A SURVEY ON DRUG PRESCRIPTION BEHAVIOR BY GENERAL PRACTITIONERS IN NAIROBI, KENYA

BY

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A survey on drug prescription behavior
DECLARATION

This research project is entirely my original work and has not been submitted for a degree in any other university.

Signed................................................. Date...........................................
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This research project has been submitted for examination with my approval as the university supervisor.

Signed............................................. Date........................................
Supervisor: Prof. J. M. Chege

This research project been submitted for examination with my approval as the chairman, Department of Business Administration.

Signed............................................. Date........................................
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Kenyatta University.
DEDICATION

To my beloved wife Tabitha, whose patience, encouragement and faith kept me going

To my sweet daughter Ivy, whose unwavering will to overcome odds inspired me

To my boisterous son Clive, whose arrival brought joy and a new lease of life
ACKNOWLEDGEMENT

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ABSTRACT

The prime objective of marketing is to make profits through satisfying customers' needs, and wants. Therefore, marketers have to understand the real needs, wants, beliefs and attitudes of customers towards their products and services. Understanding of drug prescription behavior of the General Practitioners (GPs) is therefore important to pharmaceutical marketers because their drug prescription behavior determine the market size for the prescription only medicines (POM). POM is a category of pharmaceutical products which are ethically supposed to be sold on prescription only. GP is a category of medical practitioners who prescribe first line drugs to the patients before further referral is done if need be. GP’s drug prescription behavior is influenced by several factors and to different extents. Therefore, the suitability of the factors determines the frequency of drug prescription of a particular product and consequently its market size.

The objective of the study was to determine the factors that influence drug prescription behavior of GPs, investigate the relative extent of influence they exert on drug prescription behavior and evaluate the perception of GPs on the tools used to promote drug prescription. A descriptive research design was applied in the study in order to provide an elaborate concept of the factors that influence drug prescription behavior. The study population consisted of 78 general practitioners based in Nairobi, from which census was applied and 66 GPs responded. The data collection tool used was a questionnaire with both open ended and closed ended questions. The questionnaires covered on the characteristics of GPs in Nairobi, factors influencing drug prescription behavior and perception on promotional tools utilized by pharmaceutical marketers.

The study indicated that some drug attributes like; quality, safety and product information were of uncontested importance and they exerted great influence on the drug prescription behavior. Personal selling and formal education were indicated as the most reliable sources of product information, while quality and pricing were largely indicated for improvement.

The research concluded that drug quality, and personal selling were the most important strategy mix in POM promotion, drug sampling and gifts have are necessary in drug promotion and the use of internet technology is poorly embraced in drug marketing in Kenya. The Pharmaceutical marketers should; segment their market, articulate the right influential factors in each segment and adopt a feedback mechanism that involves drug prescribers (and probably the patients) in their marketing strategies, in order to achieve their objectives effectively.
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OPERATIONAL DEFINITIONS OF TERMS

Adverse event: Any outward medical occurrence in patient administered a pharmaceutical product and which does not necessarily have to have a causal relationship with the treatment (Harold, 2008).

Detailing: A presentation of marketing, and/or product information on a drug to a doctor (Federal Drug Association, 2007).

Drug: A remedial pharmaceutical agent that has the property of curing, preventing, or mitigating diseases (Federal Drug Association, 2009).

Drug formulary: A list of prescription drugs, both generic and brand names that are availed through a certain health plan (Michael, 2008).

General practitioner (GP): A medical practitioner who is licensed to offer primary medical care services and is not specialized in any medical field (Wikipedia, 2009).

Generic drugs: Drugs that are not protected by patents and are marketed by companies that have not participated in innovation of the drugs themselves (Federal Drug Association, 2007).
**Patents:** A set of exclusive rights granted to an innovator company for a fixed period of time in exchange for the regulated public disclosure of certain details of an invention (Federal Drug Association, 2007).

**Parallel importation:** This is the cross border trade in a particular product through a route that the manufacturer may not have originally intended (Bailey, 2003).

**Prescription only medicine (POM):** A drug requiring to be recommended to a patient by a licensed medical practitioner so that it may be dispensed (Federal Drug Association, 2009).

**Original drugs:** These are the innovator products which are usually the first to be developed by companies carrying out clinical trials which had not been developed elsewhere.

**Over-The-Counter (OTC) drug:** Non-prescription drugs that usually contain low doses of their “active ingredients”. These drugs can be purchased directly without consulting a physician (Harold, 2008).
CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

This chapter describes the premise of the study and it comprises of the background, problem statement, objective of the study, research questions, significance of the study, and scope of the study and the organization of the study.

The background evaluates the Kenyan market structure, relationship between market players, market size, and market regulation. The chapter introduces General practitioners (GPs) drug prescription behavior, factors influencing their drug prescription and the extents of influence the factors impact on the GPs drug prescription behavior.

The problem statement identifies and states the challenges that pharmaceutical marketers face in the Kenyan market and the dilemma they face regarding the factor mix which would effectively influence drug prescription behavior of their target market (Geer and Kangis, 2006).

The chapter also sets the objectives achieved by the study and identifies specific questions to be addressed by the questionnaire in order to achieve the purpose of the study. The chapter ends with organization of the study which outlines how the study sections are organized.
1.2 BACKGROUND OF THE STUDY

The Kenyan Prescription Only Medicine Market Structure

The Kenyan pharmaceutical industry is structured in three main segments, the manufacturers and importers, distributors and retailers, through which pharmaceutical products reach the third party - the consumer. Pharmaceutical products are availed in the market by either importers or local manufacturers (Gathanju, 2009). Pharmaceutical companies avail drugs to consumers as per their prescription needs as illustrated below.

Fig. 1. **Players in the Kenyan Pharmaceutical Market** (source: researcher, 2010).
In Kenya, there are about 87 pharmaceutical manufacturing and importing companies, 700 private wholesalers and 1300 retail pharmacies (Mthebu, 2000). The market value for the pharmaceutical products in Kenya is estimated at Ksh 8 billion per annum. It is approximated that about 9,000 pharmaceutical products have been registered for sale in Kenya, and are sold according to the outlet categorization which can be described as over the counter (OTC drugs and prescription only medicine (POM)) (Aluja & Ajana, 2007). Control of the professionalism in pharmaceutical industry is administered by Ministry of Health through the Pharmacy and Poisons Board (PPB) as provided by Chapters 244 of the Pharmacy and Poisons Board Act and 245 of the Dangerous Drugs Act of the Laws of Kenya. The PPB enrolls, registers, and licenses all qualified pharmaceutical personnel in Kenya and inspects all pharmaceutical premises before allowing them a trading or manufacturing license. The PPB also ensures quality of drug, either locally manufactured or imported (Murad, 2006).

GPs are medical practitioners who have attained at least a medical degree and are not specialized to any medical field. They are bestowed with authority to prescribe drugs to the patients and they usually offer the first line treatment, thus encountering a wide variety of disease conditions and therefore they have a chance to prescribe a variety of the drugs in the market. They refer deserving cases to specialized doctors hence acting as patient filter (Meredith et al. 2003).
1.3 STATEMENT OF THE PROBLEM

Kenya is an emerging market segment and is fast growing market for many pharmaceutical industries (Murad, 2007). However, the market is characterized with; over-stretched resources, low return on investments, drastic market changes, lack of market information, throat cutting competition, inadequate accessibility to some areas, diverse misconceptions on companies and their products, drug counterfeiting and drug parallel importations, all of which make marketing of pharmaceutical products an up hill task. (Aluja & Ajana, 2007).

General practitioners (GPs) make drug choices on behalf of the patient by specifying what drug the patient is to take in a prescription. Therefore, GPs are important because they are the “consumers” in the eyes of pharmaceutical marketers. In the process of making these choices, their decision is influenced by various factors. Some of the major factors influencing drug prescription and drug sales performance are drug; efficacy, safety, price, influence of opinion leaders, brand loyalty, practitioners experience, patient’s expectations, product information and promotion. (Geer and Kangis, 2006).

As a result of these subtle and diverse factors, pharmaceutical product marketers invest heavily in an effort to influence GPs’ drug prescription in favor of their products, but more often than not, they do not achieve their sales targets (Kavaleski, 2007). Secondly, there are enormous incidents of inconsistency in what medical practitioners pledge to prescribe and what is reflected in company’s products sales (Stern, 2002). This cause frustrations and uncertainty to pharmaceutical marketers, therefore calling for an investigation on the factors that influence drug prescription in Kenya.
1.4 OBJECTIVE OF THE STUDY

The central focus of this study was to provide answers on the question on what factors affects the drug prescription behavior of GPs and the extent of influence of each factor.

1.4.1 SPECIFIC OBJECTIVES

The specific objectives of this study were:

i. To determine the factors that influences drug prescription behavior of the GPs in Kenya.

ii. To establish the extent of influence each identified factor has on the drug prescription behavior.

iii. To establish the GPs’ perception on tools of communication used by pharmaceutical companies to relay information that influence prescription behavior.

1.4.2 RESEARCH QUESTIONS

The research questions for this study were:

i. What are the factors affecting the prescribing behavior of GPs in Kenya?

ii. To what extent do the identified factors influence prescription behavior?

iii. How do GPs perceive tools of communication used by pharmaceutical companies to relay information that influence drug prescription behavior?
1.5 SIGNIFICANCE OF THE STUDY

The study was expected to provide information to pharmaceutical marketers to make informed business decisions, fill in research gaps about pharmaceutical markets and make further research suggestions on pharmaceutical market in Kenya. Drug prescription behavior in Kenya is not clear and the results of this study have made clear of GPs’ expectation in drug promotion, prescribing environments and factors leading to the drug prescription behavior. The study also provides insight into market needs which are of importance to improvement of the existing products and innovation of new products.

1.6 SCOPE OF THE STUDY

The study considered interviewing General practitioners (GPs) in selected healthcare facilities in Nairobi province. This category of medical practitioners is important to the Kenyan pharmaceutical market because they offer the first line disease treatment before the need for specialized treatment. They prescribe majority of the first line therapeutic products to treat the disease indications which is a significantly large segment of the Kenyan pharmaceutical market. In most cases, the general practitioners decide what prescription drug the patient will take, thus playing an important role in drug companies’ competition. Secondly, the study is restricted to prescription only medicine (POM) category of drugs.
1.7 ORGANIZATION OF THE STUDY

This study is organized in five sections; the introduction, literature review, methodology, data analysis and results and recommendation. Each section has a title and sub-titles which are numbered according to their position in the draft.

The first chapter gives details on the premise of the study, background of the study which expounds on the pharmaceutical industry Kenya. The second chapter examines what other researchers have achieved on GPs prescription behavior, what literature gap exists between the current literature and information needs. The third chapter describes how the research was carried out. It gives details of the research design, the study population, sample and sampling methods, measurement and data collection process. Chapter four tabulates, organizes, show analysis of the obtained data and interprets the data to give the results of the investigations, while chapter five describes outcome of the study, makes recommendations and conclusions on the study.
CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter reviews studies on drug prescription behavior and how their findings relate to drug prescription in the Kenya. It is organized in three sections; the first section is the theoretical review on drug prescription process and definition of GPs, the second section introduces the empirical literature on elements influencing prescription behavior. The third section discusses the conceptual framework and relationship of variables under study. It is also aimed at filling in literature gaps, compare Kenyan drug prescription with studies carried out elsewhere, and identify other research areas for further research.

2.2 DRUG PRESCRIPTION BEHAVIOR

In medical treatment, after diagnosis of a disease and evaluation of entire physiological well being of the patient; decisions to remedy the sickness are reached (on behalf of the patient) by the medical practitioner. These decisions specify instructions to be taken by or on behalf of the patient by the care providers. The decisions are in form of written instructions for purpose of records, follow ups and references. Instructions on drugs are referred to as ‘drug prescription’. Drug prescription contains recommendations for various aspects of the drug to be taken like; brand name, form, strength, dosage and
duration of treatment. The prescription instructions may be performed by the patient, nurse or pharmacist as per the instructions (Creyer, 2001).

