ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

ATTITUDE OF PHARMACISTS IN GOVERNMENT HOSPITALS TOWARDS GENERIC MEDICATIONS IN ADDIS ABABA, ETHIOPIA

BY

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A THESIS SUBMITTED TO THE DEPARTMENT OF MARKETING MANAGEMENT, SCHOOL OF COMMERCE, ADDIS ABABA UNIVERSITY POST GRADUATE STUDIES FOR THE PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE DEGREE OF MASTERS OF ARTS IN MARKETING MANAGEMENT.

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DECLARATION

I, the undersigned, declare that this study entitled 'Attitude of Pharmacists in Government Hospitals Towards Generic Medications in Addis Ababa, Ethiopia' is my original work as it was not presented for the partial fulfillment of the master's degree in any university, and that all sources of materials used for the study have been duly acknowledged.

Name: Fayera Tasso

Signature _____

Date_____

CERTIFICATE

This is to certify that the thesis prepared by **Fayera Tasso** entitled: 'Attitude of Pharmacists in Government Hospitals Towards Generic Medications in Addis Ababa, Ethiopia' and submitted in partial fulfillment of the requirements for the Degree of Masters of Arts in Marketing Management, compiles with the regulations of the university and meets the accepted standards originality and quality.

Signed by the Examining Committee:

Examiner

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Examiner

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Advisor

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ACRONYMS

WHO: World Health Organization

FMHACA: Food, Medicine and Healthcare Administration and Control Authority

IFPMA: International Federation of Pharmaceutical Manufacturers & Associations

GS: Generic Substitution

GMP-Good Manufacturing Practice

FDA-US Food and Drug Administration

MOPH-Ministry of Public Health

ABSTRACT

The aim of this study was to assess attitude of pharmacists towards generic medications. The study was conducted in all government hospitals pharmacies in Addis Ababa city, from April 30, 2019-May 30, 2019. Mixed (quantitative and qualitative) research approach was used; the data collection tools were self-administered questionnaire and interviews. The frequency and percentage were used for demographic data presentation. The results were analyzed using Cronbach Alpha coefficients to measure reliability of the research instrument, t-test and one-way ANOVA to test the hypothesis and the variance between groups; and Spearman's rho to determine the correlation and relationship between two variables of interest. Regression was also used to test the relationship between attitude, subjective norms, perceived behavioral control and behavioral intention. According to this study the pharmacists' attitude (positive or negative) towards generics medicine does not depend on qualifications, years of experience and age. Regarding gender, the study found that there is a significant difference between male and female for the pharmacists' attitude (positive or negative) towards generics medicine. There was a weak positive correlation between attitude and subjective norms, which was statistically significant, r_s =0.217, p =0.005. And, there was a strong positive correlation between attitude and perceived behavioral control, which was statistically significant, r_s =0.524, p = 0.000. There is statistically a significant relationship between attitude and behavioral intention (positive correlation). The study concluded that attitude is one of the most important personal factors influencing both the organization and individual consumer buying behavior.

Key words: Generic medicine, attitude, pharmacists, innovator medicines, generic substitution, Theory of planned behavior, consumer behavior, Addis Ababa.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

A recently published report commissioned by the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) reveals how the pharmaceutical industry continues to boost the global economy across regions. As Global Pharmaceutical Industry report (2013), the pharmaceutical industry's share of global GDP value added increased by an average of 6% annually between 2006 and 2012, reaching $437 billion in 2012. The global pharmaceutical industry revenue is forecasted to reach an estimated $1,226.0 billion by 2018, with good growth over the next five years (2013-2018).

According to Ethiopian Investment commission report (2018) Ethiopia has second-largest population in Africa (>100M, ~8.5% of Africa's population); growth of 2.3% per year is expected; Increase in population size will result in an increase in the number of individuals requiring pharmaceutical products. In 2018, the Ethiopian pharmaceutical market was estimated to be valued at $684M. It is expected to grow at a CAGR of 15% to reach an estimated value of USD 0.9 billion by 2020. Government is increasing healthcare coverage to its large rural population, thus promoting the need for increased access to pharmaceutical products.

The Food, Medicine and Health Care Administration and Control Authority (FMHACA) authorizes the marketing (registration) of medicines in Ethiopia. A list of registered products is published on the FMHACA website. Imported products are charged a higher fee (US$ 700-800) than locally produced products (400 Birr which is approx. US$22). Manufacturers are licensed; overseas manufacturers are inspected every five years against FMHACA GMP guidelines whereas local companies are inspected twice yearly. Importers, wholesalers/distributors, prescribers and pharmacies are also licensed (WHO, 2016).

A generic drug is defined as "a pharmaceutical product which has the same characteristics as the reference medicinal product (innovators product) regarding the quality and composition of the active ingredients and pharmaceutical form, and also whose bioequivalence with the reference product has been demonstrated by appropriate bioavailability studies (Hassali et al,2009).

