly when behavioral control is added to the measurements of attitude and subjective norm. In circumstances of high behavioral control, the theory of planned behavior seems to collapse in favor of the theory of reasoned action (Leo and Kangis, 2000).

In another research Leo and Kangis (2002) presented a report on the evaluation of two models, of their ability to explain the influence of cost containment measures of governments and sick funds on the prescription behavior of physicians. Real prescription behavior was measured at

Pharmacy level. The comparison of the models carried out by the authors is significant for the pharmaceutical industry as decomposing the constructs of normative and behavioral beliefs helped generate additional information towards understanding each factor's influence on behavioral intention and behavior. The decomposed composite attitude behavior model proved more helpful, in this instance, than that based on the theory of planned behavior (Leo and Kangis, 2002). Moreover, when modeling behavior, it is necessary to evaluate cultural variables. According to Schneider (2002) in today's international markets, problems typically arise if international corporations develop behavior strategies locally and then try to implement them globally.

According to the author who has carried out the research, this is justified since advances in transportation and communication have homogenized the middle-class culture to an extent that cultural differences can be neglected in international management. Schneider (2002) state that the interpretation of the simulations suggests the elimination of unified behavior prescriptions in multinational corporations, at least as long they have not been tested for their affective meaning. According to the author, based on the simulations, it can be further speculated that managers who spoil their images by following official, but culturally inappropriate, behavioral guidelines are likely to counterbalance the negative effects with informal, culturally appropriate behavior.

Different researchers confirms influence of marketing communication on physicians prescription behavior (Roshni,2000; Prosser E. 2003; Wieringa, 2010) therefore it can be stated that physicians' perception behavior of marketing mix is very high, their relationship is significant with pharmaceutical company or their approach to medicine strengthen. In other words, the marketing communication affect positive influences physicians' prescription

Pharmaceutical strategies in the changing world have to become even more flexible and use various opportunities offered by the marketing mix. Therefore, Rollins et al. (2010) analyses the recent trend in direct-to-consumer advertising has been the increasing presence of non-branded, or help-seeking, ads. In these ads there are not mentioned the products are branded, the only identity is the name of manufacturing firm is the identifier. The results of this research show that subjects who either viewed the non-branded ads or serious type of disease involvement had more positive behavioral intentions. It is significant that intent did not correlate to the predefined

behavior. However, those with higher behavioral intentions performed the behavior significantly more. On the basis of the results of the research, it can be concluded that non-branded ads induced greater behavioral intentions, which could lead to more physician discussions and increased information-seeking behavior (Rollins et al., 2010). In addition, according to Singh (2008) the suggested propositions highlight the importance for pharmaceutical companies to leverage resources, bring complementarities in promotional activities and capitalize on the positive word-of-mouth references of physicians to increase the effectiveness of their sales force in influencing physicians.

Linking between marketing mix strategy, perceived value (mediating effect), and satisfaction (prescription behavior). There are a number of studies, which analyze the physicians' satisfaction related to, for example, organizational factors (Stevens et al., 1992; Gibson and Borges, 2009; etc.), quality of medicines (Steele et al., 2002) and relationship between the physician and the pharmaceutical sales representative (Clark et al., 2011). However, Singh (2008) notes that influencing physician prescription behavior has always proven elusive for pharma companies. This is especially so in these changing times when physicians are tightly pressed for time to spare on attending to sales calls from pharma sales reps. While the individual studies analyze interrelations of indirect impact and satisfaction in various fields of industry and services, there is still a lack of research of this relationship in the area of pharmaceuticals, and in particular the influence of marketing mix strategies on the physicians' prescription behavior. After evaluation of the indirect impact of perceived value on the relationship between marketing factors and the influence of physicians' satisfaction on the prescription behavior, the strategies of pharmaceutical companies can become more flexible, as a strong relationship was found among the marketing mix elements and customer satisfaction (Sherwood and Nordstrom, 1998). Therefore, the aim of customer satisfaction and loyalty is an important objective of various companies (Yuan, Wu, 2008; Tarasi et al., 2013), which is pursued through indirect impact or perceived value (Mencarelli and Rivière, 2014). Various studies confirm a strong influence of marketing mix strategies on prescription behavior of physicians and patients (Basara, 1994; Sagar and Kalaskar, 2012; Obaidat and Al Ghadeer, 2011; Su et al., 2013; etc.), therefore it can be stated that physicians' perception of marketing mix is very high, satisfaction is of a proper level and their relationships with pharmaceutical company or their approach to medicine strengthen. In other words, the mediation effect positively influences physicians' satisfaction.

2.3.1. UNDERSTANDING PHARMACEUTICALS INDUSTRY

Pharmaceuticals play a vital role in maintaining the health of people and ensuring their productivity in all areas of life. In their effort to maintain a healthy way of life people invest a large proportion of their wealth to acquire effective pharmaceutical products manufacturers, distributors and retailers. The primary function of the research-based pharmaceutical corporations is to create value by discovering and producing effective medicines, vaccines and services that improve health and wellbeing of people by pharmaceutical products sold in markets at a profit. These products increasing shareholder's values as well as significantly affect the quality and protection of life in places where the services are better located. (Hesse, 2007).

In the past 60 years, innovation and technology have impacted global health. According to the Human Development Report 2016, growth in life expectancy that took over 300 years to achieve in developed countries has been secured by developing countries in just half a century, thanks largely to innovations in medicine and other public health interventions.

Intellectual property has played a key role in this progress. Discovering and developing a new drug, conducting clinical trials and gaining regulatory approval can cost around US\$1 billion. Less than 1% of the compounds examined in pre-clinical stages are cleared for testing in human beings, and only 22% of compounds entering clinical trials successfully reach development stage and regulatory approval. Without patents, it is estimated R&D outlays would be reduced by 64%, jeopardizing the well-being of people and the innovation process itself. Despite challenging business conditions, the industry undertakes investments that are considerably riskier than those in other high-technology sectors. By investing billions of dollars and thousands of scientist-hours, it pushes the limits of science, improves global health and contributes to the prosperity of society.

As the Pharmaceutical industry matures, it faces a multiple of new challenges: the growth of generics, a slowdown in new blockbuster drugs, increased oversight from regulatory bodies worldwide. Today, the cost of developing a single drug amounts to over USD 1.3 billion compared to USD 138 million in 1975. This ten-fold increase reflects the various technical, regulatory and economic challenges facing R&D on the pipelines. Despite multiple challenges facing the multinational pharmaceutical companies, they are involved in the support of health

care development by way public-private partnerships. They have reliable accesses to pharmaceutical outputs, sales percentage and employment in the industry. In a number of cases, international corporations and foundations have contributed drugs or products free of charge to help in disease eradication. For example: SmithKline Beecham has made a US\$500 million commitment to WHO of its drug Albendazole, used to treat lymphatic filariasis (elephantiasis) are therefore able to change society and their environment tremendously.

2.3.2. Challenges of Pharmaceutical Companies operating in Ethiopia

The Ethiopian pharmaceutical market growth rates are expected to be significantly higher than the overall growth of the global pharmaceutical market. It is expected to have a compound Annual Growth Rate (CAGR) of about 5%. Although the Ethiopian pharmaceutical market holds great potential, the market itself poses many challenges. Unpacking Market Challenges Ethiopia has a highly price sensitive market. The affordability of pharmaceuticals is generally limited for the vast majority of the population. As most pharmaceutical products are supplied by the government, inexpensive and quality medicines are the number one factors considered during the issuing of tenders. High price sensitivity within the market increases competition and supports the demand for low-cost products. Generic pharmaceutical companies from China and India are able to leverage on their economies of scale advantage and reduce the price of their medicines, while local and other international pharmaceutical companies often find it challenging to do the same.

Pricing is highly unregulated within the market. Supplier mark-ups are uncontrolled and the consumer ends up paying unreasonably high prices for pharmaceutical products. This lack of price control within the supply chain restrains the growth of the pharmaceutical market by limiting the access of essential medicines to the population. Although a number of infrastructure improvements have been made in recent years, challenges for conducting an efficient business operation in Ethiopia prevail. Inadequate road networks disrupt the effective transportation of finished products as well as the distribution of raw material. Communication networks are also often interrupted and unpredictable. Local manufacturers often face the burden of shortages in power supply, therefore resulting in disrupted manufacturing operations.

In Ethiopia broadcast advertising is prohibited. Pharmaceutical companies face more challenges as adopting local language and ensuring nothing is lost in translation, also have to ensure no religious sentiment is harmed while promoting their brand

Another significant challenge faced within the Ethiopian market is related to the subject of currency. Ethiopia currently faces shortages of foreign currency. The issue of opening Letters of Credit, for the processing of international business, poses challenges as only selected sectors of the economy is prioritized. This adversely affects the purchase of pharmaceutical product or raw material from international markets there by influence the progress domestic market. Ethiopia presents a highly regulated business environment and, more specifically, strict regulations within the pharmaceutical sector pose many challenges. Distributors also suffer the consequence of not gaining access to the use of government credit system; hamper them to provide constant supply of pharmaceutical products to relevant retailers. This creates a negative perception towards suppliers within the retail industry.