Generally, General practitioners (GPs) are the category of medical practitioners bestowed with authority to prescribe drugs to patients in hospitals. They offer first line treatment thus encountering several disease conditions, and therefore, their drug prescriptions cuts across a wide range of drug categories (Meredith et al. 2003).

Drug prescription is a quick, personal decision making process which usually takes less than thirty minutes, but so important that sometimes, it is the thin line between life and death. This process is influenced by several factors which include product attributes like; quality, safety, price, information, availability, emotional attributes like; brand loyalty, opinion leaders and business relationships and rational attributes like; working experience and patients' experience. The extent of influence by each factor or a group of them determines the decision pattern of the drug prescription. Eventually, the decision pattern becomes a behavior which the GP gets used to when treating a particular kind or a group of ailments. Consequently, the drug prescription behavior of the GP results to prescription of a particular drug or a group of drugs, while leaving its competitors out. This affects sales of pharmaceutical products in the market because drug prescription directly determines their level of demand. This fact drives competition for drug prescriptions by pharmaceutical companies (Denig & Hajer, 1996).
2.3 FACTORS THAT INFLUENCE DRUG PRESCRIPTION BEHAVIOR

General practitioners (GPs) are bestowed with the responsibility and authority to make drug choices on behalf of the patients' medical needs. Consequently, their drug prescription behavior is of great importance in determining product sales performance through prescriptions of particular drugs (Kangis, 2006). GPs’ drug prescription behavior is influenced by several factors such as; drug quality, safety, price, patients’ preference, availability, source, product information, promotional, brand loyalty, opinion leaders and experience of a practitioner (Holden & Wilson, 1996). The following section reviews the effects of various factors in consumer behavior.

PRODUCT QUALITY

Pharmaceutical product like any other, product has three levels of quality, namely, the core product quality (function, benefits), the formal product quality (attributes features, packaging and loyalty), and the augmented product quality (total satisfaction that the person conceives or receives in obtaining the product). Quality is closely related to value and is measured in terms of the buyers’ perception of quality. Quality is the intangible overall feeling about a brand and is based on the underlying dimensions, which includes characteristics of the product to which the brand is attached, such as performance and reliability. The quality of a drug is a direct aspect of a good product and is related to the profile of a product such as efficacy, side effects, the speed of onset of action, minimal or lack of rebound effect after termination, lack of other drug interaction, dosage convenience and means of administration (Safavi, 2002).
The core drug quality is its therapeutic efficacy, i.e., the ability of a drug to achieve its intended effect in shortest time possible and without producing unwanted effects. This is important because of the sensitivity of the matter in dealing with the human life. An example of efficacy consideration in drug use in Kenya is the case of the anti-malarial drugs in Kenya: The widespread failure of chloroquine and sulfadoxine pyrimethamine (SP) in the treatment of malaria in Africa during the late 1990s resulted in a turbulent public health debate, which led to the universal acceptance that mono-therapies that failed to cure one in four patients should be replaced by highly efficacious artemisinin-based combination therapy (ACT). More than 40 countries in Africa have now adopted ACT as their first line for uncomplicated malaria (Talusina, Bloland & D’Alessandro, 2004; Bosman & Mendis, 2007).

Poor quality medicine will reduce the effectiveness of therapy and encourage resistance. Poor quality drugs could be as a result of counterfeiting, substandard drugs or degraded drugs. Poor quality drugs particularly find way into markets of low income countries where information about drugs use, source and standards is scant and enforcement of drug regulations is often weak. Inadequate infrastructure, non-regulated drug outlets and black market operations make statistically-sound drug quality surveys difficult. However, there is increasing realization that the issue of medicine quality is an essential translation link between epidemiology / clinical trials research and improved public health. Factors such as tablet hardness, type of excipients, and physico-chemical properties, such as particle size, crystallinity, and aqueous solubility, may affect the dissolution rate and bioavailability and consequently the drug quality (Newton et al. 2008).
Economists use the concept of price sensitivity to understand changes in consumption related to changes in the price of good or service. Resources are never sufficient enough to ignore the price factor however, if consumption changes with price, the consumer is said to be price sensitive; otherwise, the consumer is considered price insensitive. Price is an important motivation factor on the consumer, especially for the consumer goods but this does not always if the consumers give priority to other factors. Price is also perceived as a measure of quality in instances where consumer perceives product prices to vary directly proportional to the quality (Snow, 2003).

Since doctors behave as their patients' agents or their own agents, they are found to be somewhat price-sensitive. This means doctors will prescribe more drugs or more services (or both) when their patients have drug benefit. Whether or not doctors are trying to protect their own or patients' interest, their impact of a drug benefit that limits patients' financial liability can be predicted on the basis of price-demand model. Simply stated; price and quantity demanded are inversely related. If patients pay less for medications, they will demand more prescriptions, the doctors will respond by writing more prescriptions. Several studies support this interpretation of doctors' behavior (Leibowitz, Manning & Newhouse, 1985).

Prices of medicines vary a great deal across sectors and across different regions of Kenya. The price of medicines particularly in the private sector remains a critical barrier to access to health by the majority of the people of Kenya. Increased reliance on the
generics in the private sector would lead to more cost-effective utilization of resources and increased access to health services by the low-income patients (WHO, 2003). Newer drugs are usually more expensive than older drugs; they are sometimes more effective than their older counterparts in reducing illness, hospitalization, or death (Lichtenberg, 1996). These improvements in the health care outcomes can justify the increased costs of drugs to the patient (Rockville, 2001). When better health outcomes involve increased cost, the burden of paying for treatment can have negative consequences. For example, because of cost issues, some patients may result to drug mismanagement (not filling their prescriptions, taking less than the recommended dose, saving medication for future use, or taking a medicine belonging to another person) (Mitchell & Kennedy, 2001). Under the current patent system for drugs, abusive pricing practices by industry can occur unless patent medications are made to compete against generic and therapeutic alternatives (Newhouse, 2004). Consequently, efforts have been made to increase market competition by enhancing drug choices. One proposed strategy to weaken patent laws is to allow cheaper generics to more quickly enter the market (Eisenberg, 2001). An alternative solution is permit substitution of lower priced, therapeutically similar drugs for more expensive ones where low priced substitutes could be switched for higher priced drugs, regardless of whether they differ chemically, if they achieve the same medical outcomes.

In Kenya, pharmaceutical products have experienced large price disparities between original brands and generics, and also between different companies. These disparities are as a result of different companies’ strategies to serve different niche markets.
vary from economic niches, cultural niches, level of health facilities, and education level of general practitioners. However the extent to which the price factor affect the drug choice in each of these niches is not known. Unlike in the developed countries where government regulate prices and subsidize cost drugs to ensure affordability, the Kenyan pharmaceutical markets is left to the market forces to determine the prices of the drugs. The current healthcare financing capacity in Kenya is US$11 per person which is far below the WHO recommended of US$ 34 per person. The government, social health insurance and non-profit making institutions contributes only 25% of healthcare finances. This means that 75% of healthcare needs are financed through out of pocket expenditure (www.epzakenya.com).

PRODUCT SAFETY

Product safety is a major issue for the marketing of consumer goods. A very obvious strategy is to turn to products which are safer either in their basic design or by provision of additional safety features. This is where risk compensation becomes a highly relevant issue. According to the risk compensation hypothesis, the consumer will respond to more product safety by taking less care while using the product (Burton, 2000).

A consumer may buy immediately a product version containing strong safety features and/or may select less safe (and presumably less expensive) version intending to compensate the lesser degree of built-in-safety by taking greater care in applying the product correctly later in usage phase. For instance, food safety concerns may include
previous experience with food borne illness, warnings of food safety risks from physician or receiving information food safety in media (Young, 2006).

Safety is a primary cornerstone for effective healthcare. Efficacy and safety are generally believed to be the most important factors in the decision making process of doctors about what product to prescribe (Denig, 2006). Prescription drug safety is an important aspect of overall patient safety and medical practitioner should advance safer drug prescription (Institute of Safe Medication Practices, 2000). It is a clear ethical responsibility for the general practitioners caring for patients to ensure that they receive drugs that they need in a dose, as safe and convenient form as possible. Conversely, no drug is without its risks and patients need to be protected from those risks they do not need to be exposed to, or when another product could achieve the same result in a safer or more convenient form (Holden & Wilson, 1996).

In UK it is estimated that over 7000 people die in and out of hospitals due to the medication errors. Estimated cost of medication errors are about US$2 billions annually (Lasserter & Warnic, 2003). In addition to death, medication errors represent real losses to employer and employees in terms of time, money and quality of life. Medication errors can occur in the process of naming, prescribing, transcribing, dispensing and administration of medication. Patients can also cause errors by failing to comply with instructions (Lasserter & Warnic, 2003). Flynn, Barker and Carnahan (2003) found out that a typical medical practitioner filling 250 prescriptions a day makes an average of four errors per day which is estimated to 1.5 million errors annually.
Pharmacological compounds often have unanticipated therapeutic impacts known as ‘side effects’. This is so because the art of medicine is far from an exact science, and results are not always predictable (Galloway, 2003). Focused on the best interest of their patients, doctors prescribe that medicine which they believe will be most efficacious but have minimum side effects.

System redesign as a strategy in enhancing patient safety is a fundamental element of the total quality management (TQM) approach (Deming, 1986; Flynn & Saladin, 2001). For example, extensive training in using Computerized Prescription Order Entry (CPOE) allows medical practitioners to enter orders directly to a computer rather than handwriting them. This resolve several problematic issues such as; illegible hand writing, formulary management and medication interactions warnings. This has resulted in more effective use of these systems and significant reduction in medical errors (Doolan & Bates, 2002).

Redesign of drug delivery process may go beyond a computerized ordering system to also include standardization of dosing, prescription and drug packaging (Leape, 1996). Some drugs must be used with precaution depending on the age of patient, underlying conditions of the patient, weight of the benefits versus the side effects, availability of other alternatives and drug interactions. For example, older patients become more susceptible to drug dementia and delirium as they age, but the symptoms are often overlooked by medical practitioners who don’t realize that the condition may be caused by drug and reversed. The aged patients are more susceptible because the body’s ability to rid itself of drugs decreases with age, often because of normal age-related decrease in kidney and liver functions. Secondly, older patients are often prescribed multiple drugs at
the same time, resulting to complicated interactions and enhanced side effects. Stopping or modifying the dosage of numerous, frequently prescribed drugs, most patients can be restored to a pre-drug mental clarity (www.worstpills.org).

Serious drug side effects can cause; banning of a drug from markets or legislation of new laws that would govern manufacturing and administration of those drugs. For example, single events such as the thalidomide tragedy have initiated major legislation governing the pharmaceutical industry, to ensure patients’ safety. Thalidomide was a sedative and anti-nausea drug used by pregnant mothers in Europe in the early 1960’s; however, it caused serious birth defects to thousands of the unborn infants and legislations were put in place to ban it from the market all the world. The legislations also required pharmaceutical companies to prove that their drugs were effective and safe prior to marketing (Holdford, 2005).

BRAND LOYALTY

Brand loyalty is the consumers’ conscious or unconscious decision expressed through intention or behavior to purchase a product continuously. It occurs because the consumer perceives that the brand offers the right product features, image or the level of quality at the right price. Consumer behavior is habitual because habits are safe and familiar. In order to create brand loyalty, marketers must break consumers’ habit, help them acquire new habits and reinforce those habits by reminding consumers of the value of their purchase and encourage continue purchasing those products in the future (Wangfoong, 2008).
The image surrounding a company’s brand is the principal source of its competitive advantage and is therefore a valuable strategic asset. From the design of a new product to the extension of a mature product, effective marketing strategies depend on the thorough understanding of the motivation, learning, and memory and decision process that influence what consumers buy (Wangfoong, 2008).