Alghasham (2009) stated that A 'Generic' medicine is a pharmaceutical product and is a bioequivalent to a brand name drug in dosage form, safety, and strength, route of administration, quality, performance characteristics and intended use. Generic drugs are marketed after the patent exclusivity period for the brand name drug expires. The qualitative and quantitative equality of selected parameters between a generic drug and the reference brand name drug is tested in bioequivalence studies (European Parliament, 2014).

Simoens (2011) investigated that the launch of generic drugs on the market brings along, apart from savings, better availability of drugs to a wider range of patients in comparison with the brand name drugs. Ensuring access to medicines with assured quality, safety, and efficacy is considered a main component towards improved health outcomes (WHO, 2007). According to estimates from the World Health Organization (WHO), the percentage of population without adequate access to essential medicines is less than 1% in high-income countries, 24% in middle-income countries, and 39% in low income countries. This percentage rises to 50% in the poorest countries of Asia and Africa (Hogerzeil& Mirza, 2011; WHO, 2011; WHO, 2004).

Governments in both developed and developing countries have introduced generic drug substitution (GS) policies to decrease pharmaceutical expenditures and improve access to medicine (Hassali et al,2014) and Kaplan et al, 2012). Generic substitution allows pharmacists to dispense a generic drug containing the same active ingredient, form, dosage, and strength as the originator drug prescribed by the physician (Dylst et al, 2013). Hassali, et al (2014) also states that the laws governing generic substitutions vary from mandating pharmacists to substitute brand drugs with therapeutic equivalent generics unless prohibited by the prescriber (i.e., mandatory GS), to allowing pharmacists to perform generic substitution (i.e., permissive GS) and requiring patients' consent before generic substitution.

Generic substitution is mandatory in six European countries (Sweden, Germany, Norway, France, Finland, and Spain) and permissive in others (Portugal, Denmark, Italy, Poland, Czech Republic, Netherland, Hungary, Poland, and Latvia). In the USA, generic substitution is a common practice with pharmacists substituting up to 84% of brand drug prescriptions for which generic equivalents are available (Hassali et al, 2014).

According to Cumming et al (2010) and Tordoff et al (2008) escalating healthcare costs are a global concern, and pharmaceutical expenditures represent a considerable portion of these costs. They also argued that global Healthcare costs are rising, including pharmaceutical expenditures and expenditures on pharmaceutical is considered a significant factor that leads to rising health care costs in many countries, and cost- containment strategies for developed countries, such as New Zealand.

Patients buying behavior for the generic medicine is mostly encouraged by the socio-economic factors, while brand loyalty (including past experience) and also socio-economic factors drive innovator medicines. Brand loyalty is also high in chronic medicines than in acute medicines, and in old age than in young age. In a study by Quintal (2012, p.65), more than 70% of patients never asked neither their doctor nor pharmacist for generic substitution. Some 65% of patients accepted substitution because of the doctor's recommendation, while only 20% accepted substitution due to the pharmacist's recommendation. The correct understanding of the generics, doctor's discussions, patient expenses, experience have been identified as significant factors associated with the willingness to accept generic substitution. Babar et al (2011) evaluated the pharmacists' view, knowledge and perception regarding generic medicines. In this study most of the pharmacists acknowledged the economic benefit of the generics, with some concerns regarding quality, safety and effectiveness. The pharmacists also proposed doctors' involvement, patient's information and advertising of generics as factors which can improve substitution.

Chua (2010) explored the knowledge and perceptions of general practitioners towards the use of generics in Malaysia, where most of the doctors (85%) reported to be prescribing generics actively. The study identified the significant knowledge gap on the side of the doctors where only 4.6% identified the correct bioequivalence standard involved in registering the generics. Only 49.5% agreed that the generics are bioequivalent to the innovator medicines.

There is clearly a gap between the four main customers of the pharmaceutical market. According to the patients, the end users, the doctor's recommendation is very important for them to accept substitution, while the same doctors do not have faith and enough knowledge to make that recommendation. Pharmacists have the knowledge, are forced by legislation to recommend generics to the patients but patients do not accept their recommendation.

Positive attitude towards generic medicine use will lead to the generic substitution, an important behavior of interest. As mentioned in the previous sections, generic substitution is presently an opportunity to curb continuous rise in health care cost by reducing the pharmaceutical cost.

The attitude as predictor of behavior (generic substitution) will also inform the marketing strategies of both the generic and originators companies. Marketers in the generic companies would like to change a negative attitude to a positive attitude towards the generics, while the originator/innovator companies would like to capitalize on the negative attitude and drive brand loyalty. Other stakeholders like funders and government would also to change negative attitude to a positive one in order to drive the cost down.

The role of drug companies and their marketing activities cannot be ignored, where the originator companies invest in activities at the doctors/prescribers to plant a seed of doubt regarding the quality and efficacy of generic medicines. The generic companies on the other hand focus most of their activities at pharmacy level where pharmacists are encouraged to recommend and dispense their generic drugs.