Weak administration boards often lead to delays in product registration. The listing of products could take up to 2 years before reaching the shelves of retailers. Marketing of pharmaceutical products forms an essential element of generating brand promotion and awareness. Social marketing is often used as an effective tool for creating awareness of healthcare issues, such as family planning and HIV/AIDS. In comparison to various other African countries, Ethiopia's marketing dynamics are seemingly different. For effective marketing of products, marketing material should be country specific. Ethiopians relate to advertising that represents their respective culture. The use of inappropriate marketing material may be unfavorable for the promoted brand. Additional challenges existing within the market are the poor labor skills and the slow adoption of new technologies. Although the Ethiopian government has embarked on various initiatives to promote skills development in the country, specialized skills within the pharmaceutical sector are limited. Technology applications are inadequate, thus limiting the advancement of novel concepts and innovation within the market. Local manufacturing accounts for only 20% of the pharmaceutical demands of the country.

The mega Pharmaceutical manufacturing industries in Ethiopia include Addis Pharmaceutical Factory (APF) and Ethiopian Pharmaceutical Manufacturing Factory (EPHARM) who are also competing to larger share of the market available by government tenders. Domestic

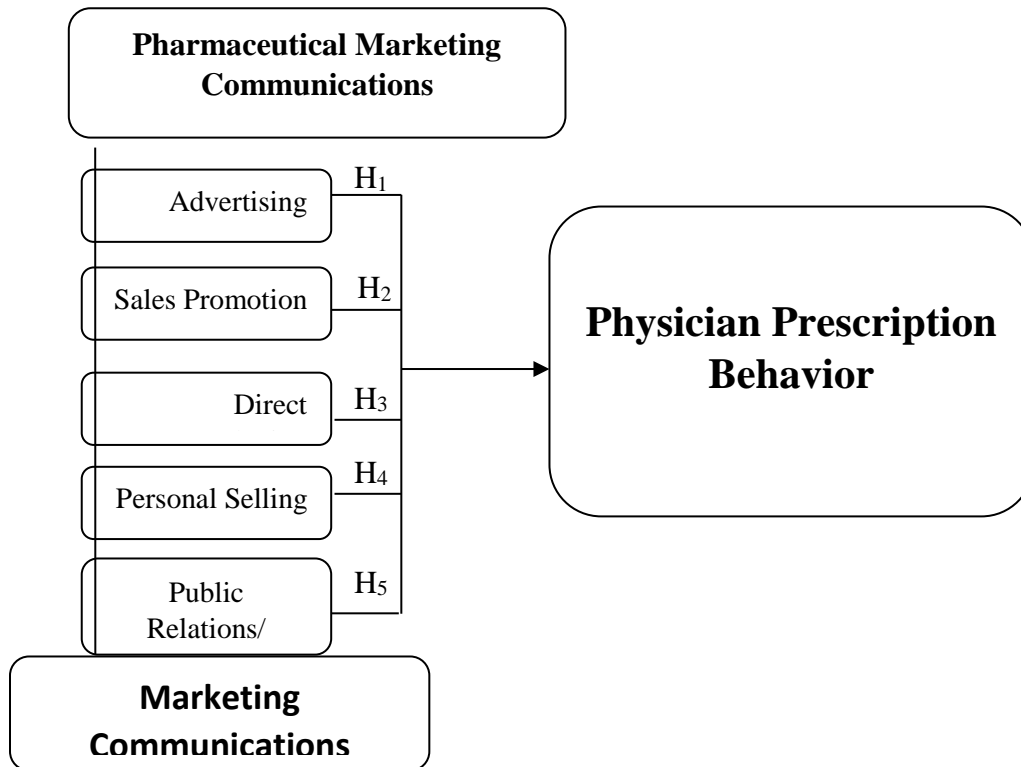
manufacturers are at a constantly in struggle to coup with popular demands. However due to the lack of specialized skills and technology, their ability to maintain basic manufacturing standards, does limit them to control government tenders. Although these challenges remain to existent and known to hinder growth of many pharmaceutical companies, the impact of these challenges on the market is falling. This implies that Ethiopia has high potential for many opportunities. Large multinational pharmaceutical companies, such as GlaxoSmithKline (GSK), AstraZeneca and MSD, have already managed to gain a firm footing, featuring prominent roles in both the public and private sectors.

2.4. CONCEPTUAL FRAMEWORK

Review of literature has revealed significant influence of marketing promotion tools on physician prescribing behavior. The key role of these promotion techniques is to increase the number of prescriptions made. Available evidence suggests that that marketing strategies have impact on physician prescribing behavior either in the short – term or in the long–term. However, it is not clear how these factors affect prescribing behavior in Ethiopian context.

Even in the relatively developed research stream on marketing efforts and prescription behavior, controversy has been raised often. Wholesome authors have found significant effects of marketing tools on physician prescribing attitude, others have reported negative effects. Moreover, the effect of promotion on prescription is not linear and shows diminishing returns or no significant effect or heterogeneity in physician responsiveness. Although it is widely stated that marketing instruments increase prescription by physicians, this influence is thought to be, at most modest by some researchers.

The overall consensus is that marketing efforts frequently have a positive effect on physician prescribing. Narayanan et al (2008) have argued that marketing efforts may actually have both an informative role (e.g., reducing cognitive uncertainty) and a persuasive role (e.g., inducing positive effect). Both roles play a part in determining which drug to prescribe. As synopsis, the study conceptually is only delimited on the effects of marketing communications such as advertising, sales promotion, direct marketing, personal selling and public relations on the physician prescription behavior in Ethiopian context. Thus, the conceptual frame work of the study is depicted as below.



(Source: Yoo and Donthu, 2000)
Figure 2.2 Conceptual Framework

2.5. HYPOTHESIS FORMULATION

Referring the related literatures reviewed, forty marketing methods are noticed. Then, pharmaceutical marketing strategies are classified under five promotional strategies namely Advertisements, Sales promotion, Public relations, Personal selling and direct marketing. Besides, a number of studies in the field have proved the presence of significant effect on PPB by properly implemented pharmaceutical promotional strategies. The definitions, of these strategies, used in this article follow the descriptions by Kotler (1991) and the hypotheses are formulated as follows.

Advertisement - is a paid non-personal promotion of ideas, goods and service by identified sponsors. It includes promotion of drugs in non-personal way through literatures, magazines or banner in conferences. Catch cover of free samples and words on the packaging of gift items are

also included under advertisements. Thus the following hypothesis has been formulated to evaluate the effect of advertising on PPB:

H₁ -Advertising has significant effect on physician prescription behaviors

Sales promotion is any initiative undertaken by an organization to promote an increase in sales, usage or trial of a product or service. Sales promotions are varied. Often they are original and creative, and hence a comprehensive list of all available techniques is virtually impossible. In pharmaceutical marketing these includes brand reminders like pens, paper weights, writing pads etc. Gifts of various value are also included in this category. Thus the following hypothesis has been formulated to evaluate the effect of Sales promotion on PPB:

H₂ - Sales promotion has significant effect on physician prescription behaviors

Direct marketing is a type of advertising campaign that seeks to elicit an action from a selected group of consumers in response to a communication from the marketer. The communication may be in varieties of format including postal mail, telemarketing, and direct e-mail marketing and point-of-sale interactions. In pharmaceutical marketing it involves sending information of the brand advertisements via post, telephone, email or others. Thus the following hypothesis has been formulated to evaluate the effect of direct marketing on PPB.

H₃ - Direct marketing has significant effect on physician prescription behaviors

Personal selling is one kind of direct marketing. It is the detailing by the promotional personnel of the brand and the way the sales personnel handle objects and use visual aids. Drug sampling, price benefit, buy one get one free comes under the domain of personal selling. Thus the following hypothesis has been formulated to evaluate the effect of personal selling on PPB:

H₄ - Personal selling has significant effect on physician prescription behaviors

Public relations help an organization and its publics adapt mutually to each other. Public Relations broadly applies to organizations as a collective group, not just a business; and publics encompass the variety of different stakeholders. In pharmaceutical marketing in includes various program designs to promote the brands. It involves product launch meeting, clinical or scientific meetings, conducting a discussion by a specialist doctor related to products, sponsoring

physician for conferences etc. Thus the following hypothesis has been formulated to evaluate the effect of public relation on PPB:

H₅—Public relation has significant effect on physician prescription behaviors

CHAPTER THREE

3. RESEARCH MEYHODOLOGY

This chapter presents the research approach, research method, research design, population and sampling, data collection instruments, reliability and validity, data analysis techniques and ethical considerations.