Branding is by far one of the most important factors influencing an item’s successor failure in the market place and can have a dramatic impact on how the “company behind the brand” is perceived by the buying public, that is to say, brand is not just a representation of a company’s product; it is a symbol of the company itself and that is where the core of the loyalty lie (Wangfoong & Sidek, 2008).

Brand name has shown strong correlation with brand loyalty. In Malaysia sports wear such as Nike, Adidas, Reebok, Puma, Umbro and Fila are popular among sportswear consumers. Sportswear has become common with young people as it identifies them with more relaxed lifestyle, greater versatility and comfort (Wongfoong & Sidek, 2001).

Brand loyalty has been proclaimed to be the ultimate goal of marketing (Reichheld & Sasser, 2000). In marketing, brand loyalty consists of consumer commitment to repurchase the brand through repeated buying of a product or service or other positive behaviors such as word of mouth. This indicates that the repurchase decision very much depends on trust and quality performance of the product or service (Chaudhuri & Holbrook, 2001).
Brand loyalty can be a great asset to the firm. That is to imply that; customers are willing to pay higher prices, may cost less to serve and can bring in new customers to the firm (Reichheld & Sasser, 2000).

Drug prescription and consumption shares the characteristics of experience goods. An experience good is a product whose quality or suitability for the buyer is only discoverable after consumption. When the buyer knows that the quality of a product is good and the longer duration he has consumed it than its alternatives, the option to switch is not an attractive one because of the risks it involves. Brand royalty may reduce price responsiveness of demand, but can also reduce consumers' search costs (Sorenson & Scherer, 2000). Consequently, in order to switch, buyers may have to be compensated for this uncertainty (Castello, 2003).

The primary marketing goal is to generate awareness but the long term desire would be to generate a high degree of brand loyalty among practitioners. This is because consumers pay a premium prices for certain brands, and therefore logical for pharmaceutical marketers to desire such loyalty for their brand names (Rotfeld, 2005)

As stated by Klemperer (1995), doctors tend to re-use those medicines that have already worked for their patients in preference to taking the gamble of trying drugs that they have not tested before and they may not suit their patients.

**OPINION LEADERS**

Opinion leaders are individuals whose ideas and behaviors serve as model to others. They communicate messages to primary groups, influencing the attitude and behavior change
of their followers. Therefore in certain marketing instances, it may be advantageous to
direct the communication to the opinion leader alone to speed the acceptance of a drug
advertising message. For example the advertisers may direct a dental floss promotion to
influential dentists or a fashion campaign to female celebrities. In both instances, the
advertiser is using the opinion leader to carry and “trickle down” its message to influence
its target group (Mundy, 2004).

In the pharmaceutical industry, the opinion leaders are individuals whose opinions have
greater influence to the prescribing or buying habits of other general practitioners due to
their position, expertise, and/or connections (Holdford, 2004). If the key opinion leader is
respected and perceived as speaking from true clinical opinion by the target group, rather
than the piper simply playing the tune, then their endorsement on a product can be hugely
valuable, making the drug much more receptive (Mundy, 2009).

Drug companies spend a large portion of their marketing budget on key opinion leaders,
which is estimates from $8,000 to $13,000 every year in promotional expenses on an
average physician who they feel would influence certain group of medical practitioners
(Wazana, 2000). Influential physicians in some key practicing settings annually receive

Physicians, who are willing to write editorials supporting usage of certain product,
receive monetary compensation (Brennan, 1994). Drug company support of key opinion
leaders influences information provided in continuing medical education (Relman, 2001)
and medical publications (Lexchin et al, 2003). On the other hand, key opinion leaders
can be solicited to attack the competitor thus influencing a product prescription decision making process (Klenke, 2004).

Use of opinion leaders is a way of changing prescription behaviors of a particular group of GPs by influencing one or few reputable GP whose opinion is respected by the lest and could be followed (Wazana, 2000).

PRODUCT AVAILABILITY

Distribution involves getting the product from the manufacturers to the consumer. Many manufacturers fall for the trap that; if they make better product, consumer will buy it. The problem is that retailers may not devote shelf space for this new product and therefore it may not reach the consumer. Distributors add efficiency by; breaking bulk, consolidation and distribution, carrying inventory and financing.

Most manufacturers would prefer to have their products distributed widely so that their products are available in as many stores as possible. This is especially the case for convenience products where the customer has little motivation to go to a less convenient retail outlet to get his or her preferred brand. The vast majority of people would settle for their less preferred brand in a vending machine rather than going elsewhere to get their top choice. However, in a category of shopping goods for instance – buying Rolex wash-consumers do travel far and goods are evaluated by customers to some extent based on the surrounding merchandise (Perner, 2008)

Drug availability is determined by several stakeholders in the pharmaceutical sector but more so by the demand of the product. Kenya has been facing crisis on the availability of
anti-malarias, tuberculosis drugs and ant-retroviral drugs. This is due to shortages of these drugs in the world market, poor importation and distribution procedures, thus reading to drug unavailability of those drugs in government health institutions (www.acessmed-msf.org).

Once the development of a medicine is completed successfully, additional steps are required to make it available on national or international markets. Within the current framework these steps are usually undertaken by economic operators: manufacturers, marketing authorization holders, agents, wholesalers and pharmacists. Each country situation is different and the reasons for availability or unavailability vary. It is therefore up to each country to take up the most adequate measures in order to improve drug availability in their local markets. There is a need for a holistic approach, considering: regulatory as well as economic aspects, needs and roles of authorities as well as the economic operators and the different activities needed to get medicines into the markets (Eurostat, 2007).

Omide, Otieno & Boussery, (2004) in their study in Kenya on effects of drug availability on prescription behavior concluded that; drug availability influences GPs prescription behavior in a large extent. Some hospital formularies restricts the GPs prescription behavior to the extents that GPs can only prescribe what is in the formularies; otherwise ,there must be a good reason to do so. On the other hand the market players are driven by demand to segment the market in such a way that certain drugs are found in particulars pharmacies and not others.
Availability of anti-retroviral (drugs that slow down the course of HIV infection) in Kenya was once a challenge to the Kenyan government, but in 1990s many breakthroughs were made in treatment of HIV and AIDS. The responsibility for availability for a battery of anti-retroviral drugs does not belong to the drug companies alone; it belonged to a range of players, including activists, scientists, HIV victims who were ready to test the drugs, therefore a concerted effort among stakeholders is required to ensure drug availability (www.africapolicy.org).

Price control and drug formularies could have injurious effects on availability of pharmaceuticals. Price controls limit the ability of pharmacies to provide a wide spectrum of drugs. Too small formularies, especially for dispensing institutions, could lead to prescription drugs that are not the best choices. This would limit doctor’s autonomy and flexibility of decision making regarding the use of pharmaceuticals and could decrease the quality of healthcare (Breschi, 1988)

PRODUCT INFORMATION

Information is important to the consumer because it is used in the purchase decision. Information sources could be family, friends or neighbors who may have used the product customer has in mind. Alternatively the information could be form sales people or dealers, and product information literatures (Schudson, 2007).

The amount of information gathered varies with individual consumer and is affected by; past experiences, time availability, pre-existing product knowledge, information
accessibility, financial status, availability of similar products, the amount of time and
ergy devoted for information search (Hauser, 1993).

For medical practitioners to make informed decisions the information sought should be
from a reliable, valid and credible source and then disseminated through various
interpersonal and mediated means including; marketing professionals, internet, product
package and product monologues (De Lorme et al. 2003).

Drug information is important at three key levels in order to make the right treatment
decisions. First, it involves aggregation of drug use at various levels, and information on
indications, doses and dosage regimens, secondly, the question on disease indications
being handled and how it is managed must be addressed with adequately with
information, and thirdly, the demographic and other information concerning the patient
will be very useful (Sjoqvist & Birkett, 2003). General practitioners (GPs) use selectively
both commercial and scientific sources of information about drugs. Commercial sources
of information are the predominant ones in making GP’s drug prescription decision drug,
and scientific sources become increasingly important as the condition which is to be
treated becomes severe or as the treatment becomes less clear cut (Bauer & Wortzel,
1966).

Clinical information on drugs can be defined as “the commodity used to help make
patient care decisions”. Unfortunately, some of the information in doctor’s head is out of
date and wrong because the doubling time of the biomedical knowledge on drug is
currently about nine years, meaning that medical knowledge will increase four fold
during a profession lifetime. Inevitably doctors can not practice high quality medicine without constantly updating the information in their heads (Wyatt, 1996).

There are four potential communication outlets as identified by Moutinho (1987): primary, secondary, tertiary and personal information gained from an individual’s experiences. The first outlet, primary communication, considers knowledge consumers gain via the word of mouth communication from others. The second outlet, secondary communication considers information communicated via secondary sources such as the mass media. The tertiary focuses on knowledge conveyed through agents. The personal information considers information gained by the consumers based upon their own experiences. Moutinho (1987) observed that primary communication is the most effective. This suggests that if firms desire to communicate positive message to customers, their primary objective should be to generate primary types of communications regarding the companies’ positive effort. Therefore, if the message of the campaign augments the self image of the target market and it is linked to the firm’s name or its products, the target market attitude or perception towards the firm and its products should be higher (Burnkrant and Unnava, 1995).

Different characteristics of the information source such as credibility, clarity and motivation may explain the variation of the results. These characteristics can influence successful transmission of the message. However, even when message has been heard and understood, this does not guarantee a change in behavior. As a result, messages coming from the source and aimed at the same target group may produce different results (Denig & Haaijer, 1992).
PROMOTION

Promotion is used to communicate information about goods and services to target market audiences thereby facilitating the exchange process. Promotion plays an important role in informing, educating, persuading and reminding customers. Product promotion facts on specific product and as key provider of information needed to reduce difficulties involved in consumer choice (Nelson, 2004). Researchers have found that promotion makes consumer switch brands and purchase earlier or more (Sun, 2005).

The development of an effective promotion mix elements in the most appropriate way to meet the organization communication objectives (Helen, 2008). Promotion involves a number of tools which can be used to increase demand for a product. Advertisement is the most well known component of promotion, but there others like; public relations, trade promotions, sales promotions, personal selling, in-store display, sampling and premiums award (Perner, 2008).

Generally, a sequence of events is needed by a consumer who will buy a product. This is known as “hierarchy of effect”. Promotion objectives that are appropriate differ across the product life cycle. For instance, in the introductory phase- the most important objective is creating awareness among consumers. During growth phase- the most important needs of promotion are persuading the consumer to buy and prefer the brand over competing ones. During maturity stage- the firm may need to focus on maintaining shelf space, distribution channels and sales promotion. Different promotion approaches will also be appropriate depending on the stage of the consumers’ decision process that
the marketer wishes to influence i.e. pre-purchase stage, product choice stage or the post-purchase stage. Promotion contents strategies commonly used are intended to provide; persuading information, change in attitude through the addition of belief, classical conditioning, humor appeal, repetition, and celebrity endorsement (Perner, 2008).

In pharmaceutical industry, promotion relays influential information about what the product is and its benefits in relation to its competitors. The basic parts of a firm’s promotion efforts are personal selling, advertising, publicity and sales promotion (Futrell, 1992).

Promotion effort in the market for prescription drugs is likely to improve the information available to the doctors which in turn influence the doctor’s prescription behavior positively (Konrad, 2002). However, other than providing the beneficial information, promotion can also be harmful in the sense that it lowers price sensitivity of doctors thus exposing patient to unfair exploitation by the pharmaceutical companies (Windmeijer et al. 2004).

One of the common promotion forums is the pharmaceutical company funded continuous medical education (CME). This is commonly a new product launching strategy where the marketing company gathers a group of medical practitioners and an influential doctor or a medical specialist gives an educative talk on certain medical area in relation to the product being marketed. This is aimed at influencing the practitioners’ perception towards the product. Bowman (1986) analyzed the content of two CME sessions on calcium channel blockers, funded by different companies, and taught by faculty members. In one of the courses the funding company’s drug was mentioned more than
other medicines and the clinical effects ascribed to the funding company’s drug were more positive.