There is an apparent lack of knowledge pertaining to the quality, safety, and efficacy of generic medicines among healthcare professionals. Currently, there are no national generic medicine prescribing and dispensing policies in Ethiopia, and the obligation of prescribing and dispensing brand-name or generic products lies with the general practitioner and the pharmacist, respectively. Pharmacists are key players in the chain of medication distribution because one of their core professional roles is to ensure the manufacture, supply, and distribution of safe, effective, and quality medicines. Pharmacists can assist patients with obtaining the most cost-effective medicines, and this is considered a pharmaceutical care intervention that improves the access to medicines, adherence to therapy and healthcare outcomes.

Understanding generic medicine practices and perceptions held regarding these issues is very important in establishing a sound generic medicine policy that will eventually lead to substantial savings in the government's health care expenditure and will improve access to essential medicines in this country [Cumming et al, 2010; Canadian Generic Pharmaceutical Association, 2010; Babar et al, 2011).

1.2 Statement of the Problem

WHO (2011) states that Ensuring access to medicines is complex; it requires governments, through their policies, to balance the availability of quality assured medicines, whilst ensuring that they are affordable, and at the same time meeting the priority health needs of the population. (Cameron et al,2009) and Huskamp et al, 2003) argued that one of the main barriers to access to medicine is their high costs.

According to Kaplan et al (2012) generic medicines provide opportunities for major savings in healthcare expenditure due to their low prices. Generic medicines are bioequivalent to their branded counterparts but are generally 20– 90% less expensive (King and Kanavos, 2002).

As WHO (2015) study the underuse of generics is considered as one of the leading causes of economic inefficiency in healthcare. On the other side Cameron et (2012) argued that it has been estimated that switching procurement from branded drugs to the lowest-priced generic equivalents in the private sector in 17 developing countries could result in an average of 60% cost savings.

Both in developed and developing countries, health insurance agencies, health authorities and governments have suffered from pharmaceutical expenditures that has risen rapidly especially in the last two decades (Dunne et al ,2014). According to Awaisu et al (2014) the practice of generic medicines prescribing, dispensing and substitution in developing countries has been controversial among healthcare professionals, particularly due to issues on quality, safety and efficacy.

These controversies are as a result of inter-country differences in policies and laws as well as individualized knowledge and attitudes of health professionals pertaining to generic medicines.

Since there is a very little information available regarding the ‘Assessment of attitude of pharmacists in government hospitals towards generic medications in Ethiopia’, so this study will certainly provide baseline information about attitude of pharmacists towards generic medications and also provide the basis for policymakers to develop a suitable policy and regulations in terms of generic drug substitutions in Ethiopian context.

1.3 Research Questions

1. 3.1 Main Research Question

- What is the attitude of pharmacists in government hospitals towards generic medications in Addis Ababa?

1.3.2 Sub Research Questions

The current study was looked into the following questions:

- What is the pharmacist's attitude towards the generic medicines?
- Is there a relationship between the attitude and the demographic characteristics?
- Is there a correlation between the attitude and subjective norms?
- Is there a correlation between attitude and perceived behavioral control?
- Will the observed attitude support the intention to substitution?
- Is there a relationship between subjective norms and behavioral intention?
- Is there a relationship between perceived behavioral control and behavioral intention?

1.4 Objectives of the study

1.4.1 General Objective

- To assess attitude of pharmacists in government hospitals towards generic medications in Addis Ababa, Ethiopia.

1.4.2 Specific Objective

The following were identified as the study's secondary objectives:

- Determination of the pharmacists' attitude towards generic medicines.
- To measure the relationship between the attitude and the demographic characteristics.
- To measure the correlation between the attitude and subjective norms.
- To determine the correlation between attitude and perceived behavioral control.
- To evaluate the reliability of attitude in predicting the intention.
- To measure the relationship between subjective norms and behavioral intention.
- To measure the relationship between perceived behavioral control and behavioral intention.

1.5 Definitions of Terms

1.5.1 Conceptual Definitions

Attitude- Is the degree to which an individual favors a particular behavior (Ajzen, 1991).

Subjective Norm-Refers to the perceived social pressure to perform or not to perform the behavior (Ajzen, 1991).

Perceived Behavioral Control-Is a user's perceptions of the availability of required resources and opportunities to perform a particular behavior (Ajzen, 1991).

Behavioral Intention-Is defined as a person's perceived likelihood or subjective probability that he or she will engage in a given behavior (Committee on Communication for Behavior Change in the 21st Century, 2002, p. 31).

Behavior- Controlled results of an organism's action (Marken ,1982, p. 650).

1.5.2 Operational Definitions (Glossary)

Generic medicine: An identical or bioequivalent medicine to a brand name medicine in dosage form, safety, strength, route of administration, quality, performance characteristics and intended use.

Generic substitution: Is when a pharmacist dispenses an interchangeable multisource medicine instead of the medicine prescribed by a medical practitioner, dentist, practitioner, nurse or other registered health professional.

Innovator/originator/Brand medicine: Are medicines that have been newly developed and subsequently patented by a pharmaceutical company.

Pharmacist-Is a person prepared to formulate, dispense and provide clinical information on drugs or medications to health professionals and patients.