3.1. RESEARCH APPROACH

Research can be classified as qualitative research and quantitative research when the issue at hand is the approaches to be employed in conducting research. Qualitative research involves studies that do not attempt to quantify their results through statistical summary or analysis. Qualitative research seeks to describe various aspects about behavior and other factors studied in the social sciences and humanities. In qualitative research data are often in the form of descriptions, not numbers. Quantitative research is the systematic and scientific investigation of quantitative properties and phenomena and their relationships. The objective of quantitative research is to develop and employ mathematical models, theories and hypotheses pertaining to natural phenomena. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of an attribute (Abiy, 2009). As a result, to realize this relationship, the research mainly applied quantitative type of research design.

Quantitative research involves attaching numbers to relationships between variables (Kothari, 2004). Quantitative research uses objective measurements and statistical analysis of data. Thus, in this paper both Explanatory and inferential statistics methods are applied. The reason is that these methods are suitable to explain and interpret relations of variables in the study. Descriptive analysis refers to statistically describing, aggregating, and presenting the constructs of interest or associations between these constructs and inferential statistics are the statistical procedures that are used to reach conclusions about associations between variables. Because the research typically concentrates on measuring or counting and involves collecting and analyzing numerical

data and applying statistical tests, the researcher used the quantitative research design. The study used cross-sectional survey.

3.2. RESEARCH DESIGN

Research can be classified as descriptive and explanatory depending on the specific purpose that the research tries to address. Descriptive research sets out to describe and to interpret what is. It looks at individuals, groups, institutions, methods and materials in order to describe, compare, contrast, classify, analyze and interpret the entities and the events that constitute the various fields of inquiry. Surveys gather data at a particular point in time with the intention of describing the nature of existing conditions, or identifying standards against which existing conditions can be compared, or determining the relationships that exist between specific events. (Abiy, 2009). The researcher uses descriptive and explanatory types of research methods and Surveys are used as method to gather information from the sample population.

3.3. POPULATION AND SAMPLING METHOD

3.3.1. POPULATION

The study population constitutes the prescribing physicians that are currently practicing in both public and private hospitals in Addis Ababa. According to federal ministry of health (FMoH), there are a total of 144 hospitals in the country of which 90 are run by both federal and state governments. Whereas, among 58 registered active hospitals in the vicinity of the capital city, 14 are public owned. Including clinics and other health facilities, there are currently a total of 1,529 general practitioners, specialists and counselors are serving the health sector of the city, of which 849 working in the stated hospitals. However, a total of 6 publics (Black Lion, Minilik, Yekatit, Zewditu, St. Paul, and Amanuel) and 10 prominent private (MCM Korean, St. Gebriel, St. Yared, International cardiovascular, Hayat, Girum, Landmark, Addis Specialized, Kadisco, Africa General) hospitals are framed as the populations of the study. The reason for the selection of these hospitals are based on number of physicians (more than 20) accommodated and their outstanding performance ranked by the FMoH in 2017. The researcher believes that their current work places with regard to the practice of marketing from pharmaceutical companies is

substantially higher as seen by the higher number of physicians and the concentration of pharmaceutical company offices in the area. The total list of prescribers in both public and private setups was obtained from FMHACA for Addis Ababa.

3.3.2. SAMPLE SIZE

Sampling is the process of selecting a number of study units from a defined study population. Often research focuses on a large population that, for practical reasons, it is only possible to include some of its members in the investigation. Because of the absence of a sampling frame in the authorities and the accessibility of the selected respondents within a specified time period, non-probability sampling was used even though sampling bias (error) incurred affects the credibility of the study to some extents (Abiy, 2009). The sample size was determined based on the sample determination method developed by Carvalho (1984) irrespective of their demographic characteristics. Although sample size of 125 respondents were enough for medium scale study, a total of 160 respondents was selected from those 6 public and 10 private hospitals, implying 10 representative physicians from each hospital. Purposive (convenience and judgmental) non-probabilistic sampling approach was applied as the targets are general practitioner, specialist or counselors; and willing to participate in the survey.

3.4. DATA COLLECTION INSTRUMENT

The research involves numerical or statistical data. As the research is mainly objective, emphasis is on the quantifiable survey data. Data was collected from physicians in the selected hospitals using survey through structured questionnaire. A questionnaire is a type of survey where respondents write answers to questions posed by the researcher on a question form. A number of respondents are asked identical questions, in order to gain information that can be analyzed, patterns found and comparisons made. This is to make the research to the point and avoid unnecessary concepts being raised which makes the research unable to measure the constructs under study. The questionnaire was prepared to be inclusive of the constructs measured in the study.

The questionnaire have three sections. The first section covers the demographic profile of the participants like age, sex, academic status and specialty. The second section is structured on a likert scale of 1-5 to show their degree of agreement or disagreement to the sentences about the

constructs under study (promotional strategy and prescription behavior). The questionnaire was adopted from a previous study about the same construct under study and modified to the hospital sector without modifying the concepts in the construct.

3.5. RELIABILITY AND VALIDITY

3.5.1. RELIABILITY

To evaluate the research instruments, reliability is one of the major criteria. Reliability estimates the consistency of the measurement or simply, the degree to which an instrument measures the same way each time it is used under the same conditions with the same subjects. Reliability of the study shows the extent to which the researcher can confidently rely on data obtained through the use of instrument adopted to gather data, for the research work. It actually shows the extent to which the researcher can confidently rely on the information gathered through the use of research instrument (questionnaire) adopted to gather data for the research work.

In this research Cronbach's alpha was used to test the reliability of the measures. Cronbach's alpha is an index of reliability associated with the variation accounted for by the true score of the underlying construct. Construct is the hypothetical variable that is being measured (Hatcher, 1994). Alpha coefficient ranges in value from 0 to 1, may be used to describe the reliability of factors extracted from dichotomous (that is, questions with two possible answers) and/ or multi point formatted questionnaires or scales (that is, rating scale: 1= poor, 5=excellent). The higher the score, the more reliable the generated scale is. Nunnally (1978) has indicated 0.7 to be an acceptable reliability coefficient.

3.5.2. VALIDITY

In selecting a relevant measure for an outcome variable, it is critical that logical inferences can be made from the operation upon which the measure is based to the theoretical constructs relevant to the study. Construct validity refers to the degree to which inferences of this type can legitimately be made. The content and construct validity should be checked to ensure the quality of the research design. Hair et al. (2007) defined the validity as the degree to which a measure accurately represents what it is supposed to. Validity is concerned with how well the concept is defined by the measure(s). He also defined the content validity as the assessment of the correspondence between the individual items and concept. The study addresses content validity

through the review of literature and adapting instruments used in previous research which is marketing communication and prescription behavior questionnaires repeatedly refined and corrected in different field works (Duggirala et al., 2008).

3.6. DATA ANALYSIS TECHNIQUES AND DATA PRESENTATIONS

Both descriptive and inferential statistics was used to analyze the quantitative data gained through structured questionnaire. All the variables was coded and entered into the SPSS to analyze data obtained through questionnaires.

Descriptive statistics is used to describe the usefulness of the data set and examine relationships between variables. In order to describe the data, preliminary descriptive statistics such as frequency, percentages, and mean scores was computed. To view the internal consistency of the scale items, Cronbach coefficients (alpha) are computed.

Multiple regression analysis was performed using the five selected marketing communications dimensions as independent variable and the physician prescription behavior as dependent variable. The basic aim is to see the extent to which PPB is affected by the MC dimensions shown in terms of coefficient of determination (R square value), the regression coefficient (Beta coefficient) and the P-values for the significance of each relationship.

Correlation coefficients was used to quantitatively describe the strength of the association between the variables. According to Hair et al. (2002) the Pearson correlation coefficient measures the degree of linear association between two variables. It varies between -1.00 to +1.00, with 0 representing absolutely no association between two variables, and -1.00 or +1.00 representing a perfect association between two variables negatively and positively respectively.

3.7. ETHICAL CONSIDERATIONS

Confidentiality of their response of the respondents was maintained at a high level to make the respondents feel comfortable so that their responses are considered non-biased and reflect the truth about the situation in question. The voluntariness of the participants was also taken into consideration.

In this study, there are descriptive questions about the respondent's' age and gender but this information is not enough to identify the person. The second ethical principle to consider is the lack of informed consent. The potential participant should receive as much information needed to make a decision whether to participate or not. In this study the survey contain information about the research and contact details for further questions. The third ethical principle concerns the invasion of privacy. The respondent might find some questions too private and do not wish to make the answer public. In this study the respondent has the opportunity to skip a question if it is judged sensitive. Furthermore, this study is not of a sensitive nature which enhances the respondents' willingness to answer. The fourth ethical principle refers to deception which occurs if respondents are led to believe that a research is about something else that what is. Recording techniques was be used in this study. After taking these ethical principles into considerations and fully living up to the requirements this study can be classified as ethical.