Medical representatives are the most powerful component of promotion. They can individualize their promotion methods according to their assessment of the motivations of the medical practitioner they visit in order to get the greatest support on their products. They use; gifts for reciprocal obligations, appear appealing to authority, social validation, commitment, consistency, friendly language and “magic” words that have powerful effects on behavior to get attention e.g. “new”, and “free offers” which create reciprocal obligations. They portray images that is appealing to desires e.g. security, creativity, power, worth, love and purpose. The image creates “mental link” between the drug, the indications and the image and the associated positive attributes or benefits. The drug representatives also keep on repeating the drug name and indications for agenda setting; this is because it is easier to prescribe the repeated drug than to take time to think of alternatives (Mercola, 2009)

PATIENT’S PREFERENCE

Consumer experience is the cognitive and reflective outcome of the customer’s exposure to or interaction with; a company’s people, process, technologies, products, services or other out puts. Consumers’ product evaluation is often influenced by information contained in their memories. Consumers with high levels of product experience are more effective at encoding and retrieving product attribute performance information (Kevin 2008).
Gilmore (2000) identifies two types of experiences; the positive customer experience – this describes customer experience as it is; it is a value free and objective statement of what it is like to be a customer. Secondly, the normative customer experience – as management or customer believe it should be, it is a value judgment of what the experience ought to be for a customer.

Customer experience may be the core value that buy or a differentiating value-add. Companies that continuously design customer experience want to evoke strong positive engagement. Such engagement might be experienced in a sense of confidence, integrity, pride, delight or passion. Companies do this by carefully designing what happens during moments of truth at customers touch point. Customer experience can become stale over time, and stale experience is not engaging. It is therefore necessary to constantly refresh the customer experience in order to get repeat business (Buttle, 2008).

For Experience goods, consumers do not have a complete information about some characteristics of the product, either because those characteristics are unobservable and can nor be determined before purchase or because the consumer is unsure about he effect of such characteristics on his own utility, even though they may be observed, the only way to learn is by buying the product and try it out (Lurie, 2009).

Customer experience acts as an internal variable and it acts in two dimensions; building trust in a consumer if the experience is pleasant and spoiling trust in a consumer if the experience is unpleasant. Pleasant experience has a strong influence on retaining trust and consumer loyalty and vice versa (Khazaei, 2006).
The customer's (patient's) experience accounts for cost/price/revenue difference. Customer requires a differentiated experience that is valued. That is why there are many drugs of the same kind but with different price tags. Some have as high as twenty folds price difference. This is so because the patient's requirements is not always the drug, neither its benefits in the literal sense, they want a valued experience (Park, 2003).

It is suggested (Pine & Gilmore, 1999) that “customers do not always choose; they want exactly what they want”. Patient's commitment depends on satisfaction, not with the product only but also with the complete experience of dealing with the supplying organization. The power of “experience marketing” is that it addresses the problem of retaining satisfaction and turning it into commitment by meeting the patient expectations, especially by relieving pain in shortest period possible. The biggest theme from this is that quality no longer needs to be “assured”: it is “assumed”. Consistently high quality products are essential order qualifiers- they do not win any patient, but without them you do not even get on to the field of play. The differentiated experience of engaging with the supplier company is the decisive factor securing customer preference (Park, 2003).

Patients visiting a doctor for treatment and drug prescription have expectations and preferences on the drugs that doctors ought to recommend or dispense. These expectations arise from past self experiences on certain drugs, or experiences from close allies. Some patients demand and manipulate doctors’ drug decision making, by openly telling doctors of their expectations and past experiences. On the other hand, doctor’s perceptions of patient’s wishes, influence drug prescription decision making process; this
arises after the doctor perceives the patient’s expectations and preferences (Himmed, Lippert, Kochen, 1997).

**PRODUCT SOURCE**

As more companies compete on the global markets, the country of origin cue become more important as consumers’ offers evaluate quality of a product based on the country where the product is produced. Past studies showed that consumer perceptions on a country of origin play a major role in influencing a consumers’ choice of a product (Ghazali & Othman, 2008). Country of origin can be defined as any influence that the country of manufacturer has on a consumers’ positive or negative perception of a product (Cateora & Graham, 2000).

Consumer behavior can be seriously impacted by country of origin factor in some ways; first, buyer may simply use the country of origin as one of the many attributes employed to engage in product evaluation (Johansson *et al.*, 2005). Secondly, the country of origin may great a halo effect whereby the consumers’ perception and evaluation of other products dimensions are affected (Erickson, 2004).

Country of origin has an effect on the market’s perception of the product – either positively or negatively (Kithunga, 2000). In U.S it is not only the GPs who question the origin of the drugs but also patients are beginning to inquire as to where the product originated (Reabe, 2009). Bover (2009) argued that some people have prejudices and it is not just because of the current explosion of products coming from India, but there some
patients that just do not want to take something that is originating from certain areas of
the world.

The country of origin serves directly as a state of symbol (Heslop and Papadopoulos,
1993). This aspect seems potentially highly relevant to the medical practitioner and drug
consumers. In Kenya, drugs originating from European countries are perceived to be of
superior quality than those originating from India or other Asian countries. Most private
hospitals have a preference for drugs from reputable multi-national companies as
compared to most public healthcare facilities which dispense locally manufactured drugs.
Consequently, this has led to market segmentation. Multinational companies target the
upper market like the urban areas and private organizations, where quality is of great
importance while the lower market is served by locally manufactured drugs and drugs of
Indian origin whose quality is perceived as doubtful. The country of origin, trade name or
company of a drug determines the effectiveness of ant-malarial drug in Kenya
(www.equitor-network.org.).

PRACTITIONER’S EXPERIENCE

In the early adult stages, more time is necessary to store some information into memory
(Bee, 2000). However, older adults are more cautious and are more concerned with
accuracy. Their cautiousness may explain some of the reduction in speed. It appears that
the storage and retrieval of information can also be affected by the relevance of and
familiarity of the material being processed, the presence of distractions, the amount of
material to be processed and the motivation to participate in the experiment (Birren et al
2003). Solomon (2002), in his cross sectional study, found out that younger persons sought out more rational experiences (Cognitive stimulation) than older persons, while age had no significant effect on irrational experiences (sensory stimulation). Because consumers at different age levels have more life experiences and understand themselves and their world differently, and because of historical differences of each cohort, consumers across the life-span could react differently on these and other consumer behavior variables (Lepisto, 2005). Stages of adult development have the potential to be used as basis of market segmentation. Consumers at the same stage will tend to view life situation in similar way which could lead to similar priorities, activities and possibly consumer behavior (Lawrence, 2005).

The age of the general practitioners (GPs) influences the prescription behavior. There is a preconception that older GPs are more loyal to certain drug brands and rigid to change due to marketing forces, while younger GPs are preconceived as adventurers and easily influenced by marketing forces, especially the influence by medical representatives (Stern, 2002).

2.4 EMPIRICAL LITERATURE

Several studies have been conducted in several scenarios where the fore mentioned factors were evaluated and the results differed because of variations in terms of populations studied, location, and characteristics of samples or research designs adopted. Review of other studies to highlight the differences and similarities with the current study in order to make improvements in the study design.
A study by Girdharwal (2007), in India on factors influencing drug prescription, a sample of 100 physicians was selected using random and purposeful sampling method in 10 districts which were randomly selected. The study indicated that physicians are quality, price and availability conscious. Quality of medicine is most important as it is not only helps curing but also helps in building their reputation. Company image and consistent results with product; judge the quality of products while prescribing.

Physicians were asked whether they shift from one brand to another brand in the same therapeutic range, where 86 per cent indicted yes and 12 per cent indicated no. The reasons of shifting were; price, introduction of new molecules, persistent of medical representatives, promotion efforts of companies and trial of new products. 42 per cent indicated they were influence by relationship marketing like holiday treats, wile 58 per cent indicated they were not influenced by relationship marketing. Concerning internet as a medium of information about new products, 58 per cent said they use it, while 42 said they do not. The physicians were also required to indicate their preference of internet over medical representative and only 4 per cent indicated yes while 96 per cent indicated no. The physicians were also asked to rank sources of information in terms of reliability and they ranked them as; journals and texts, continuous medical education sessions, medical representatives, mailers from companies and internets from the most reliable to least reliable.

However, the study had several shortcomings by assuming homogeneity on sample characteristics which could have affected the results, the sample size could not be justified and hence the generalization of the results.
In a study carried out in Athens, Greece by Kang and Geer (2006), compared the effects of drug price and its consequences of the use pharmaceutical products, and the relevant alternative factors that can be used to influence drug prescription behavior. The study sampled 30 general practitioners and 30 specialists. A questionnaire was administered to the sampled practitioners who were asked to choose between two hypothetical products (A and B) for the same condition, both having similar performance attributes except that one of them (product B) presented fewer side effects but cost 50% more. The objective was to test the migration paradigm at a pre-specified cost boundary. The study found out that GPs search for products with clinically proven results to treat the patient quickly without having to deal with the prices until the price changed to certain threshold. The study also found out that efficacy and safety of pharmaceutical products did not differ much in Greece and therefore they were not good strategic features as selling points. The study found out that brand loyalty, easiness to remember the brand name and the amount of information about a product had influence on prescription choices. However, the study did not consider effects of other factors such as; patient convenience, influence of opinion leaders, product information, product promotion which would have had an influence on the GPs prescribing behavior.

In a study conducted by United Nations Development Program (UNDP) (2004), on prices that patients pay for medicines in Kenya, a survey of price of 45 medicines was undertaken in public, mission and private sector pharmacies across the country. In this survey, prices that patients would pay for the innovator brand (IB), the generic equivalent with the highest sales nationally (most sold generic-MSG); and the generic product with
the lowest price at each facility (lowest priced generic-LPG) were assessed. The study was carried out in 157 outlets, comprising 53 public health facilities, 57 private for profit outlets and 47 mission facilities in a national survey covering all the 8 administrative provinces in Kenya. The study found that, the procurement prices for public and mission sector were 61% and 74% of international reference prices respectively. However, these competitive procurement prices did not appear to be reflected at the patient’s price level, as the ratios of procurement price: patient price reflect very large mark ups of 287% in the public sector and 358% in the mission sector.

The private sector had the highest patient prices relative to the international reference prices, with the innovator brands having a median of more than 17 times the international reference price, whereas the LPG was more than 3 times the international reference prices. In comparison, the Mission sector patient prices of the innovator brand and the LPG were on average, 8.5 times and 3 times the international prices respectively. The public sector offered the lowest patient prices, with the LPG at just under two times the international reference prices. By then, the lowest paid Kenya government worker earned Ksh.166 per day, and therefore needed between 1.1 and 4.3 days wages to purchase one months’ dose of the recommended treatment for hypertension (Atenolol) in the private sector using the LPG. Similar treatment using the innovator brand required 9 to 10.5 days’ wages. In contrast, using the LPG, the same worker would have required only 0.2 days’ wages for one month’s hypertension treatment in public sector, and 0.4 days’ wages in the mission sector (www.africapolicy.org).
However, this study failed to capture other factors that would influence usage of the medication other than price. It failed to capture drug availability, patients’ preference and promotion which could also determine drug accessibility and usage.

Stern (2002) carried out a study in U.K on the perceptions of healthcare managers and actual prescribing behavior of the General Practitioners. The objective of the study was set out to compare the perceptions of health managers with the behavioral reality of GP prescribing in U.K in order to provide a better understanding for those who are likely to have a significant input into the planning, delivery and evaluation of primary healthcare services.