Hospital Pharmacy- Hospital pharmacies are pharmacies usually found within the premises of a hospital.

1.6 Significance of the study

The study would help the stakeholders in health care to determine the pharmacists' attitude towards the generic medicines so as to put together strategies to change or drive the attitude for the desired behavior.

The government objective is to drive the medicine expenditure down by driving a generic substitution. A positive attitude towards generic medicines would lead to more substitution and reduced expenditure; while a negative attitude would inform strategies for behavior change. Further studies can be done to identify the knowledge gaps and the concerns with regard to the generic medicines, which could inform training modules for the pharmacists in order to address the concerns and closure of the knowledge gaps.

The pharmaceutical industry, especially the generic companies can use the information to identify their customers' needs and concerns in order to drive the usage of their products. As for the innovator companies marketing opportunities can be identified to drive the use on the original over the generics.

This study would have a significant input in changing the trend of using costly brand medications as long as they are as effective as generics. Moreover, this study would also be a baseline for other similar researchers to further investigate on it.

It would also have an impact on creating awareness for health professionals, policy makers and stakeholders to develop measures that can improve the attitude of health professionals towards generic medications, so that customers receive the affordable medications.

1.7 Scope/Delimitation of the Study

When conducting the study, the researcher was limited the scope only to assess attitude of pharmacists in government hospitals towards generic medications in Addis Ababa city as survey participants to this study; thus, the results might not applicable to other Ethiopian cities and also the findings would not be generalized to all pharmacists in Addis Ababa because this study exclude pharmacists practicing in private pharmacies.

A further limitation was the cross-sectional study design which reflects only one point in time and therefore might not capture changes in respondents' attitudes and practices over time. Even though there were other variables that might be considered this study was limited to socio-demographic characteristics, Subjective norms, Perceived behavioral control, attitude and behavioral intention. The other limitation of this study was that it was employed only self-administered questionnaires and Interview to collect the data and excludes other data collection tools. The data that was collected through self-administered questionnaires would be self-reported and might be subjected to bias. Lastly, the above delimitations of the Study are due to resource and time constraints.

1.8 Organization of the Paper

This thesis was arranged in different sections and each section covers some areas of research.

Chapter-1:-Introduction: - This chapter contain background of the study, statement of the problem, research questions, objectives of the study, definition of terms, significance of the study and delimitation/scope of the study.

Chapter-2: -Literature review: - This chapter present overview of the literature, theoretical review, empirical review, conceptual framework and research hypotheses.

Chapter-3: -Research Methodology: -Illustrates the background of the research approach, research design, sampling design, source of data, data collection method, data collection instrument, data analysis method, validity, reliability and research ethics.

Chap-4: -Results and Discussion/Data presentation, analysis & interpretation/: - This chapter deal with the results/findings of the study and interpretation and/or discussion the findings.

Chap-5: -Summary, Conclusion and Recommendation: -This chapter comprises summary of findings, conclusions, limitations of the study and recommendations.

CHAPTER TWO: LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Introduction

Pharmacists as experts in medicines play a very important role in delivery of health care. They are expected to be the most trusted and accessible source of medications and unbiased information regarding the safe, appropriate, and cost-effective use of medications (Albanese & Rouse, 2010). Pharmacists' buying behavior is of great importance to the pharmaceutical marketers for both generic and innovator companies. In studying the pharmacist's buying behavior one needs not to ignore the factors influencing business/organizational buying behavior like environmental, organizational, interpersonal and personal (Kotler & Armstrong, 2012).

Most researchers agree that an attitude has three components: affect, behavior, and cognition. Affect refers to the way a consumer feels, behavior involves the person's intentions to act and cognition refers to the beliefs a consumer has about an attitude object. A consumer has high involvement with a product category plus a high perception level of product differentiation between alternatives will most likely follow the cognitive hierarchy of beliefs-affect-behavior. From the marketer's perspective the sequence of attitude formation is pertinent from a communications point of view. Accordingly, here, a marketer will first attempt to create Attention, then Interest and Desire, and finally Action (AIDA) (Brose khan and Velayutham, 2013).

2.1.2What are originator or innovator or branded Medicines?

Originator or branded medicines are medicines that have been newly developed and subsequently patented by a pharmaceutical company. The process of bringing a newly patented medicine to the market requires a considerable research and development investment in terms of time and money. Vast sums are put into research to identify new medicines and once these medicines are developed, they are put through multiple phases of clinical trials to ensure that they are effective and safe for human use. The company then launches the new medicine as a novel brand and enjoy the monopoly of the sales of the medicine safeguarded by patent protection, which lasts for a number of years (Van der Merwe et al, 2013).

2.1.3What are generic medicines?

Generic medicine refers to an identical or bioequivalent medicine to a brand name medicine in dosage form, safety, strength, route of administration, quality, performance characteristics and intended use. Although generic drugs are chemically identical to their branded counterparts, they are typically sold at substantial discounts from the branded price. New drugs, like other new products, are developed under patent protection. The patent protects the investment in the drug's development by giving the company the sole right to sell the drug while the patent is in effect (FDA, 2014).