Data collection is, thus, planned to start after official letter from St. Mary University, and ethical clearance from respective hospitals' public relations is secured after reviewing the proposal. All respondent participated in the study voluntarily and they sign a written informed consent before going through the questionnaire. Participants are guaranteed confidentiality of the information and right to refuse participation or quit participation at any time during their involvement in the study. There is no benefit provided to participate in the study.

CHAPTER FOUR

4. DATA ANALYSES AND PRESENTATION

This chapter presents the data analysis and discussion of the research findings. The data analysis was made with the help of Statistical Package for Social Science (SPSS 21.0). The demographic profile of the study sample, promotional strategies ranking and respondents' prescription have been described using descriptive statistics. To test hypothesis and achieve the study objectives, different inferential statistics were employed. By using T-test and ANOVA the mean difference between demographic profile of respondents and underlying factors of physician prescription behavior were analyzed. Multiple linear regressions were also employed to test hypothesis and achieve the study objective that focuses on identifying the most important promotional tool of pharmaceutical suppliers that enhance the prescription behavior of the physician. Pearson correlation coefficient and Cranach's alpha were also used to test goodness and internal consistency of the measure. Results are presented in graphical and tabular format based on the responses given by the respondents.

In order to make the collected data suitable for the analysis, all questionnaires were screened to be complete. Out of the 160 distributed questionnaire 88.75% (142) response rate has been obtained. During data editing, the collected questionnaires was checked for errors and 9 incomplete questionnaires were identified and discarded. Therefore, out of the 142 collected questionnaires, 133 were found to be valid and used for the final analysis.

4.1. DESCRIPTIVE ANALYSIS

To provide a clear picture regarding the study participants' demographic characteristics and their responses for the given questionnaires, descriptive analyses of respondents' profile and their respective perceptions on promotional activities have been described below.

4.1.1. DEMOGRAPHIC CHARACTERISTICS

Demographic analysis included sex, age, specialty, experience and practice setting. These variables help to identify the background of the respondents. Referring respondents' profile, analysis of the data collected revealed that 109 (81.2%) of respondents were male and 24 (18.8) were female. The result revealed that 71 (53.4%) respondents were between the age of 31 and 45 years. Of the respondents, 33 (24.8%) were below the age of 30 years. And the proportion of respondents between the age of 46 - 60 years and were 20 (15.0%) and 9 (6.8%) respectively. Almost one third, 44 (33.1%) of the respondents reported that they had 5-10 years of work experience, 31 (23.3%) respondents claimed that they had less than 5 years of work experience. The other 22 (16.5%) respondents indicated that they had worked for 11-15 years; and the rest 36 (27.1%) respondents claimed that they had worked more than twenty years. Looking at the specialty of participants, 49 (36.8%) were GPs; 54 (40.6%) have specialized; 16 (12.0%) were consultants and the rest 14 (10.5%) constituted others (intern, residents, etc.). Regarding their current practice settings, 70.0% were practicing at private hospital, 38.3% at public hospitals whereas 8.3% works at both institutes. These imply that majority of the respondents were male physician in the range of 30 – 45 years old specialist working at private health care with 5 – 10 years of work experience.

Table 4.1 Demographic Characteristics of Respondents

	Description	N	Frequency	Percent (%)
Sex	Male	133	109	81.2
	Female	133	24	18.8
Age	Below 30 years	133	33	24.8
	30 – 45 years	133	71	53.4
	46 – 60 years	133	20	15.0
	Above 60 years	133	9	06.8
Specialty	General practitioner	133	49	36.8
	Specialist	133	54	40.6
	Consultant	133	16	12.0
	Other	133	14	10.5
Practice Setting	Public	133	51	38.3
	Private	133	93	70.0
	Both	133	11	08.3

Experience	Less than 5 years	133	31	23.3
	5 – 10 years	133	44	33.1
	11 – 15 years	133	22	16.5
	More than 15 years	133	36	27.1
Total		133	133	100.0

(Source, Own Survey, 2018)

4.1.2. MARKETING COMMUNICATIONS

Advertisement is a paid non-personal promotion of ideas, goods and service by identified sponsors. It includes promotion of drugs in non-personal way through literatures, magazines or banner in conferences. Catch cover of free samples and words on the packaging of gift items are also included under advertisements (Pitt, 1988). Referring Table 4.2, the results revealed that majority (mean, 3.69) of the respondents agreed on firms' drugs promotion through scientific journals encourage them to prescribe a specific brand drug. However, words on the packaging of gift items and the constant information from awarded scientific journals and scientific publication didn't encourage physicians to prescribe the drug as rated with mean scored value of 2.66 and 2.43 respectively. Advertising on catch cover of free samples took the least position as voted with mean scored value of 2.29. The average mean score (2.77) of pharmaceutical advertising except continuous information provided by on different awarded scientific journals didn't convince them to prescribe a specific drug brand.

Table 4.2 Respondents' perception on Advertising

Advertisement	N	Mean	Std.
Firms promote drugs through scientific journals encourage physician to prescribe drug	133	2.29	0.914
Advertising on catch cover of free samples help physicians prescribe the drug	133	2.43	0.791
Words on the packaging of gift items encourage physicians to prescribe the drug	133	2.66	0.850
The constant information from awarded scientific journals and scientific publication	133	3.69	0.548
Average Advertising score	133	2.77	0.776

(Source: Own Survey, 2018)

Sales promotion is any initiative undertaken by an organization to promote an increase in sales, usage or trial of a product or service (Aker, 1999). Sales promotions are varied. Often they are original and creative, and hence a comprehensive list of all available techniques is virtually impossible. In pharmaceutical marketing these includes brand reminders like pens, paper weights, writing pads etc. gifts of various values are also included in this category. In this regard, results on Table 4.3 showed that majority (mean 4.24) of the respondents strongly agreed on the firms' interest to educate the physicians on new medicine through financing their participation to international scientific conference motivates physicians to prescribe a specific brand. Similarly, they also expressed their strong agreement (mean 4.23) on financial incentives offered by pharmaceutical representatives, given that there are similar competitive medicines; motivate physicians to prescribe their respective brands. Add value incentives such as office practice items, patient record forms, and etc. influence physician's prescription behavior given that there are competitive alternative medicines was also perceived positively as rated with mean scored value of 3.61 whereas, the respondents denied (mean 2.62) low cost gifts (pen, paper weights, writing pads, etc. depicted drug brand) from pharmaceutical suppliers remind them drug brand while prescribing.

Table 4.3 Respondents' perception on Sales Promotion

Sales Promotion	N	Mean	Std.
Low cost gifts (pen, paper weights, writing pads, etc. depicted drug brand) from pharmaceutical suppliers remind drug brand while prescribing	133	2.62	0.738
Financial incentives, given that there are similar competitive medicines motivate physicians to prescribe	133	4.23	0.988
The firms interest to educate the physicians on new medicine through financing their participation to international scientific conference	133	4.24	1.003
Add value incentives therefore office practice items, patient record forms, etc. given that there are competitive alternative medicines	133	3.61	0.664
Average Sales Promotion score	133	3.71	0.848

(Source: Own Survey, 2018)

Direct marketing is a type of advertising campaign that seeks to elicit an action from a selected group of consumers in response to a communication from the marketer. The communication itself may be in any of a variety of formats including postal mail, telemarketing, and direct e-mail marketing and point-of-sale interactions (Aker, 1999). In pharmaceutical marketing it involves sending information of the brand advertisements via post, telephone, email or others. The results on Table 4.4 refers that majority (mean 1.89) of the respondents strongly disagreed with the capability of encouraging prescription through brand advertisements direct to physician's post, telephone or email; however, they showed their indifference (mean 3.17) on physicians' online real-time support with information provided by the firm. On the other hand, preference of physicians to e-detailing than sales representative detailing to prescribe medicine and detailing from peer groups is helpful in physician drug prescription choice were perceived positively as rated with mean scored value of 3.46 and 3.72 respectively. The average direct marketing score value (3.06) showed the neutral stand (indifferences) of the study participants on the influence of overall direct marketing strategy on physician prescription behavior was substantially.

Table 4.4 Respondents' perception on Direct Marketing

Direct Marketing	N	Mean	Std.
The brand advertisements direct to physician's post, telephone or email encourages prescription	133	1.89	0.701
Physicians prefer to e-detailing than sales representative detailing to prescribe medicine	133	3.46	0.917
Detailing from peer groups is helpful on physician drug prescription choice	133	3.72	0.851
The physicians' online real time support with information provided by the firm	133	3.17	0.733
Average Direct Marketing Score	133	3.06	0.801

(Source: Own Survey, 2018)

Personal selling is one kind of direct marketing. It is the detailing by the promotional personnel of the brand and the way the sales personnel handle objects and use visual aids. Drug sampling, price benefit, buy one get one free comes under the domain of personal selling (Campbell, 2007).