In order to collect data from the target population, a questionnaire was administered and it asked specific questions regarding beliefs about the general prescribing behavior of GPs. These questions were designed to collect data which could be directly compared with the behavioral realities found in practice. The questionnaire was a modified version of one used to elicit views of GPs about the profession’s prescribing patterns. It was developed using a process which involved pre-pilot test and discussion with four GPs. The instrument was then finally sent 498 health managers targets. A total of 91 replies were received, a response of 18 per cent. The study indicated that; GPs are less loyal than was believed, on average older GPs prescribe 15 per cent more than their younger doctors across the 11 disease areas analyzed, GPs concentrate on a few drugs despite a wide portfolio of drugs, 49 per cent of respondents believe that greater loyalty is shown to brands while 22 per cent of industry respondents believe that loyalty to generics is greater and 22 per cent believe that GPs are equally royal to brand and generics. The study
concluded that in general GPs are no more loyal to specific brands than they are to specific generics. The study found out that the average U.K GP had no loyalty to a drug within a therapy area and would prescribe four to five different drugs to treat next ten patients in any of five disease areas studied. However, the study also found out that GPs in general do have dominant favorite products which they prescribe. By the time a GP have seen a hundred patients with the same diagnosis; they will have prescribed about ten different drugs. The two favorites will account for 50 of 100 prescriptions, leaving the remaining 50 prescriptions to be shared by eight drugs.

The study also indicated some prescription behavioral realities, 51 per cent thought that older (over 30 year’s experience) GPs prescribed different drugs for the same ailment more frequently than their younger (less than 30 year’s experience) counterparts. On the other hand, just 24 percent thought younger GPs prescribed different drugs for the same ailments more frequently than their older colleagues. The study established that older UK GPs do indeed prescribe different kinds of drug for a similar kind of disease than their younger counterparts, but there was a lot of variability by disease.

Though the study investigated on the prescription behavior of GPs, the obtained results would not be reliable enough because the respondents were not GPs and the healthcare managers responded on behalf of actual prescribers who would otherwise responded differently.

In a different study conducted in the greater southern Munich in German by Johannes et al. (2003) to investigate the effect of age in drug prescription behavior, 100 psychiatrists were sampled. 50 psychiatrists were in private practice and 50 psychiatrists were in 8
different psychiatry hospitals. Psychiatrists in private were older than their hospital-based colleagues (mean age 49.8 and 39.4 years, respectively) and had more work experience. The study found out that those patients treated by the older psychiatrists were about 5 times more likely to receive first generation anti-psychotics than patients treated by younger psychiatrists who prescribed new generation anti-psychotics. This demonstrates that the older psychiatrists stuck to drugs they knew best or the drugs they had become accustomed to during training, while on the other hand, the younger practitioners might not have been well acquainted with first generation anti-psychotics, whereas older psychiatrists were familiar with old drugs and therefore still used them more frequently. This would go along with findings from other medical fields in which medical practitioners who had more recently graduated were more likely to adopt early new drugs such as anti-depressants, anti-microbial, or cardio-vascular agents (Talably et al. 2003).

A study by Shaver (2007) on changes in the USA consumer attitude between 2005 and 2006, found that online information search enhanced consumer decision making capabilities. The study also found out that, consumers rely less on the traditional media information sources and that despite the increased information sources available online, most consumers are not confused their information options. However, the focused pre-purchase information search is likely to remain a niche-though a significant niche factor in consumer decision making behavior. The study concluded that internet represents a shift in the relative power of the marketers and the consumer in the information acquisition process. This shift provide an opportunities for the marketers to adopt more
effective approaches to this consumer segment and provide media outlets new opportunities for leveraging their branded capabilities and objectivities to develop new revenue opportunities. The internet appears to substantially modify the information flows in the search process. The consumers’ ability to access a broad range of information regarding key products or services factors is considerably enhanced. This strengthens the role of the consumer as an independent information seeker and reduces the ability of advertisers to control and focus information flow. This enhanced level of control the consumer ability to match product quality to their preferences or needs and can result in increased confidence in purchase decision (Airely, 2000).

In a study by Chren & Landefeld (2004), clearly indicate that a health care practitioner practice can be influenced by personal interactions with pharmaceutical representatives. The study found out that GPs who met representatives from a pharmaceutical company were more likely to make request formulary additions for that company’s drugs than for comparable drugs produced by other companies, and they are more likely to make such requests than practitioners who do not meet with pharmaceutical representatives.

Larsen and Schaumman (1990) in their study concerning promotion mix for the pharmaceutical companies marketing in Japan found out that; pharmaceutical promotion in Japan is mainly by personal selling through the medical representatives, which accounted for 78 per cent. Advertising was responsible for 17 per cent and other promotion tools accounted for the remaining 5 per cent.

A study on extent influence patients’ preference has on medical practitioner’s prescription behavior in asthma management was conducted in Singapore by Tan et al.
The study involved a sample of 29 GPs of which their responses were recorded in an audio tape. Some practitioners indicated that patients’ personal view and understanding of their disease and treatment, perception of disease severity and levels of motivation were significant considerations that affected their asthma drug prescription behavior. The respondents indicated that they had to explore the patients’ belief system about asthma, what is severe or moderate to them and what they are prepared to take before they could introduce asthmatic product to the patients. The respondents also indicated that, if a patient was used to certain ‘tablet’ which had worked well for them, they will not break out of the tablet and they will insist on the tablet. Some patients are very resistant converting orals to inhalers drug. Other patients are resistant to asthma preventers which are to be taken for a relatively long period for fear of getting resistance, enslaved to the medication fear of side effects or fear of costs. Many respondents indicated that patients had a tendency towards a quick relief on their acute symptom. This study only considered a few factors influencing asthmatic drug prescription behavior and left other factors.

A study by Ibrahim (2008), on Malaysian consumer’s perception towards foreign products and how the country of origin affects influences their behavior, results showed that Malaysian consumers are inclined to attribute higher quality to products made in developed in countries. The study also showed that the average Malaysian consumer does not consider the country of origin aspect to be their priority in deciding to purchase a product. Other product attributes take precedence, particularly its quality, technological, prowess and price. However, the study concluded that; consumer behavior can be
seriously impacted by country of origin factor in some ways; first, buyer may simply use the country of origin as one of the many attributes employed to engage in product evaluation (Johansson et al, 2005). Secondly, the country of origin may great a halo effect whereby the consumers’ perception and evaluation of other products dimensions are affected (Erickson, 2004).

2.5 SUMMARY OF LITERATURE REVIEW AND STUDY GAP

The foregoing literature shows that only a few studies on drug prescription behavior have been carried out in Kenya. Elsewhere, a number of factors that influence drug prescription has been studied but have not been compared or rated with others for purpose of ranking their significance in drug prescription behavior. However, some factors like drug quality and safety seem to have an over all significant effect in all the studies.

The prescribing environments and circumstances surrounding drug prescription are unique in most instances and therefore, importance attached to a particular factor may vary accordingly. This is as a result of difference in economic status of different countries, populations, ethics or level of regulations of drug prescription. For example, in developed countries like UK, price seem to play a less prominent role in drug prescription behavior, but in Kenya, price play an enormous role in choice of drug because a large portion of population has low purchasing power, and therefore a recommendation for the respondents in this study that pharmaceutical companies improve on pricing strategies.
determine factors influencing drug prescription behavior in Kenya because the environment in Kenya has a unique background.

Secondly, little has been achieved on how the GPs prioritize those factors when making drug prescription decision and therefore, after determining the factors, there is a need to evaluate the extent of influence that those factors exert on the drug prescription behavior by how the GPs rank them in order of importance.

2.6 CONCEPTUAL FRAMEWORK

To reach a decision on a particular brand name could be as a result of consideration and prioritization of a number of factors by general practitioners before recommendation of any drug to the patient. Practically, drug prescription behavior depends on different independent factors as illustrated in fig.2 below.

Cost affects prescription decision among general practitioners (GPs) especially in public hospitals, whereas family GPs showed a preference for less expensive drugs (Norsita & Bahari, 1995). Pricing strategies should be in search way that balances between profit margins so that the company can generate expected revenue and affordable and competitive prices that does not hinder drug accessibility. However, price sensitivity may vary from one situation to the other depending on affordability of drug to the consumer.
Opinion leaders get engaged by pharmaceutical companies to advice and help boost sales of pharmaceutical products through influencing the GPs' perception on the drug (Moynihan, 2008). Promotional activities carried out by pharmaceutical companies motivate the general practitioners to prescribe.
The right drug information influences the GPs positively and consequently improves the positive perception on the drug thus improving the number of prescriptions of the drug. Brand loyalty exists for many categories of products, and many doctors keep on prescribing them to their patients (despite the premium prices that could be tagged on them) instead of the clinically identical product existing in the market (Rotfeld, 2005).

Quality is important in achieving the ultimate purpose of giving a prescription; therefore, the quality will strongly influence the prescription behavior of a GP. Because of the close relationship between quality and the relative drug safety, pharmaceutical compounds quality and safety profile highly influences medical practitioners’ drug prescription since they both determine the efficacy and side effects profile of a product. Consequently, medical practitioners have a preference on relatively safer products (Galloway, 2003). GPs will only consider prescribing a drug with known serious side effects after weighing benefits against the side effects.

Certainty on the availability of a product enhances GPs confidence to prescribe a drug. This is how drugs in formularies usually get the first priority to get prescribed as compared to those which are not in the formulary (www.acessmed-msf.org, 2007).

The effect of opinion leaders is important in determining the direction drug prescription behavior by influencing other practitioners’ behavior, either positively or negatively. When the opinion of a reputable practitioner towards a product or a company is strong, others will likely follow his prescription behavior and vice versa (Mundy, 2009).
Promotion activities are tailored to influence and motivate medical practitioners towards prescribing a product. Research has repeatedly found that once a company starts promoting a drug, there are more prescriptions on the drug than before, this because more practitioners become aware of its existence. Even the number of patients diagnosed with the disease indications similar to those the promoted drug increases (Wazana, 2000).

The age of a GP is a characteristic that influences the prescription behavior of most general practitioners. The old practitioners have a consistent prescription behavior because they have already formed attitudes towards a drug and therefore are less likely to change. The younger and less experienced are more adventurers and have not yet formed any rigid prescription pattern, hence are easily influenced to change their behavior.

Most patients, especially the literate, form opinions from their past experience or from other consumers, which they air to GP in order to influence GP’s prescription decision, while other make demands to suit their expectations.

Perception on the country of origin of a pharmaceutical product plays a major role in GP’s prescription decision making. If the country of origin is perceived to manufacture trustworthy drugs, GPs will prescribe them to the patients as far as they can afford them and vice versa. Consequently, this influences the speed of market entry and volume of sales of a drug (Bover, 2009)
CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This chapter describes the research design and procedures on how the research was carried out. It describes the study population, data collection techniques, and data analysis.

3.2 RESEARCH DESIGN

Descriptive research design was applied in the study in order to depict the factors influencing GPs’ drug prescription behavior, the extent of influence exerted by each factor and whether the marketing activities carried out in Kenya has impacted significantly on the drug prescription behavior. GPs were studied in evaluation of drug prescription behavior because their prescriptions cut across a wide range of drug categories, and therefore are less biased (2002). Descriptive research has the objective to know and interpret a reality without any interference or change. In this investigation the main objective was to find out factors influencing drug prescription behavior phenomena, describe them, classify them, and interpret them. The data collected was quantitative and statistical techniques were used to summarize it. (Mattar, 1996) acknowledges that this type of research design is well structured and directed to solve the problem.
3.3 THE STUDY POPULATION

The population of study consisted of all general practitioners of all ages, both genders, who were then registered by the Medical Practitioners and Dentists Board and who were working in Nairobi province. This category of doctors consists of medical school graduates who are not specialized in any medical field. The sampling frame was obtained from a complete list of general practitioners as presented by the current Kenya Medical Directory (15th edition 2009/2010).

3.4 THE SAMPLE DESIGN

For this study, a census investigation was undertaken. Census survey was preferred because the population size was small and on the other hand, such a survey has a benefit of enabling the researcher to have an intensive study of each unit and also achieve great accuracy when generalizing the results, Peterson (1995) and Bill (1992).