2.1.4The role of pharmacists

Pharmacists have the authority and autonomy to manage medication therapy and are accountable for patients' therapeutic outcomes. Pharmacists are therefore obliged to communicate and collaborate with patients, care givers and other healthcare professionals regarding rational use of medications, including the measurement and assurance of medication therapy outcomes (Albanese, & Rouse, 2010, p.37). Pharmacists as experts in medicine are also expected to be the most trusted and accessible source of medications and unbiased information regarding the safe, appropriate, and cost-effective use of medications (Albanese, &Rouse, 2010, p.38).

2.1.5 Factors Affecting Generic Medicines Use

2.1.5.1 Innovator drug companies

Some innovator companies introduce pseudo-generics before the loss of patent. These are not copies of the original drug but rather the exact replica of the original, manufactured by the same company, using the same ingredients in the same way as the original. Pseudo-generics are introduced to pre-empt competition from independent generic companies and are made and marketed by another division of the same company or are distributed by another company under license (Lexchin, 2004).

Pharmaceutical marketing is very competitive and uses mostly evidence based medicine to communicate features and benefits. The efficacy and safety data of the products are obtained through the clinical trials which were done by the originator companies. The National Association of Pharmaceutical Manufacturers (NAPM, 2014), in his presentation highlighted that one of the strategies adopted by the innovator companies is the fear factor. This was further illustrated with an example where medical representative would merely say to the doctor "if your child was suffering from a life threatening disease like meningitis, would you gamble on the generic drug to treat him". In a case like that a doctor would be encouraged to write No Substitution on the prescription to stop the pharmacist from substituting.

Most of the doctors who had negative perceptions about generics also stated that they learn about generic availability from pharmaceutical manufacturer representatives raises important questions and suggests that new approaches to physician education that are likely to be less biased and more objective may enhance cost-effective medication use (Shrank et al, 2011, p.31-38).

Chua et al. (2010) also reported doctors' dependency on the representatives for the information about the medicines. Since in the survey doctors reported the need for more information on the issues pertaining to the safety and efficacy of generic medicines which is vital for confidence in generic medicines; the kind of information they would get will depend on the kind of representative the doctor will ask.

2.1.5.2 Patients

Patients' perceptions on the generic medicines are very important in determining the acceptance and use. As stated in the Medicines and Related Substances Control Act, no 101 of 1965 as amended by the Act 90 of 1997 that the pharmacists should inform the patient about the cheaper alternative and may substitute the branded drug with a cheaper generic if a patient allows it. Patients in the cities (high socioeconomic status) perceived generics as cheaper imitations with less efficacy therefore rejects substitutions, while patients in the outlying areas (lower socioeconomic status) preferred generics because of the lower price (Chong et al, 2010).

2.1.5.3 Pharmacists

In most of the literature pharmacists were comfortable with the use of generics, especially in countries like South Africa where generic substitution is mandatory by legislation. Challenges highlighted by pharmacists were patient consent and supply reliability by generic companies. Other reported concerns were about reduction in efficacy of treatment resulting from the substitution of specific medicines such as Dry Powder Inhalers and concerns about potential confusion by the elderly from differing brands (Chong et al. 2010, p.69).

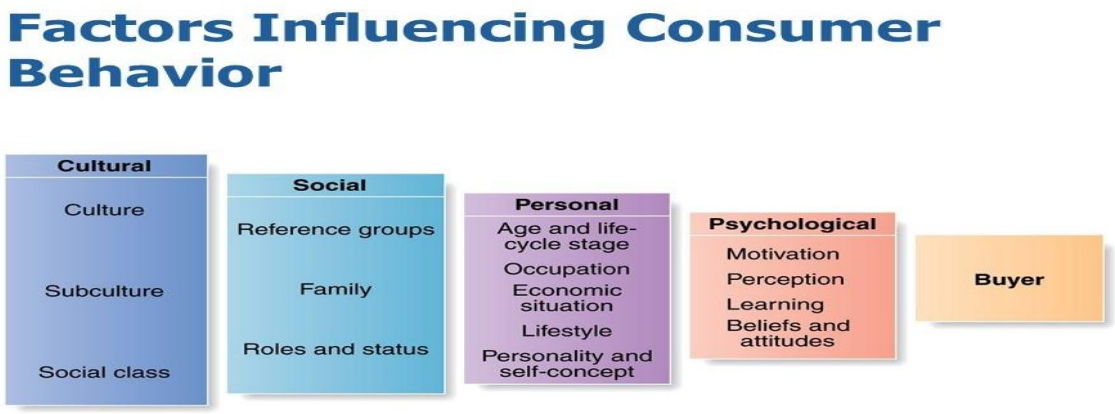
2.1.6 Consumer Buying Behavior

2.1.6.1 Consumer behavior overview

Consumer behavior has always been of great interest to marketers. The knowledge of consumer behavior helps the marketer to understand how consumers think, feel and select from alternatives like products, brands and the like and how the consumers are influenced by their environment, the reference groups, family, and salespersons and so on (Brosekhan & Velayutham,2013, p.11).