Based on the above definition, Table 4.5, majority of the respondents strongly agreed on the sales representatives' free drug sample demonstration, physician – detailer interpersonal relationships and frequency of sales representative's visit persuade physician to prescribe medicine as voted with mean scored value of 4.70, 4.47 and 4.03 respectively. Similarly, the detailers' scientific knowledge on the medicine (mean 3.99) and provision of sales representatives' accurate and up to date detailing regarding the brand drug (mean 3.91) encourage physician's prescription decision. The results also showed that the influence of the overall personal selling on physician's prescription behavior was perceived strongly with average scored value of 4.13. This implies that personal relationship, free samples and knowledge of the detailer are the related factors in the course of physician's brand switch over through time.

Table 4.5 Respondents' Perception on Personal Selling

Personal Selling	N	Mean	Std.
Sales representatives provide accurate and up to date detailing regarding drug brand	133	3.91	0.509
The detailers' scientific knowledge on the medicine encourages physician's prescription decision	133	3.99	0.761
Frequency of sales representative's visit has an influence on prescription choice	133	4.03	0.315
Sales representatives demonstrate free drug sample to persuade physician to prescribe medicine	133	4.70	0.409
The physician – detailer interpersonal relationships motivates the physician to prescribe the medicine	133	4.47	0.473
Average Personal Selling Score	133	4.22	0.493

(Source: Own Survey, 2018)

Public relations help an organization and its publics adapt mutually to each other. Public Relations broadly apply to organizations as a collective group, not just a business; and publics encompass the variety of different stakeholders. In pharmaceutical marketing includes various program designs to promote the brands. It involves product launch meeting, clinical or scientific meetings, conducting a discussion by a specialist doctor related to products, sponsoring

physician for conferences etc. In this regard, the results on Table 4.6 revealed that the mean scored values of the public relations/ publicity attributes ranges from 4.73 to 4.44. It can be taken as implication of study participants' strong agreement on the influence of public relations/ publicity on physician prescription behavior. Among them, provision of continuous medical education (CME) (mean 4.73); printed materials like brochure, fliers, etc. (mean 4.61); and sponsor for conferences (mean 4.60) took the highest scored values in descending order. Similarly, Suppliers conducting a discussion by a peer groups (mean 4.59) and launch meeting, lunch or dinner on several special days (mean 4.44) encourage physician prescribing drug brand is helpful to remind drug brands to prescribe.

Table 4.6 Respondents' Perception on Public Relations/ Publicity

Public Relations/ Publicity	N	Mean	Std.
Supplier's product launch meeting, lunch or dinner on several special days encourages physician prescribing drug brand	133	4.44	0.801
Suppliers provide printed materials (brochure, fliers, etc...) to influence physicians to choose a brand drug	133	4.61	0.918
Suppliers conducting a discussion by a peer groups (specialist doctors) is helpful to remind drug brands to prescribe	133	4.59	0.677
Suppliers sponsor physician for conferences to influence them to prescribe their brands more	133	4.60	0.834
Provision of continuous medical education (CME) by suppliers encourages physicians to prescribe a brand drug	133	4.73	0.552
Average Public Relations/ Publicity Score	133	4.59	0.756

(Source: Own Survey, 2018)

4.1.3. SUMMARY OF MARKETING COMMUNICATION DIMENSIONS

Table 4.7 shows five major strategies of pharmaceutical marketing communications. Maximum physicians are agreed that the most important and effective strategy that influence the prescription behavior was public relations (mean 4.73) of the company. This involved making good relationship with the physicians, developed through time. This was achieved by several activities like sponsoring physicians for conferences, launch meeting and arranging several

special day program like World Diabetes Day, World Arthritis day etc. After public relation, personal selling and sales promotion were found most effective strategy with the rating of 4.13 and 3.71 respectively. Among all strategies direct marketing and advertisements found least effective. These are rated as mean scored value of 3.06 and 2.77 respectively by the physicians. Thus, suppliers should focus on their respective most effective promotional strategies to enhance their sale vs performances and need to exert more efforts to improve their direct marketing, and advertising strategies as well.

Table 4.7 Summary of Marketing Communication Dimensions

Marketing Communication	N	Mean	Std.
Advertising	133	2.77	0.776
Sales Promotion	133	3.71	0.848
Direct Marketing	133	3.06	0.801
Personal Selling	133	4.13	0.493
Public Relations/ Publicity	133	4.59	0.756
Average marketing communications Score	133	3.65	0.735

(Source: Own Survey, 2018)

4.1.4. PHYSICIAN PRESCRIPTION BEHAVIOR DIMENSIONS

The study shows that pharmaceutical marketing influence the prescription behaviors of physicians greatly. The effectiveness of different method varies widely physicians to physicians and sales personnel to sales personnel.

Table 4.8 Physician Prescription Behavior

Physician Prescription Behavior	N	Mean	Std.
Initial (clinical observation) perception of the drug matters most to me	133	4.10	0.706
Detailing of sales representative has a role on my prescription behavior	133	3.44	0.470
Sales promotion (gift, free sample, visit, etc...) doesn't encourage me to prescribe a medicine	133	1.76	0.614
Advertising brands on scientific journals inspires my drug preference	133	3.13	1.001
Financial sponsorship (training, continuous medical education, gatherings) persuade me to prescribe a medicine	133	4.59	0.338
Peer groups (trainer, colleagues, senior specialists) influence my	133	4.03	0.491

prescription behavior considerably			
Average Physician Prescription Behavior Score	133	3.51	0.603

(Source: Own Survey, 2018)

Financial sponsorship (training, continuous medical education, gatherings, etc.), initial (clinical observation) perception of the drug, and peer groups (trainer, colleagues, senior specialists) influence their prescription behavior considerably as majority expressed their strong agreement with mean scored value of 4.59, 4.10 and 4.03 respectively. They also negated the inability of sales promotion (gift, free sample, visit, etc...) to encourage physicians to prescribe a medicine with strong disagreement (mean scored value 1.76). However, detailing of sales representative (mean 3.44) and advertising brands on scientific journals (3.13) slightly influenced their brand preferences. The overall physicians' perception behavior towards pharmaceutical marketing was found to be moderate (mean 3.55) implying that they are trying to tradeoff between financial and psychological benefits to maintain both sides (patient's wellbeing and sales promotion) satisfied. But it may arise a paradox between being ethical and being beneficiary at a time at the cost of patients' wellbeing.

4.2. INFERENCE STATISTICS

4.2.1. VALIDITY AND RELIABILITY

To assure the construct validity that is whether the measure adequately represents the underlying supposed to measure, theoretical assessment of validity was undertaken. Accordingly, the items were partially adopted from previous studies and partially based on the definition given by different researchers, besides, appropriate research procedures were applied to find the answers to the basic question. With this the construct validity was also measured.

Data collected were subjected to reliability analysis to establish the reliability of the measures and to ensure consistent measurement among the various items in the instrument (Singleton et al, 1993). A reliability test was carried out on the questionnaire using the Cronbach's alpha test.

Table 4.8 Reliability Analysis of the Variables

Variables	No. of Items	Cronbach's Alpha Coefficients
[ADS] Advertising	4	0.880
[SPR] Sales Promotion	4	0.709
[DMK] Direct Marketing	4	0.918
[PSG] Personal Selling	5	0.730
[PRP] Public Relations/ Publicity	4	0.836
[PPB] Overall Physician Prescription Behavior	6	0.791
Total	27	0.811

(Source, Own Survey, 2018)

It is a coefficient of reliability used to measure the internal consistency of the scale; it represented as a number between 0 and 1. According to Zikmund et.al. (2010) scales with coefficient alpha between 0.6 and 0.7 or higher are considered adequate to determine reliability. Thus, the alpha coefficient was calculated for all factors, almost all constructs were between 0.709 and 0.918. As a result, all constructs were accepted as being reliable for the research. The Cronbach's alpha coefficient of the five marketing communication tools and over all physician prescription behavior is shown in table 4.8 below.

CORRELATION ANALYSIS OF VARIABLES

To explore the relationship between promotional strategies' key dimensions and overall physician prescription behavior, Pearson correlation was first investigated. The five dimensions of promotional strategy were taken as independent variables and overall physician prescription behavior for the medical institutions used as a dependent variable in this study.