3.5 MEASUREMENT OF VARIABLES

Measurement of the variables was achieved by use of Likert scale, where the GPs were required to give their opinion on factors that influence their prescription behavior, the extent of influence exerted by those factors and their perception on promotion tools commonly used in the Kenyan market; on a range of (1-5) one to five point scale, with one extreme end being assigned one (1) and the other extremely being assigned five (5). Since attitudes are assumed to be a precursor of behavior and are considered to express a
person’s beliefs, then, the measure of attitude were used to depict the behavior of the respondents.

3.6 VALIDITY AND RELIABILITY

For the purpose of reducing systematic errors and ensuring validity in measurements, only one type of measuring tool was employed in data collection i.e. the questionnaire. The questionnaires were distributed at the same short period of one week and they had the same questions format and wordings. The engagement of the whole population of GPs in the study also contributed to validity of the results since it was easy to generalize the results since there no sampling errors.

To ensure reliability, the questionnaire was pre-tested on a sample of 20 GPs who were not part of population of study to avoid pre-exposure effect.

3.7 DATA COLLECTION

The survey instrument for primary data collection was a questionnaire with both structured and unstructured questions divided into two sections. The first part sought to gather general demographic data on the general practitioner, while the second part sought to gather data addressing the key objectives of the study. To answer the objectives of the study, questions were formulated using rating scales, closed ended questions and open-ended questions. One questionnaire per GP was administered using the ‘drop and pick method’. An introduction letter from the university together with a specimen letter written by the researcher was attached to the questionnaire.
3.8 DATA ANALYSIS

Before processing the responses, the completed questionnaires were edited to ensure accuracy, consistency, uniformity, and completeness. In analysis, the data, descriptive statistics was applied which included use of proportions like; percentages, tables, graphs, pie-charts and cross tabulation. Several other researchers including Cheruiyot (2003), Mulwa (1998), Sandwa (1995), Ng’etich (1989), and Gathua (1989) have successfully analyzed similar kind of data this way, hence this method was chosen. The statistical package for social scientists (SPSS) was utilized to analyze the data, since it is efficient, accurate and up to date in data analysis.
CHAPTER FOUR
DATA ANALYSIS AND DISCUSSION

4.1 INTRODUCTION

This chapter presents the findings of the study and is divided into three parts. The first part involves analysis of the general characteristics of the studied population, the second part deals with analysis of the objectives of the study and the third part presents interpretations and discussion on results of data analysis as it follows.

4.2 SAMPLE CHARACTERISTICS

The study evaluated sample characteristics of the respondents in order to understand the research background. The considered characteristics were; gender, age, work experience and the types of healthcare facilities that the respondents worked in.

Table 4.2 below shows that males consisted of 77.3 per cent of the respondents while females were at 22.7 per cent, implying, there were 55 per cent more males than females.

The age structure of the respondent was categorized into four age groups. Majority of respondents were at the age of 46 -55 years at 36 per cent, followed by younger group of 36 -45 years at 28.8 per cent while the over 56 years followed closely at 21.2 per cent. The minority were the respondents at age of 25-35 years at 16.7 per cent.

On working experience, the respondents who had 16 - 20 years were 28.8 per cent, while those who had over 21 years were 22.7 per cent. The category of 11 – 15 years of work...
experience had only one respondent, 6 – 10 years of work experience was at 34.8 per cent while the 0 – 5 years of experience had 12.1 per cent.

On working environment, 83.3 per cent of the GPs work in private health facilities while only 16.7 percent work in public health facilities.

Table 4.2 Sample characteristics

<table>
<thead>
<tr>
<th>Sample Characteristic</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>51</td>
<td>77.3%</td>
</tr>
<tr>
<td>Female</td>
<td>15</td>
<td>22.7%</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

| Age (yrs):                     |           |            |
| 25-35                          | 11        | 16.7%      |
| 36-45                          | 17        | 25.8%      |
| 46-55                          | 24        | 36.4%      |
| 56 and above                   | 14        | 21.2%      |
| Total                          | 66        | 100.0%     |

| Working experience (yrs):      |           |            |
| 0-5                            | 8         | 12.1%      |
| 6-10                           | 23        | 34.8%      |
| 11-15                          | 1         | 1.5%       |
| 16-20                          | 19        | 28.8%      |
| 21 and over                    | 15        | 22.7%      |
| Total                          | 66        | 100.0%     |

| Type of health facility:       |           |            |
| Public                         | 11        | 16.7%      |
| Private                        | 55        | 83.3%      |
| Total                          | 66        | 100.0%     |

Source, survey (2010)
4.3 FACTORS THAT INFLUENCE DRUG PRESCRIPTION

4.3.1 Importance of Pharmaceutical Product Attributes

The relative importance of drug quality, safety, compliance and information were ranked by respondents on a 5-point Likert scale with (one) 1 taken to mean extremely important and 5 as least important based on weighting scale label of 5-score for 1 and 1-score for 5.

Table 4.3.1 Relative importance of product attributes (n = 66)

<table>
<thead>
<tr>
<th>Product Attribute</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality</td>
<td>4</td>
<td>5</td>
<td>4.94</td>
<td>0.240</td>
</tr>
<tr>
<td>Safety</td>
<td>3</td>
<td>5</td>
<td>4.80</td>
<td>0.471</td>
</tr>
<tr>
<td>Information</td>
<td>1</td>
<td>5</td>
<td>4.20</td>
<td>1.776</td>
</tr>
<tr>
<td>Availability</td>
<td>1</td>
<td>5</td>
<td>4.14</td>
<td>1.051</td>
</tr>
<tr>
<td>Compliance</td>
<td>1</td>
<td>5</td>
<td>3.07</td>
<td>1.140</td>
</tr>
</tbody>
</table>

Source, survey (2010)

Table 4.3.1 above shows listed factors in order of importance. It can be deduced that quality and safety are of prime importance in pharmaceutical products. They are at mean score of 4.94 and 4.8 respectively, and therefore, close to 5 which according to the Likert scale in the questionnaire represents 'extremely important'. The relatively small standard deviations on the two factors imply that almost all of respondents agreed, with minimal deviations, that drug quality and safety are extremely important factors. This confirms the
fact that quality and safety are the core values of a drug considered by GPs when prescribing a drug as indicated in the literature review. Product information was ranked at third in terms of importance at a mean score of 4.2, which is labeled as ‘most important’ in the Likert scale. Drug availability was ranked fourth, at mean score of 4.14 which on scale label falls on ‘most important’. Drug compliance was ranked distant fifth at mean score of 3.07, which in terms of Likert scale label is ‘important’.

4.3.2 Extent of Influence on Drug Prescription by Studied Factors

The respondents were asked to rate the extent of influence that various factors had on their drug prescription behavior. The respondent ranked the factors on a 5 point Likert scale where 1 was taken to mean ‘extremely influential’ and 5 as ‘rarely influential’ on weighting scale of 5-score for 1, and 1-score for 5. Table 4.3.2 show the ranking of GPs’ opinion on extent of influence each factor had on their drug prescription behavior. Drug quality and safety were the two most influential factors. They had mean scores of 4.89 and 4.77 respectively, which on the Likert scale are labeled ‘highly influence’. They had the least standard deviation of 0.397 and 0.52 respectively, implying that the respondents did not differ a lot on opinion concerning these factors. Drug availability followed at distant third at mean score of 4.29 which on the scale label falls on ‘highly influence’. Patients experience closely followed drug availability at mean score of 4.26 and therefore also labeled ‘highly influence’. Product information was rated fifth at mean score of 3.79 labeled as ‘moderately influence’. Product promotion was rated sixth at mean score of 3.39 which was labeled ‘moderately influence’. Brand loyalty and working experience
were very closely ranked at mean scores of 3.15 and 3.07 respectively and labeled 'moderately influence'. Price was rated ninth at a mean score of 2.82 labeled 'slightly influence' and had the highest standard deviation of 1.249. Opinion leader was rated at tenth position at mean score of 2.7, which on scale label falls on 'slightly influence'.

Drug source was ranked the least influential factor; it had the least mean score of 2.58 and a relatively high standard deviation of 1.313.

Table 4.3.2 Extent of influence each factor has on drug prescription behavior (n = 66)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality</td>
<td>3</td>
<td>5</td>
<td>4.89</td>
<td>0.397</td>
</tr>
<tr>
<td>Safety</td>
<td>3</td>
<td>5</td>
<td>4.77</td>
<td>0.520</td>
</tr>
<tr>
<td>Price</td>
<td>1</td>
<td>5</td>
<td>2.82</td>
<td>1.335</td>
</tr>
<tr>
<td>Brand loyalty</td>
<td>1</td>
<td>5</td>
<td>3.15</td>
<td>1.126</td>
</tr>
<tr>
<td>Opinion leader</td>
<td>1</td>
<td>5</td>
<td>2.70</td>
<td>1.123</td>
</tr>
<tr>
<td>Availability</td>
<td>1</td>
<td>5</td>
<td>4.29</td>
<td>1.019</td>
</tr>
<tr>
<td>Information</td>
<td>1</td>
<td>5</td>
<td>3.79</td>
<td>1.330</td>
</tr>
<tr>
<td>Promotion</td>
<td>1</td>
<td>5</td>
<td>3.39</td>
<td>1.214</td>
</tr>
<tr>
<td>Patient's experience</td>
<td>1</td>
<td>5</td>
<td>4.26</td>
<td>0.982</td>
</tr>
<tr>
<td>Drug source</td>
<td>1</td>
<td>4</td>
<td>2.58</td>
<td>1.313</td>
</tr>
<tr>
<td>Working experience</td>
<td>1</td>
<td>5</td>
<td>3.09</td>
<td>1.249</td>
</tr>
</tbody>
</table>

Source, Survey (2010)
4.3.3. Recommendations on Improvement of Crucial Factors

In the questionnaire, the respondents were asked to recommend three factors that required improvement. The respondents recommended improvement on five factors out of eleven possible factors. Table 4.3.3 shows multiple responses on various recommended factors. Frequency values indicate the number of counts of recommendations made on each factor which summed to 185 recommendations. The per cent of responses indicate the percentage share of responses for each factor. Of all the recommendations suggested 25.4% were on drug quality, followed by 23.8% on information and pricing strategies followed closely at 22.7% of the total recommendations. Promotion and drug availability had the least share of recommendations at 15.1% and 13% respectively.

Table 4.3.3 Multiple responses on recommendations for improvements

<table>
<thead>
<tr>
<th>Factor</th>
<th>Frequencies</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality</td>
<td>47</td>
<td>25.4%</td>
</tr>
<tr>
<td>Information</td>
<td>44</td>
<td>23.8%</td>
</tr>
<tr>
<td>Price</td>
<td>42</td>
<td>22.7%</td>
</tr>
<tr>
<td>Promotion</td>
<td>28</td>
<td>15.1%</td>
</tr>
<tr>
<td>Availability</td>
<td>24</td>
<td>13%</td>
</tr>
<tr>
<td>Total</td>
<td>185</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source, Survey (2010)
4.4 PERCEPTION ON COMMONLY USED PROMOTION TOOLS

4.4.1 Reliability of Information Sources

The respondent were asked to rank various given sources of information, depending on their reliability. Table 4.4.1 below, shows that personal selling (medical representative) was the most reliable source of information with the highest mean score of 3.97, which on the scale label falls on 'moderately reliable'. College training had second highest mean score of 3.64, which also falls under the scale label 'moderately reliable'. C.M.E came at close third highest mean score of 3.55, thus falling on the same scale label as the first two sources. Company website was rated fourth at a mean score of 2.35, which on the scale label represented 'slightly reliable'. Medical journals was rated the least most reliable source of information at a mean score of 1.89 which falls on 'rarely reliable' on the scale label.