Consumer behavior can be defined as the actions individuals, groups, or organizations take in purchasing, selecting, securing and using products or services to satisfy needs (Kerin et al, 2007). The actions are affected by environmental factors the consumer is exposed to marketing stimuli (product, price, place and promotion) and other stimuli (economic, technological, social and cultural). In this information age, consumers are continuously exposed to marketing information about different products, it is therefore crucial to determine the impact of this information of decision-making (Kotler & Armstrong, 2012).

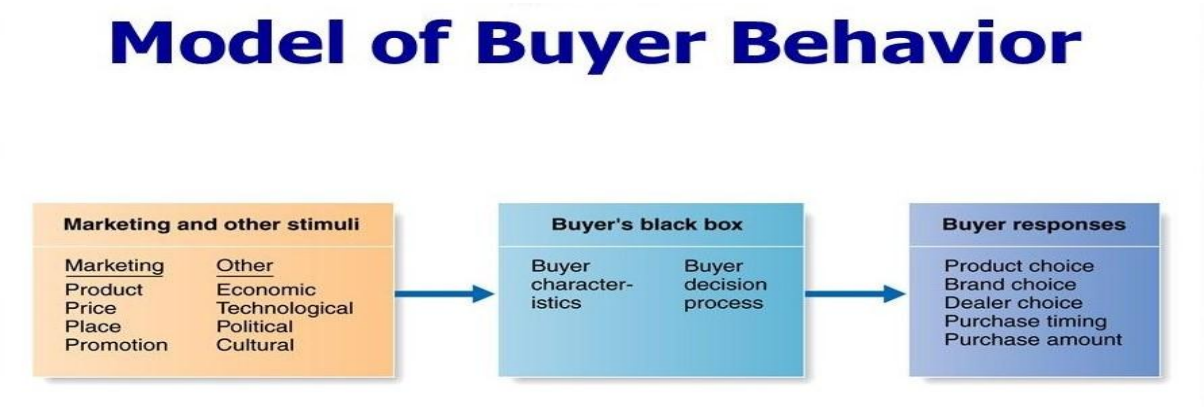
Figure 1: Buyer behavior model



Source: Adapted from Kotler & Armstrong (2012)

The buyer's black box, which includes the buyer characteristics and the actual buying process, is the main area of interest for the marketers. Marketers are more interested in how the stimuli enter the black box, how they are interpreted or perceived depending on the buyer's characteristics and the impact of that interpretation on the actual buying decision process. The buyer black box comprises buyer characteristics as well as buyer decision making process. The buyer characteristics which influence the buying behavior are generally classified in to cultural, social, personal and psychological. The buyer decision-making process comprises five stages which are need recognition, information search, evaluation of alternatives purchases decision and post purchase behavior.

Figure 2: Factors influencing consumer behavior



Source: AdaptedfromKotler,2012

2.1.6.2 Organizational consumer behavior

The Organizational consumer is a consumer who buys on behalf of an organization rather than buying for personal consumption. Generally, organizational customers are not considered end-users, but rather have been primarily seen as raw material or inventory purchasers (Ozmen et al, 2013, p.217-227).

Organizational buying behavior is a complex process involving many people, multiple goals and potentially conflicting decision criteria (Webster & Wind,1997, p.53) and is often supposed to be rational and less emotional. Unfortunately, the buyer and decision-makers are human beings who will not only be affected by factors affecting an organizational buying process but also those affecting an individual consumer (Blythe, 2013).

Members of the buying centers are motivated by a complex interaction of individual and organizational goals, where some organizations influence the buying center through the subsystems of tasks, structures like, authority, status, rewards and work flow; technology and people (Webster & Wind, 1997, p.56).

Figure 3: Factors influencing the organizational buying behavior

Source: Kotler & Armstrong (2012).

2.1.7 Applicable Theory

2.1.7.1 Overview of theory

Most of the public health interventions often seek in some way to change individual and population knowledge, attitudes and behaviors related to health practices. Psychologists first began to study the determinants of health related behaviors in the nineteenth and early twentieth centuries. Principal areas of investigation included the processes of social learning and the relationship between knowledge, attitudes and behaviors. Although at that time there was a frequently made assumption that much human behavior is innate or driven by unconscious forces, many authorities active in the health arena appeared to assume that peoples' health behaviors are normally consistent with their observed attitudes (Taylor et al ,2006).

Most health behavior and health promotion theories were adapted from the social and behavioral sciences, but applying them to health issues often requires that one be familiar with epidemiology and the biological sciences. Health behavior and health promotion theories draw upon various disciplines, such as psychology, sociology, anthropology, consumer behavior, and marketing (U.S. Department of health and human services: National Institutes of Health, 2005). A theory presents a systematic way of understanding events or situations. It is a set of concepts, definitions, and propositions that explain or predict these events or situations by illustrating the relationships between variables.