Table 4.9 Correlation Analysis of Variables

Dimensions	ADS	SPR	DMK	PSG	PRP	PPB
Advertising [ADS]	1.00					
Sales Promotion [SPR]	.253	1.00				
Direct Marketing [DMK]	.279*	.031	1.00			
Personal Selling [PSG]	.366*	.437	.113*	1.00		
Public Relations/ Publicity [PRP]	.418*	.622*	.519*	.225	1.00	

Overall Prescription Behavior [PPB]	.027	.408*	.199	.518*	.698*	1.00
-------------------------------------	------	-------	------	-------	-------	------

*Correlation is significant at the 0.05 level

(Source, Own Survey, 2018)

The results on Table 4.9 showed that all marketing communication tools has positive relationship with overall physician prescription behavior. Public relations/ publicity were found to be significantly strong positive relation with overall physician prescription behavior ($r = 0.698$, $p < 0.05$). Personal selling and sales promotion also had strong and significant relation with prescription behavior ($r = 0.518$, $p < 0.05$ and $r = 0.408$, $p < 0.05$) respectively. However, advertisement and direct marketing had insignificant direct relations with prescription behavior of physician as the alpha values depicted relatively lowest ($r = 0.027$ and $r = 0.199$ at $p < 0.05$) respectively.

Besides, among communication tools, public relations/ publicity had significant and strong direct relation with sales promotion ($r = .622$), direct marketing ($r = .519$) and advertising ($r = .418$) at $p < 0.05$. On the other hand, advertising ($r = .253$) and direct marketing ($r = .031$) had insignificant weak positive relation with sales promotion; direct marketing showed insignificant strong relation ($r = .437$) with personal selling. This implies that dimensions of promotional tools had positive relationship but it wasn't as such highly correlated each other. This could be taken as a confirmation that there were no multi-collinearity problems to proceed for regression analysis. That means when the independent variables in this model are highly correlated with one another (greater than 0.70), they are basically measuring the same thing or they both convey essentially the same information.

Based on the above correlation analysis, there was no strong relation coefficient among the predictor variables which is greater than 0.70 and this clearly implies there is no multi-collinearity problem in this model. Multi-collinearity problem also checked using Variance Inflation Factor (VIF), Tolerance and Durbin-Watson value which are under normal range. (Appendix II). This implies that the data is suitable for conducting multiple regression analysis.

4.2.2. REGRESSION ANALYSIS

In order to investigate the impact of promotional strategy dimensions on overall doctors' prescription behavior, overall doctors' prescription behavior score was regressed against

promotional strategy dimensions. Multiple linear regression analysis was applied to investigate the relationship aiming to see the extent to which overall physician prescription dimensions are affected by marketing communications dimensions.

4.2.3.1 Assumption Testing for Regression Analysis

Meeting the assumptions of regression analysis is necessary to confirm that the obtained data truly represented the sample and that researcher has obtained the best results (Hair et al., 1998). Four assumptions for regression analysis used in this study will be discussed for the individual variables: normality, multi-collinearity, linearity and homoscedasticity (Hair et al., 1998). In the following paragraphs, each assumption is explained.

4.2.3.1 Normality

Outliers can cause the model to be biased because they affect the values of the estimated regression coefficient (Andy 2005). The normality of the data and selection of outliers in this study, thus, were done by checking the skewness (lack of symmetry) and kurtosis (heavy-tailed or light-tailed relative to a normal distribution). First, in which all the skewness value is less than two and the value for the kurtosis value is less than six (Mardia,1970) so that this value was checked and no data collected which have skewness above two and all have the kurtosis value less than six. Based on the results, there were no obvious outliers between scores because in most points it falls within the vicinity of other points. The result implied that as the marketing communication changed, physician prescription behavior also changed to same direction. It can be concluded that the two variables had direct relationship.

4.2.3.2 Multi-collinearity

Hill et al., (2003) explain that economic variables may move together in systematic ways when the data are the result of an uncontrolled experiment. Such variables are believed to have problems with collinearity or multi-collinearity when several variables are involved (Hill et al., 2003). Generally, as multi-collinearity rises, it will complicate the interpretation of the variables because it is more difficult to confirm the effect of any single variable, owing to their interrelationship (Hair et al., 1996). According to (Hill et al., 2003), multi-collinearity is not a violation of the assumptions of regression but it may cause serious difficulties. Hill et al., (2003) propose that these serious difficulties include variances of parameter estimates may be

unreasonably large; parameter estimates may not be significant; and a parameter estimate may have a sign different from what is expected.

The initial inspection of the Pearson Correlation Matrix for the regression models revealed that the correlations between the independent variables did not exceed 0.80. While checking, the independent variables showed significant relationship with the dependent variable (above .3 preferably). Also the researcher checked that the correlation between each of independent variables is not too high. Hill (2003) suggests that before including two variables with a bivariate correlation of, say, .7 or more in the same analysis should be checked considerably. As it can be observed from the correlation table there is no correlation between the independent variable which is above 0.7. Therefore, all variables were retained.

4.2.3.3 Linearity

The linearity of the relationship between the dependent and independent variable represented the degree to which the change in the dependent variable is associated with the independent variable (Hair et al., 1998). In a simple sense, linear models predict values falling in a straight line by having a constant unit change (slope) of the dependent variable for constant unit change of the independent variable (Hair et al., 1998). Conventional regression analysis will underestimate the relationship when nonlinear relationships are present, i.e., R^2 underestimates the variance explained overall and the betas underestimate the importance of the variables involved in the non-linear relationship. Substantial violation of linearity implies that regression results may be more or less unusable (Malhotra et al., 2007). The result of the regression models, visually inspected, didn't reveal any systematic pattern, thus providing support for the specified linear relationship.

4.2.3.4 Homoscedasticity

Hair et al. (1998) identify homoscedasticity as homogeneity of variance. This assumption is referred to as the description of data in which the variance of the error terms (e) appears constant over the range of values of an independent variable. The assumption of equal variance of the population ε (where ε is estimated from the sample value, e) is critical to the proper

As can be inferred from the model summary, overall physician prescription behavior is explained by marketing communication's dimensions such as advertising, sales promotion, direct

marketing, personal selling and public relations/ publicity. In this case the R^2 value is 0.475 which is expressed by a percentage. This means that the model explains 47.5% of the variance in the overall prescription behavior, thereby confirming the fitness of the model.

Table 4.10a Regression Results of the Effect of MCs on physician prescription behavior

Model	R	R ²	Adjusted R ²	Std. Error
1	.689 ^a	.475	.461	0.801

^a Predictors. (Constant), Promotional Strategy Dimensions

From the ANOVA analysis table ($F=88.253$, $p<0.05$), a good fit was established between marketing communications and physician brand preference with $P = 0.000$.

Table 4.10b Regression Results of the Effect of MCs on physician prescription behavior

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	68.923	1	68.923	88.253	.000 ^b
	Residual	103.027	132	.781		
	Total	171.950	133			

^a Dependent Variable: Physician Prescription Behavior

^b Predictors. (Constant), Promotional Strategy (Advertising, Sales Promotion, Direct Marketing, Personal Selling, Public Relation

The findings have confirmed a significant positive relationship between all dimensions except advertising as the p-value (0.109) is greater than 0.05. This implies that physicians seemed to emphasize less on the commercials ads of brand drugs provided by the suppliers (importers, exclusive distributors, manufactures, etc.) rather they need consistent public relations, sales promotion and personal selling qualities to instill confidence on physicians in regards to their specific brand medicine effectiveness and company reputation in the given industry.

Since the study is interested in comparing the contribution of each independent marketing communication variables; therefore, beta values are used for the comparison. From all the five predictors, the multiple regression analysis reached at four significant factors (sales promotion, direct marketing, public relations and personal selling at $p<0.05$ significance level) which were determinants of overall physician brand preference. The β value for sales promotion is ($\beta=0.408$,

p<.05); direct marketing ($\beta=0.199$, p<.05); personal selling ($\beta=0.518$, p<.05); and public relations ($\beta=0.698$, p<.05). This means that each independent variable has its own unique contribution to explaining the dependent variable – physician prescription behavior. Thus, the regression analyses are summarized as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e_x$$

Where,

Y- Physician Prescription Behavior [PPB]

X1- Advertising [ADS]

X2- Sales Promotion [SPR]

X3- Direct Marketing [DMK]

X4- Personal Selling [PSG]

X5- Public Relations/ Publicity [PRP]

$\beta_{1,2,3,4\text{and}5}$ - Coefficients of Advertising, sales promotion, direct marketing, personal selling and public relations/ publicity

Hence the advertising has no significant effect on physician prescription behavior, the effect of the rest pharmaceutical marketing communications represented as:

$$PPB = 1.009 + 0.408SPR + 0.199DMK + 0.518PSG + 0.698PRP$$

Further, the results of the regression analysis highlighted the priority areas of marketing communication strategy and revealed that not all the dimensions contribute equally to the medical doctors' preferences of brand medicine provided by suppliers. The findings indicated that among the various marketing communication dimensions, public relations and personal selling are the first two dimensions with the largest β value of 0.698 and 0.518 respectively. Therefore, superior performance on the most important dimension may be helpful in providing enhanced quality of pharmaceutical marketing and physicians' trust or preference.