Table 4.4.1 Reliability of information sources (n = 66)

<table>
<thead>
<tr>
<th>Information Source</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical representative</td>
<td>1</td>
<td>5</td>
<td>3.97</td>
<td>1.265</td>
</tr>
<tr>
<td>Formal education</td>
<td>3</td>
<td>5</td>
<td>3.64</td>
<td>1.145</td>
</tr>
<tr>
<td>C.M.E.s</td>
<td>1</td>
<td>5</td>
<td>3.55</td>
<td>1.192</td>
</tr>
<tr>
<td>Company website</td>
<td>1</td>
<td>5</td>
<td>2.35</td>
<td>1.295</td>
</tr>
<tr>
<td>Medical journals</td>
<td>1</td>
<td>4</td>
<td>1.89</td>
<td>1.191</td>
</tr>
</tbody>
</table>

Source, survey (2010)
4.4.2 Perceptions on Gifts and Holiday Treats

A question on whether taking medical practitioners for holidays and giving them gifts is a justifiable/ethical way of drug promotion or not was asked. Respondents gave their opinions by indicating ‘yes’ or ‘no’. From table 4.4.2 below, it is clear that majority of the respondents widely advocated this kind of marketing by 86.4 per cent. Nonetheless, 13.6 per cent of the respondents were against it.

Table 4.4.2 Respondents’ opinions on gifts and holiday treats.

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>57</td>
<td>86.4%</td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>13.6%</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source, survey (2010)

4.4.3 Perception on Drug Samples

The purpose of drug samples has been controversial, one school of thought urge that drug samples are used by marketers as a marketing gimmick where the receiving medical practitioners are obligated to reciplocate with some drug prescriptions, and this approach is seen as unethical. The other school of thought urge that drug samples are genuinely given and are necessary for clinical trials. Respondents were asked to indicate their opinions on the two ideologies. The results were as in table 4.4.3 below. 75.8 per cent of the respondents indicated that samples are genuinely purposed for clinical trials, while 24.2 indicated that they are used as a marketing gimmick to entice drug prescription.
Table 4.4.3 Purpose of drug samples

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing gimmick</td>
<td>16</td>
<td>24.2%</td>
</tr>
<tr>
<td>Genuine clinical trials</td>
<td>50</td>
<td>75.8%</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source, survey (2010)

4.5 PREFERENCE FOR ORIGINAL BRANDS OVER GENERIC PRODUCTS

The respondents were asked to indicate their preference for original brands over generic products by answering ‘yes’ or ‘no’ against ‘preference’ and results were tabulated in table 4.5.1 below. 63.6 per cent of the respondents had preference for original brands over the generic products while 36 per cent did not have.

Table 4.5 Preference for original brands over generic products.

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>24</td>
<td>36.4</td>
</tr>
<tr>
<td>Yes</td>
<td>42</td>
<td>63.6</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source, survey (2010)
4.6 COMPARISONS OF RESPONSES BETWEEN PUBLIC AND PRIVATE HEALTHCARE FACILITIES.

Response on factors influencing drug prescription behavior is deemed to depend on type of healthcare facility that a GP works in. For instance, most of patients who seek treatment in the public healthcare facilities are known to be the low income earners, they do not have the financial ability to afford expensive drugs. Therefore GPs who work in public institutions are presumed to be more price conscious than their counterparts in private health clinics. Contrarily to this scenario, patients who seek treatment in private facilities are financially able and have a preconceived notion that good quality drugs are highly priced. In order to meet these patients’ expectations, sometimes, GPs in private clinics prescribe expensive brands despite the kind of ailments.

Mean comparisons in this study compares responses on factors influencing drug prescription between the private and public healthcare facilities. Table 4.6.1 below compares means of surveyed factors across the two types of healthcare facilities, from the factor that had highest mean disparity to the one with least mean disparity.

The means on the factors that influence drug prescription behavior were on a five points Likert scale offive to one (5 – 1), where 5 indicated ‘extremely influence’ and 1 indicated ‘rarely influence’. From the table 4.6.1. below, it can be observed that the disparity in mean scores was highest for patients’ influence, the mean is higher in private facilities at 3.64 than in public facilities at 3.18, thus a disparity of 0.46. The second high disparity is on price which is at 2.95 for public facilities and 2.50 for private facilities, thus a difference of 0.45.
Table 4.6.1 Correlation of type of health facilities and factor’s extent of influence (n = 66)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean in Public Facilities</th>
<th>Mean in Private Facilities</th>
<th>Mean Disparity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients’ influence</td>
<td>3.18</td>
<td>3.64</td>
<td>0.46</td>
</tr>
<tr>
<td>Product price</td>
<td>2.95</td>
<td>2.50</td>
<td>0.45</td>
</tr>
<tr>
<td>Product availability</td>
<td>4.00</td>
<td>4.35</td>
<td>0.35</td>
</tr>
<tr>
<td>Drug source</td>
<td>2.74</td>
<td>2.51</td>
<td>0.23</td>
</tr>
<tr>
<td>Product information</td>
<td>3.64</td>
<td>3.82</td>
<td>0.18</td>
</tr>
<tr>
<td>Brand loyalty</td>
<td>3.00</td>
<td>3.18</td>
<td>0.18</td>
</tr>
<tr>
<td>Working experience</td>
<td>3.18</td>
<td>3.07</td>
<td>0.11</td>
</tr>
<tr>
<td>Drug quality</td>
<td>4.82</td>
<td>4.91</td>
<td>0.09</td>
</tr>
<tr>
<td>Opinion leaders</td>
<td>3.01</td>
<td>2.50</td>
<td>0.06</td>
</tr>
<tr>
<td>Drug safety</td>
<td>4.71</td>
<td>4.75</td>
<td>0.04</td>
</tr>
<tr>
<td>Drug promotion</td>
<td>3.36</td>
<td>3.40</td>
<td>0.04</td>
</tr>
</tbody>
</table>

Source, survey (2010)

The third high disparity is on drug availability which is at 4.35 for public facilities and 4.0 for private facilities, thus a difference of 0.35. It is followed by drug source where is at 2.91 for public facilities and 2.51 for private facilities, thus a difference of 0.23. The fifth factor is drug information which is at 3.82 for private facilities and 3.64 for public facilities, thus a difference of 0.18. At the same position as drug information is brand loyalty which is at 3.18 for private facilities and 3.0 for private facilities, thus a disparity...
of 0.18. This is followed by working experience which is at 3.18 for public facilities and 3.07 for private facilities, thus a disparity of 0.11. Drug quality followed at 4.91 for public facilities and 4.82 facilities, thus a disparity of 0.09. Opinion leader followed next at 3.01 for public facilities and 2.50 for private facilities, thus a disparity of 0.06. Drug safety and promotion had the least disparity of 0.04 with drug safety was at 4.75 for private facilities and 4.71 for public facilities, while promotion was at 3.40 for private and 3.36 for public facilities.

4.7 DISCUSSION

From the sample characteristics observed, the sample population is male dominated at 77.3 percent as compared to 22.7 per cent females. Gender determines several character traits like ego, lifestyle and social aspects which may then affect perceptions and attitudes towards a product, promotion mix and consequently several aspects of marketing. The age structure of the sample population is dominated by a category of middle aged GPs at the age between 35-55 years who make up to 61 per cent, while least of the age groups share the remaining percentage. The age factor has got influence on perception of ideologies like internet technologies and trends of lifestyle which in turn may affect perception of marketing styles and strategies. For instance, age, probably, could be the reason as to why web site, as a source of information had only a few respondents. Studies have shown that young people all over the world adapt to internet technology faster than the older generations.
Working environment is believed to shape attitudes and behaviors. Therefore, the two types of health care facilities that the respondents worked in ought to have an impact on their drug prescription behavior. This study scrutinized the differences on responses of GPs in the two working environments by comparing mean scores on responses of factors influencing drug prescription in both public and private health care facilities as will be discussed toward the end of this section.

On factors that influence GPs' drug prescription behavior, quality and safety were ranked the most influential at mean score of 4.88 and 4.77 respectively which on the scale label falls on ‘extremely influence’ and standard deviations of 0.397 and 0.52 respectively. These results confirm the fact that drug quality and safety are the core values of a pharmaceutical products as indicated in the literature review. Patient experience on a product has emerged as a relatively high influential factor and this could have probably been as a result of high level of literacy of the patients, some knowledge and experience on drugs, and the fact that majority of respondents (83%) worked in private facilities where patients are more vocal on the choice of treatment they expect as compared to public facilities where patient has little or no say on the treatment they receive.

Influence of price had a mean score of 2.82 which on the scale label puts price as one the least influential factors. This implies that despite the challenges brought about by drug prices, Kenyan general practitioners do not compromise the core values of drugs.

However, product information, promotion and brand loyalty had a significant influence on prescription behavior and were rated at mean scores of 3.79, 3.39 and 3.15 respectively, which on the scale label falls on ‘moderately influence’. Drug source has
the least influence among the surveyed factors at a mean score of 2.58, which on the scale labels falls on 'slightly influence' and a relatively large standard deviation of 1.33. This implies that drug source is not an influential factor among the respondents and they differed a lot on its influence on their prescription behavior.

Five factors (drug quality, drug promotion, pricing strategies, drug availability and product information) out of possible eleven were recommended for improvement. Drug quality and pricing strategies were highly indicated for improvement. This implies that despite the fact that price had not been rated among the highly influential factors; it is a sensitive factor that influences drug prescription behavior silently. Product information dissemination was also indicated for improvement, which implies that information is important drug prescription decision making. It may not be conclusive to say that factors which were not recommended for improvement do not actually need improvement; but they could have been left out because the questionnaire limited the response to only three factors, of which the respondents probably responded with the most obvious ones.

Among the five information sources suggested in this study, (personal selling) medical representative was indicated as the most reliable source at a mean score of 3.97, which on the scale label falls on 'highly reliable'. This is can be explained by the fact that personal contact elicit emotions which provide convenient and convincing grounds and also provide immediate response to the practitioners quarry. Formal education and C.M.Es were rated at mean scores of 3.64 and 3.55 respectively, which on the scale label both falls on 'moderately reliable'. Formal education has an early impact on prescription behavior because what is formerly learned is rarely forgotten. On the other hand, CMEs
are usually highly popularized with scientific research findings and evidence based back ups. Company web sites had a mean score of 2.35, which on scale label falls on 'slightly reliable'. This implies that internet has not yet been taken as a credible source of medical information, especially for the reason that no one can be easily be held responsible for the information, inaccessibility of internet technology and lack of trust on the source.

Medical journals are least reliable sources of product information at a mean score of 1.89, which is labeled 'rarely reliable'. This could be associated with post academic non-reading culture with majority of Kenyans.

On the question on whether it is justifiable for the pharmaceutical companies to treat GPs with holidays and gifts, majority of the respondents indicated a support for this idea at a mean score of 86 per cent, while 13 per cent opposed it. However, results would probably differ significantly if the respondents were not the recipients of the said gifts and holiday treats.

Preference for innovator (original) brands over generic brands is an ongoing debate, where the original brands companies capitalize on quality as their strength despite their relatively high prices, while generic companies offer relatively better prices despite their argued 'matching' quality to that of original products. In this study, 63.6 per cent of the GPs indicated that they had a preference for original products over generics while 36.4 per cent indicated they had no preference. In Kenya, preference for the original product is coupled with the aspect of prestige among the prescribers and 'economically suitable' patients, rather than the fact whether there exists a difference between the original product and the generic. On the other hand, low income earners and those who are less
concerned with brand name opt for generics which offer similar perceived or actual product benefits.

The legitimate purpose of drug sample is for a practitioner to conduct a trial on its efficacy and evaluate some of its attributes. However, there is some feeling from the common society that pharmaceutical companies give drug samples to entice prescriptions for their products in return. From the results 75.8 per cent of the respondents indicated that drug samples are genuinely meant for clinical trials while 24.2 per cent indicated that the samples are given out as a marketing gimmick to entice drug prescription. It is difficult to draw lines between the two opinions, however, morals and professional ethics should guide prescribers and marketers behaviors towards the purpose of drug sample.