Most of the models were developed with the aim of understanding individual and community behavior with the ultimate goal of changing the behavior to a desired behavior. The current study seeks to determine the attitude towards generics by pharmacists in order to change behavior to a pro-generic one which will see pharmacists encouraging and educating the patients to use generic medicines in order to reduce cost. The individual level is the most basic one in health promotion practice, so individuals are often the primary target audience for health education materials. Because individual behavior is the fundamental unit of group behavior, individual-level behavior change theories often comprise broader-level models of group, organizational, community, and national behavior. Individuals participate in groups, manage organizations, elect and appoint leaders, and legislated policy.

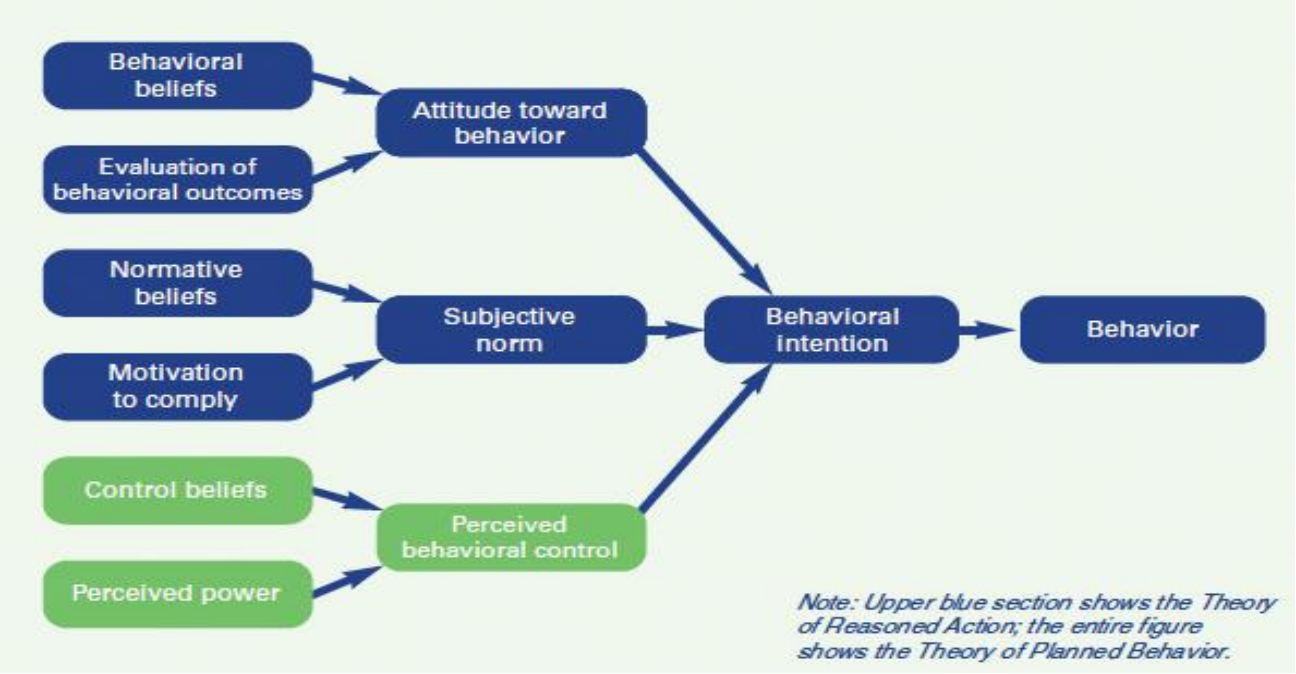
Thus, achieving policy and institutional change requires influencing individuals (U.S. Department of health and human services: National Institutes of Health, 2005).

2.1.7.2 Theory Planned Behavior (TPB)

The Theory Planned Behavior (TPB) has been used in the investigation of a broad range of health-related behaviors like diet, physical activity, condom use and more; the theory is based on the assumption that intentions toward a behavior are influenced by three proximal constructs: attitudes toward the behavior (positive or negative outcomes of the behavior), subjective norms (perceived social pressure to engage or disengage in the behavior) and perceived behavioral control (perceived ability to perform the behavior) (Lino et al, 2014,p.401).

TPB differs from the TRA in that it includes one additional construct (Fig 2.9); perceived behavioral control; this construct has to do with people's beliefs that they can control a particular behavior (Taylor et.al, 2006). The theory was designed as an extension of the TRA, an attempt to address the challenge of control experienced with TRA by including the concept behavioral control. The theory acknowledges the challenges of accurately predicting the behavior if the respondent does not have total control (Ajzen &Madden, 1986, p. 449). A pharmacist may have all the intentions and the will to switch the patient to a cheaper generic medicine, but if the doctor has given instructions to give the originator or even the patient insist on using the originator, the pharmacist will not substitute the medicine.

Figure 4: Theory of Planned Behavior (TPB)



Source: Adapted from Ajzen & madden (1986, p.452).