Table 4.10c Regression Results of the Effect of MCs on physician prescription behavior

Coefficients ^a

Model		Unstandardized Coefficient		Standardized Coefficient	t	Sig.
		β	Std. Error	β		
1	(Constant)	1.009	.260		3.881	.004
	Advertising	.027	.776	.261	.035	.109
	Sales Promotion	.408	.848	.799	.481	.000
	Direct Marketing	.199	.101	.757	1.970	.042
	Personal Selling	.518	.493	.502	1.051	.000
	Public Relationw3e	.698	.756	.679	.923	.000
	Overall Marketing Com.	.651	.049	.632	13.286	.000

^a Dependent Variable: Physician Prescription Behavior (PPB)

(Source: Own Survey, 2018)

Based on the results analyzed above, the proposed hypotheses H_{2,3,4, and 5} is supported or accepted while H₁ is rejected. Summary of the hypotheses are presented on Table 4.13.

Table 4.13 Summary of Proposed Hypotheses

Code	Hypothesis	Status
H ₁	Advertising has significant effect on physician prescription behavior	Rejected
H ₂	Sales promotion has significant effect on physician prescription behavior	Support
H ₃	Direct marketing has significant effect on physician prescription behavior	Support
H ₄	Personal Selling has significant effect on physician prescription behavior	Support
H ₅	Public relations has significant effect on physician prescription behavior	Support

(Source: Own Survey, 2018)

4.3. DISCUSSION

The study shades light on the previous research that conceptualizes the fact that medical institution's practice of brand drug preferences is a dynamic process affected by number of factors (Prosser et al 2003) and that the decisions could depend upon factors from core conceptual, habitual and drug aspects (Denig et al 2002). Although the pharmacological criteria are generally used by the doctors in deciding which drug to prescribe, the findings of the study show that the pharmaceutical marketing communication strategy influences are also rated important factors in the doctors' decision to prescribe.

The present study also identified the influence of promotional tools on prescribing behavior and analyzed that the marketing communication variables like advertising, sales promotion, direct marketing, personal selling and public relations had an impact of their prescribing behavior. Previous studies have focused on identifying the psychographic factors that influence physicians prescribing behavior and have determined that unobservable physicians' attributes are strong determinants of prescribing preferences (Rice Jennifer, 2012).

The variations in doctors prescribing behavior goes in line with the study done by Martin as quoted in Hartzema et al. (1983) which concluded that the major determinant of differences in the prescribing was because of the "pharmaceutical promotional climate with which most prescription tales place particularly in developing and undeveloped countries which are the non - medical factors influencing the prescribing behavior. These non-medical factors are primarily the individual factors affecting the doctors prescribing behavior and marketing initiatives taken by the companies to affect prescribing pattern. In emerging markets like Ethiopia, where doctors are considered nothing less than Gods, influencing their prescribing behavior is the key for every pharmaceutical company.

The past studies have shown that the prescribing behavior can be influenced and doctors respond to different types of cues to change their prescribing pattern (Armstrong et al. 1996). The present study identified these cues and physicians in the study responded to these cues differently. Campbell et al. (2007) identified that physicians' relationships with the industry vary according to physicians' personal and professional characteristics and according to the practice setting as

seen in the present study where doctors of different age groups, specialty, and gender showed variations in prescribing behavior with respect to pharmaceutical industry interactions.

Financial incentive in the form of sponsorship, continuous medical education, free samples and related printed materials to the physicians by the sales personnel as well as personal relationship of the physician with the medical representatives are mostly influence the prescription behavior of the physicians. It is a quiet simple equation. In Ethiopia, there are more than 150 pharmaceutical companies with 2,000 brands and more (Eyosias, 2016). For example, calcium, generic have been more than 15 brand name. Which one will a doctor write for his/her patient is merely depends on the reliable source of initial information that confirms clinically tested drugs with better innovation, financial initiatives and interpersonal relationship with sales representatives of a specific supplier are most important than others.

A physician always prefers the quality of the product for his patient. That's why quality of the product is so much important. A quality product provides sales personnel extra confident to detail the brand in front of the physicians. Skillful detail of a product is necessary to promote a drug, especially for the newer molecule. New drug molecules are not really familiar to the physicians. A perfect detailing of that drug can create the opportunity to make a space into physician's prescription (Eyosias, 2016). Besides, this new information of existing product can be more accepted by a skillful detailing.

Gift with high value are always appreciated by the physicians even though unethical and illegal in some countries' legal context. Sales personnel are always tried to find out the hidden need of a physicians. If they find it and solve it with proper item, then it will be a perfect gift to them and this may contribute in the prescription a lot. In medical institutes in Ethiopia (Eyosias, 2016), conference occurs in very frequent basis. Sponsoring this event are also an excellent way to get into the good list of a physicians. That's why it is considered as somehow effective to make good relation to physician's and this also reflects into the prescription.

CHAPTER FIVE

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter includes summary of major findings, conclusions, recommendations of the study and implications for further research.

5.1. SUMMARY OF MAJOR FINDINGS

The study was conducted to assess the attitude of physician working at selected public and private hospitals towards pharmaceutical marketing and to each promotional strategy (advertising, sales promotion, direct marketing, persona selling and public relations). The analysis was performed to assess the effect of marketing communications on overall physician prescription behavior.

The results show five major strategies of pharmaceutical marketing communications. Majority physicians strongly agreed that the most important strategy that influence the prescription behavior was public relations (mean 4.59) of the company. This was achieved by sponsoring or provision of continuous medical education (mean 4.73); distribution of printed materials like brochures (mean 4.61); sponsoring conferences (mean 4.60); conducting discussions by peer groups such as senior specialists, medical directors, etc. (mean 4.59); and product launch meetings on several special days (mean 4.44). Next to public relations, personal selling and sales promotion were found most influential strategy with the rating of mean scored value 4.13 and 3.71 respectively. Whereas, among all pharmaceutical marketing strategies direct marketing and advertisements found least effective. These are rated with mean scored value of 3.06 and 2.77 respectively by the physicians.

From all the five predictors, the multiple regression analysis reached at four significant factors (sales promotion, direct marketing, public relations and personal selling at $p < 0.05$ significance level) which were determinants of overall physician brand drug preference. The β value for sales promotion is ($\beta = 0.408$, $p < 0.05$); direct marketing ($\beta = 0.199$, $p < 0.05$); personal selling ($\beta = 0.518$, $p < 0.05$); and public relations ($\beta = 0.698$, $p < 0.05$). However, Advertising showed no significant effect on doctors' prescription behavior. Thus, the proposed hypotheses were accepted except advertising.

5.2. CONCLUSION

The benefit of marketing communications is indispensable both for marketer and customer as it is communicating product information between seller and buyer. And it is useless to say that without promotion newly developed treatment options are not easily communicated to prescribers and users. However, since pharmaceutical promotion may create conflict of interest in pharmaceuticals (medical) context, it requires high ethical standards because decision maker (physician) and user (patient) are different. To avoid any conflict of interest and to act on ethical medical standards, physician should not be mere skeptical to pharmaceutical promotion and hold negative attitude.

The variations in doctors prescribing behavior goes in line with the study done by Martin (2013) which concluded that the major determinant of differences in the prescribing was because of the pharmaceutical promotional climate (non-medical factors) with which most prescription takes place particularly in developing and undeveloped countries. These non-medical factors are primarily the individual factors affecting the doctors prescribing behavior and marketing initiatives taken by the companies to affect prescribing pattern. In emerging markets like Ethiopia, where doctors are considered as highly social-valued, influencing their prescribing behavior is the key for every pharmaceutical company.

Pharmaceutical companies in Addis Ababa, Ethiopia, are directing all their marketing efforts towards doctors through different promotional strategies as they have the choice of the drug and the brands to prescribe. It is so obvious that physicians have the role of influencing their patients' pattern of selecting and administering drugs even the information about products and brands through commercial ads have been restricted to doctors and other healthcare professionals. This study results show five major strategies of pharmaceutical marketing communications. Majority physicians strongly agreed that the most important strategy that influence the prescription behavior was public relations of the company. A study by (V.Khaiura, 2012) reveals that cost of products, seminars, publication, brochures and booklets were the most important factors considered by the physicians while prescribing the drugs.

In this regard, several factors are considered by the pharmaceutical marketers to promote their products in front of physicians during the selection of a medication. In this study, it was found

that except advertising, other promotional strategies such as public relations, sales promotions, sales personnel activities, and direct marketing influence the prescription behavior of a physician. That's why pharmaceutical promotion strategy influences the prescription behavior of a physician greatly.

The past studies have shown that the prescribing behavior can be influenced and doctors respond to different types of cues to change their prescribing pattern (Armstrong et al. 1996). As a quiet simple equation, for instance in Ethiopia, there are more than 150 pharmaceutical companies with 2,000 brands and more (Eyosias, 2016). Thus, implementing different communications strategy like financial incentive in the form of sponsorship, continuous medical education, free samples and related printed materials to the physicians by the sales personnel as well as personal relationship of the physician with the medical representatives are mostly considered as effective tools so as to influence the prescription behavior of the physicians.