From the pharmaceutical companies' view in Kenya, drug samples are used as tools to heighten competition by positioning the company as a rewarding business partner or as a tool to elicit prescription commitment from the medical practitioners.

The comparison of mean scores on factors that influence drug prescription in the two types of health facilities, indicate the effect of working environments on perceptions of factors influencing drug prescription behavior. Patients influence had the highest mean disparity of 0.46 between private facilities and in private facilities. This is as a result of the fact that patients seeking medical services in private facilities have a room to express their expectation, needs and wants because they pay doctors consultation fee, as compared to public facilities where doctors consultation is free of charge, and therefore the patients’ preferences are suppressed.
Price also had a high mean disparity of 0.45 between public facilities and private facilities, which confirms the relationship between purchasing capacity of patients and sensitivity to product prices. Patients who seek medical treatment in public facilities are low income earners and therefore, the environment is more price sensitive as compared to patients who seek medical care in private facilities who are financially better, therefore less sensitive to prices, and consequently makes private environment less sensitive to prices.

Drug availability had the third highest mean disparity of 0.35 between public facilities and private facilities. This is because of various reasons, the main one being the hospital formularies, that usually restrict the choices on drugs as compared to their counterparts in public who have no formularies, and therefore less restricted to prescribe the drugs of their choice.

Drug source had a mean disparity of 0.23 between the two health facilities. It was at higher in public facilities than in private for unknown reasons. Drug information and brand loyalties had equal disparities of 0.18 between the two facilities. Probably the higher mean of brand loyalty in private facilities could be because of company persistence in marketing or inertia in drug formularies.

Work experience, drug quality, opinion leader, drug safety and drug promotion had minimal disparity of 0.11, 0.09, 0.06, 0.04 and 0.04 respectively. This implies that the effect of these factors, though important, does not vary with the working environment. The insignificant disparity in quality and safety indicates their importance across the two types of facilities. It implies that considerations on drug quality and safety is crucial and are always important despite the working environments.
CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The objective of this chapter is to summarize the findings of the study, discuss various implications of the findings on the pharmaceutical industry, make recommendations on steps that pharmaceutical marketers need to take in order to improve their market share and make suggestions for further research.

5.2 SUMMARY OF THE FINDINGS

The main objective of the study was to explore the factors affecting the prescribing behavior of the General Practitioners (GPs), find the relative extent of influence by factor and find out how tools of communication used by pharmaceutical are perceived by GPs. The study indicated that the core product attributes, especially quality and safety, are the key attributes that drive drug prescription behavior in the Kenyan pharmaceutical market. However, other factors like price, brand loyalty, opinion leaders, drug availability, product information, promotion, Patients’ preference, source of drug and GPs’ working experience are also important but to different extents.

The extent of influence for each studied factor depended on importance of the factor in treatment, product category, working environments and personal opinions. Some factors like quality, safety and product information appear to be so influential that every
pharmaceutical company intending to promote their products to GPs must ensure that these factors are not questionable. Their importance was also emphasized by; first, the recommendations made by the respondents on their improvement; a fact implying a need and a room for better quality products for the Kenyan market, and secondly, by minimal standard deviations on mean responses on these factors, an observation that indicate that respondents agree to the importance of these factors harmoniously.

The findings on effect of price on drug prescription behavior is controversial because the respondents indicated it as less influential factor, yet it was one of the major factors recommended for improvement. This implies a hidden significance of price in the pharmaceutical market whereby the prescribers want a quality product but at a relatively low (competitive) price.

The study indicated that personal selling is an effective tool of marketing pharmaceutical products and it is the most reliable source of product information, while drug samples and treating GPs with gifts and holiday treats were recommended for purpose of promoting drug prescription.

5.3 CONCLUSIONS

The study infer that quality, safety, patients’ preference and drug availability, are the main features that influence drug prescription behavior of general practitioners in Kenya. They are the key driving factors in drug prescription behavior by General Practitioners, and therefore, important in promotion as well as in manufacturing of pharmaceutical products. Manufacturers of pharmaceutical products must always ensure that they come
up with products with the right attributes long before the company comes up with pricing and promotion strategies. This is because the product must bear the core values that medical practitioners look for first in a product.

Product information and promotion are also important factors that determine drug prescription behavior in the Kenyan market. Price is not a key factor in influencing prescription behavior though in practice, it plays a crucial role in determining movement of drug especially in low income populations. Drug source is not a very influential factor in Kenya; respondents differed a lot on its influence on their prescription behavior implying uncertainty on its importance in prescription decision making.

The study confirmed that personal selling is the most reliable source of information and the most efficient way of promoting pharmaceutical products. This is because personal selling involves face to face communication thus there is immediate feedback communication. This makes personal selling more convincing and provides concrete solutions to practitioners needs. In return, other aspects like business relationship, social validation, friendship, consistency, authority, reciprocity and scarcity develop. This leads to conclusion that: as the whole aspect of marketing is drifting towards relationship marketing, pharmaceutical market is moving the same direction.

The use of internet technology is poorly embraced by both practitioners and pharmaceutical firms in Kenya yet it is the driving force for the future business communications. Review on past studies on leading world pharmaceutical industries where internet is well developed, have shown that much of their promotion efforts are carried out via the internet. It is with this relationship of internet development and its
usage, which the study can conclude that; the fiber optics cable, digital terrestrial internet development and relatively literate Kenyan population, will impact positively on Kenyan pharmaceutical industry marketing.

Important differences in performance and price between the innovator products and generics in the Kenyan market appear to increase over the years, increasing the preference for original products despite the significant differences in prices; because prescribers are more quality sensitive than they are on price.

Demographic changes like more informed population have led to increased patient’s influence on GPs prescription behavior. On the other hand, hard economic times have led to demand of cheaper drugs coupled with less affordability. General practitioners regularly have to deal with inappropriate requests for specific medications by patients who have got certain drug experiences. Some may be concerned with appearing poorly informed about the medications yet they insist on certain treatments. Medical practitioners, as well as consumers, clearly need better information systems to support improved decision making.

Consumer groups argue that education materials on drugs should help establish informed choice for patients instead of simply providing brand loyalty. The resistance of doctors may be interpreted in the light of the growing rift in physicians’ influence and authority in the healthcare system.

Substantial new marketing challenges facing healthcare sector suggest that significant solutions are possible when healthcare problems are viewed from both consumer and organizational perspectives as “integrated health delivery systems.” The effects of
marketing on these “systems” need to be reconsidered, especially as public and private institutions find their economic cost growths increasingly unsustainable. Healthcare systems involve difficult spending choices in the use of public and private health resources, and a new outlook is needed to support better health outcome decisions. Important marketing problems can not be solved simply by altering the marketing mix of a particular products and services. The issues are more complex than these traditional marketing concerns. Clearly, the domain of marketing can greatly assist with the diffusion of information on treatment efficacy and quality that are necessary to improve healthcare solutions. The salient marketing issues to improving healthcare system need to be framed within the context of improving the flow of relevant information to consumers and key service providers.

5.4 RECOMMENDATIONS

The study recommends that pharmaceutical marketers be more vigilant to the dynamic market, change according to the market needs and embrace feed back opinions from the drug prescribers. The researcher recommends enhancement of use of personal selling and drug sampling as leading tools in the pharmaceutical marketing. Pharmaceutical companies should improve their competitive edge by improving existing product information source and change to current information technology like; usage of electronic devices, rather than the old hardcopy literatures, should be adopted as communication tools since they are effective in conveying reliable information to the medical practitioners.
Some considerations should be directed to the internet technology as an attractive and more efficient alternative channel for presenting information on the firms' products to the customers and also gathering customers' feedback on the same. More so, the internet providers should portray internet as a source of serious and important information as opposed to the current view that internet is a social quarter. The firms should take more active role in sponsoring continuous medical education programs so as to establish closer working links with key stakeholders in the industry. The success of promotion tools and strategies adopted should be measured to determine their level of effectiveness. The study recommends more frequent and sophisticated methods to measures patients' satisfaction and sales performance as ways of determining success of marketing strategies adopted.

5.5 SUGGESTION FOR FURTHER RESEARCH

The study mainly focused on general practitioners drug prescription behavior, leaving other categories of medical practitioners which also have great potential for further researcher. The researcher limited the study to Nairobi city thus further research on other regions of the country can be carried out to establish whether the findings are consistent. Generally, the study considered all prescription only medicines as one category of products, with an assumption that all prescription medicine categories are taken with equal importance, leaving out the fact that certain drug categories are taken more
cautiously than others and the differences on factors that determine their differences can
be taken as basis of another research study.

In conclusion, it is important to recognize that this study is based upon "what" GPs
actually do, it does not address the questions surrounding "why" GPs behave as they do.
This is an area ripe for further research and one which is likely to prove more tractable if
it incorporates some of the behavioral patterns observed and described in this study.
REFERENCES


Archive for the ‘prescription drugs’ category (2009): FDA statement on the voluntary withdrawal of Raptiva from the USA market.


APPENDIX I

INTRODUCTORY LETTER

Dear respondent,

REF: A SURVEY ON DRUG PRESCRIPTION BEHAVIOR BY GENERAL PRACTITIONERS IN NAIROBI, KENYA.

The attached questionnaire has been designed to collect the necessary data for a Master of Business administration (MBA) research project on “A survey on drug prescription behavior by general practitioners in Nairobi Kenya.” which is a requirement for my degree course.

From the given position of several pharmaceutical companies’ promotion activities, I have identified you as one of the key players in drug prescription. I therefore, request you to facilitate the collection of data by answering the questions in this questionnaire as precisely, honestly and factually as possible.

The information sought is purely for academic purposes and thus I assure you strict confidentiality. Your acceptance and kind response will be highly appreciated.

Yours faithfully,

Joseph Mwai.
APPENDIX II

QUESTIONNAIRE

1. Please indicate your gender.
   - Male □
   - Female □

2. The following are ranges of ages in years; please tick appropriately where your age falls.
   - 25-35 □
   - 36-45 □
   - 46-55 □
   - Over 56 □

3. For how long have you worked in the medical field?
   □ Years

4. What type of healthcare facility do you work for? In case you work in both, tick where you spend a lot of time.
   (a) Public institution □
   (b) Private institution □

5. How many drug prescriptions in average do you write in a month?
   □
6. The following are pharmaceutical product attributes that influence drug prescription behavior. Rate them on their importance by ticking in the appropriately space using the provided key of 1-5.

**Key**

1. Extremely important
2. Most important
3. Important
4. Fairly important
5. Least important

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<td>Others (specify)</td>
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7. The following factors influence drug prescription behavior to different extents. To what extent does each factor affect your choice on the drug you prescribe? The
extent of influence has been scaled as below. Tick appropriately.

1. Extremely influence
2. Highly influence
3. Moderately influence
4. Slightly influence
5. Rarely influence

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8. Of the factors above, list 3 key factors you would recommend Kenyan pharmaceutical marketers to prioritize and improve on, in order to win medical practitioners’ confidence in prescribing a drug?

1. .................................................................
2. .................................................................
3. .................................................................

9. After you prescribe drugs to patients, where do you refer them to obtain drugs?

(a) Institutional pharmacy                     

(b) To independently owned pharmacy

10. Pharmaceutical companies in Kenya promote drugs by providing drug information through various means. Using the key below, rate the reliability of the following information sources?

1. Extremely reliable
2. Highly reliable
3. Moderately reliable
4. Slightly reliable
5. Rarely reliable

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<td>Continuous Medical Educations (CMES)</td>
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<td>Any other tool if any</td>
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11. Do you think pampering medical practitioners with gifts and holiday treats in exchange of drug prescriptions is justifiable?

   Yes □
   No □

12. How do you perceive the drug samples given out by pharmaceutical companies?

   a) As genuine for clinical trials □
   b) As a marketing gimmick to entice drug prescription □

13. Do you have a preference for 'original' brands over generic products?

   Yes □
   No □

14. Does the institution you work for have any kind of drug prescription regulation that affect your drug prescription behavior?

   Yes □
   No □