Skillful detail of a product is necessary to promote a drug, especially for the newer molecule for the fact that new drug molecules are not really familiar to the physicians and needs some communication mechanisms to inform them. A perfect detailing of that drug can create the opportunity to make a space into physician's prescription (Eyosias, 2016). Besides, this new information of existing product can be more accepted by a skillful detailing. Besides, gift with high value are always appreciated by the physicians even though unethical and illegal in some countries' legal context. Sales personnel are always tried to find out the hidden need of a physicians. If they find it and solve it with proper item, then it will be a perfect gift to them and this may contribute in the prescription a lot. In medical institutes in Ethiopia (Eyosias, 2016), conference occurs in very frequent basis. Sponsoring this event are also an excellent way to get into the good list of a physicians. That's why it is considered as somehow effective to make good relation to physician's and this also reflects into the prescription.

This study has demonstrated the most commonly employed strategies by pharmaceutical companies in Addis Ababa, Ethiopia. Many of the physicians admit to being influenced by promotional strategy, of this most of them are influenced by public relation. There is still a need for more large scale prospective study to further ascertain the impact factor of such marketing practices

5.3. RECOMMENDATIONS

The recommendation is heading for the pharmaceutical marketer, pharmaceutical sales representatives, and physician.

- Pharmaceutical marketers should work to change attitude of physicians for pharmaceutical promotion and make them have strong and positive attitude by design standardized, scientific, reliable, accurate, and ethical promotional activities. And continually assess the attitude of the physician toward the each of their promotional effort. Monitor their sales representatives' communication to ensure that it is up to standards rather than just look at sales generated. Because of the overall attitude toward pharmaceutical promotion is different between different marketing communication strategies, marketers should design their approach in integrated manner accordingly.
- PSRs should act professionally and communicate unbiased scientific information. Their drug information should by balance to all needed information of the medicine like indication, side effect, contraindication, and so on. When approaching the physician, they have to consider age and gender to act accordingly.
- Physician should consider the benefit of the pharmaceutical promotion as easily accessible, cheap, up-to-date, new information source without compromising their professional ethics.
- Generally further studies needed on practicing physician both in public and private setting. Physicians' relationships with the industry vary according to physicians' personal and professional characteristics. The effect doctors' demographic variations of different age groups, specialty and gender on prescription behavior should be assessed with respect to pharmaceutical industry interactions so as to get the big pictures of the industry.

The study of pharmaceutical marketing in Ethiopia is at an embryonic stage but immense scope in this field. The researcher has identified some of the areas which were not addressed in the current study would further enhance the results of the present study. The prescribing behavior of rural sector doctors can give a new insight about this untapped market to the pharmaceutical managers. The future scope also extends to the use of combination of qualitative with quantitative approach in studying the doctors prescribing behavior. Future studies can take more

specialties' and country level study can be conducted to have an overall knowledge of what doctors think before prescribing a drug.

BIBLIOGRAPHY

6. APPENDICES

6.1. Appendix I Survey Questionnaire

St. Mary's University Master's in Business Administration MBA Program

Survey Questionnaire

My name is Bersabeh Getachew 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 Marketing Communications on Physicians' Prescription Behavior to shade lights on 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.

Bersabeh Getachew

Telephone: 0913045559

Part I. General Information

1. Gender Female Male
2. Age Below 30 years 30 - 60 years Above 60
3. Specialty Specialist Consultant General Practitioner
 Other, please specify _____
5. Practice setting Private hospital Private clinic Both
6. Years of practice Less than 5 years 5 - 10 years More than 10 years

Part II. Questions related with Marketing Communications and Physician Prescription Behavior

Please read each statement carefully and show your level of agreement on the statements by putting “X” mark in the boxes using the following 5-scale Likert scales: Strongly agreed (SA)=5, Agreed (A)=4, Neutral (N)=3, Disagreed (DA)=2, and Strongly disagreed (SDA)=1

Marketing Communications

1. Advertisement

Firms promote drugs through scientific journals encourage physician to prescribe drug

Advertising on catch cover of free samples help physicians prescribe the drug

Words on the packaging of gift items encourage physicians to prescribe the drug

The constant information from awarded scientific journals and scientific publication

2. Sales Promotion

Low cost gifts (pen, paper weights, writing pads, etc. depicted drug brand) from pharmaceutical suppliers remind drug brand while prescribing

Financial incentives, given that there are similar competitive medicines motivate physicians to prescribe

The firms interest to educate the physicians on new medicine through financing their participation to international scientific conference

Add value incentives therefore office practice items, patient record forms, etc. given that there are competitive alternative medicines

3. Direct Marketing

The brand advertisements direct to physician’s post, telephone or email encourages prescription

Physicians prefer to e-detailing than sales representative detailing to prescribe medicine

Detailing from peer groups is helpful ion physician drug prescription choice

The physicians’ online real time support with information provided by the firm

4. Personal Selling

Sales representatives provide accurate and up to date detailing regarding drug brand

The detailers’ scientific knowledge on the medicine encourages physician’s prescription decision

Frequency of sales representative’s visit has an influence on prescription choice

Sales representatives demonstrate free drug sample to persuade physician to prescribe medicine

SDA	DA	N	A	SA
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

The physician – detailer interpersonal relationships motivates the physician to prescribe the medicine

1	2	3	4	5

5. Public Relations/ Publicity

Supplier’s product launch meeting, lunch or dinner encourages physician prescribing drug brand

Suppliers arranging clinical or scientific meetings on several special days

Suppliers conducting a discussion by a specialist doctor is helpful to remind drug brands to prescribe

Suppliers sponsor physician for conferences to influence them to prescribe their brands more

Part III. Questions Related with Promotional Strategies

Physician Prescription Behavior

Initial perception (clinical observation) of the medicine matters most to me

Detailing of the sales representatives has a role on my prescription behavior

Sales promotion doesn’t encourage me to prescribe a medicine

Advertisement of brands on scientific journals inspires my prescription behavior

Financial sponsorship for training, conferences, and gatherings persuade me to prescribe a medicine

Peer groups (colleagues, specialists, trainers,...) influence my prescription behavior considerably

1	2	3	4	5

Many Thanks for Your Valued Time!!!

REFERENCE

1. Aaker D. (1999) Marketing Research, 4th ed. New York: John Wiley and Sons.
2. Abiy Z. (2009) Retrospective drug use study using prescribing indicators in 32 health Facilities. Ethiopian Pharmaceutical Journal, Vol. 13, pp. 54-61
3. Armstrong K., (1996). Effects of pharmaceutical promotion. The case of a firm within the market of hepato-protectors in Ukraine. Pp. 69-70
4. Campbell G. (2007) Essentials of Research Design and Methodology, New Jersey: John Wiley and sons Inc.
5. Carvalho R., (1994). Research Methodology; Methods and Techniques, (3rd ed.). Hungary: New Age International (P) Ltd.
6. Denig P. K. (2002) Responsiveness of Physician Prescription Behavior to Sales Force Effort: An Individual Level Analysis, Marketing Letters, 15: 2-3, 129-145.
7. Duggirala V. (2008). The role of the Brand Name in Obtaining Differential Advantages. Journal of Product & Brand Management, 10(7), 452-465.
8. Eyosias M., (2016) Robert. Scientific versus commercial sources of influence on the prescribing behavior of physicians. American Journal of Medicine 1982; 73:4-8.
9. FMHACA (August 2017). Guideline for the licensing of pharmaceuticals importers and distributors. Addis Ababa.
10. Hair, J.F. J (2002). Multivariate data analysis, (5th ed.). Upper Saddle River, NJ: Prentice-Hall.
11. Hartzema A., (1983) A survey of pediatric prescribing and dispensing in Karachi. Journal of the Pakistan Medical Association 1990; 40:126-130
12. Hatcher M., (1994) Affective and Cognitive Factors in Preferences, Journal of Consumer Research, Vol. 9, September, 123-131
13. John A. (2013) Assessing the role of branding in the marketing of pharmaceutical products in Ghana: A case of three pharmaceutical companies. African Journal of Business management. Vol. 8 pp. 502-510
14. Kothari C.H., (2004) Research Methodology Methods & Techniques, Second Edition, New Delhi: New Age International Publisher, 2004, PP. 1-2
15. Nunaly B, (19788) The impact of brand equity and innovation on the long-term effectiveness of promotions. Journal of marketing research vol. xlv 293-306

16. Prosser E. (2003) A Study of Brand Preference: An Experiential View Brunel Business School – Doctroal Symposium.
17. Singleton Y., (1993) Service Loyalty: Implications for Service Providers, Journal of Services Marketing, 11(3), 165-179.
18. Zikmund, W.G (Ed). (2003). Exploring Marketing Research. USA: Thompson Learning.