In order to address the control challenges and also overcome the complexity of its assessments, in the Theory of Planned Behavior a perceived behavioral control, the person's belief on the ease or difficulty to perform the behavior. According to the theory, among the beliefs that ultimately determine intention and action is a set that deals with the presence or absence of requisite resources and opportunities.

The more resources and opportunities individuals think they possess, and the fewer obstacles or impediments they anticipate, the greater should be their perceived control over the behavior. The control beliefs can therefore be treated as partly independent determinants of behavior and beliefs about resources and opportunities may be viewed as underlying perceived behavioral control. These beliefs about behavioral control may be based in part on past experience with the behavior, but they would usually also be influenced by second-hand information about the behavior, by the experiences of acquaintances and friends, and by other factors that increase or reduce the perceived difficulty of performing the behavior in question (Ajzen & Madden,1986, p.448).

The perception of control, like attitude toward the behavior and subjective norm, has an important impact on a person's behavioral motivation. The more that attainment of a behavioral goal is viewed as being under volitional control, the stronger is the person's intention to try.

2.1.8 Relationship between Attitude and Behavior

Previous studies have demonstrated a poor correlation between attitude and behavior, which were ranging between zero and 0.3. A close relationship between attitude and behavior has been observed when an assessment was based on the attitude toward the behavior rather than the attitude toward the target; ensuring a close match between the judgment measure and the behavioral measure and specifying the behavioral context when asking for the judgment; and using multiple behavioral criteria rather than a single criterion (Schwarz, 2007).

The theory of reasoned action (TRA) does not claim that attitudes influence behavior, but they influence behavioral intentions which in turn shape our actions. The strength of a behavioral intention can predict the performance of the act itself (Wolters, 2013). In this study, the stronger the intention to substitute a branded medicine for a generic medicine can be a reliable predictor of the actual substitution. Beside attitude several other factors such as social norms, knowledge, economic conditions and more can influence intention (Wolters, 2013)

2.2 Empirical Review

The use of generic medication is influenced by the attitude of pharmacists towards generic medication. Although largely studied in the developed and high income countries, this topic has not been well studied in resource-poor settings, where the attitude of pharmacists still can influence the use of generic drugs.

According to study done in South Africa on evaluating pharmacists' attitudes towards generic medicines, there was no significant difference in almost all the demographic characteristics gender, age, qualifications, employment level, years of experience and type of pharmacy one practices. The study concluded that attitude is one of the most important personal factors influencing both the organization and individual consumer buying behavior. Evaluating individuals' attitude to the behavior (use of a product or service) would help marketers to communicate the right message to the right customers (Sekwati, 2015).

Study done in Texas- USA on generic Prescription drugs: Awareness, attitude and intentions of elderly consumer said very few studies explore the influence of gender on attitudes towards generic medication. One study identified focused on gender (Yelkur & Capella, 2004), where a greater awareness of generic medication was found among female consumers. They also reported that women claim generics offer greater value.

According to study done in Mekelle on assessment of knowledge, attitude and practice of pharmacy professionals toward generic medicines, from the respondents 34.4% has believed medicines are less effective compared to brand name medicines. However, 40.2% couldn't believe in the idea of brand name medicines are of higher quality compared to generic drugs. From the participants 68.8% of them believed that patients should be given enough explanations about the reasons for choosing generic medicines. Pharmacy professionals with experience of from 2 to 5 years (AOR=25.620 [1.954-335.896]) and those with more than 5 years (AOR=106.543 [2.375-4779.542) were more likely to have positive attitude toward generic medicines compared to those with work experience of up to 2 years. Nearly half of the participants (48.3%) declared that lack of belief in generic medicines as important factor that hinder dispensing of generic medicine. From the participants 73.6% and 70.9% of them revealed that affordability to the customer and consumer preference as factor to reduce selection and dispensing of generic medicine.

From this study 55.9% (agree=17%, strongly agree 38.9%) of the participant claimed locally manufactured generics are equal in their quality compared to the imported generics and 60.2% believed they are equal in their safety and efficacy. From respondents 62.4%claimed locally manufactured generics are cheaper compared to imported generics. According to this study 65.5% of respondents thought Cost effectiveness of generic medicines are important (Yard B et al,2017).

As study done in New Zealand on Evaluating pharmacists' views, knowledge, and perception regarding generic medicines said Less than half the participants reason that generics have the same efficacy as the original product, a perception based on the client feedback pharmacists receive Some pharmacists do not have an accurate understanding of generic medication and are concerned with the quality, safety, and effectiveness of these medications. The economic benefit of using generic medication is, however, acknowledged (Babar et al., 2010).

According to study done in South Africa on consumers' attitudes towards generic medications, more than half (54.8%) prefer original medication, a large percentage (88.9%) believe there is a place for generic medication and that generic medication is effective. The majority (95%) indicated they would purchase generic medication if it is just as effective as the original. It was also emphasized that the quality of medication influences its effectiveness (Tolken ,2011).

Study done in Istanbul – Turkey on Knowledge and attitudes of the pharmacists, prescribers and patients towards generic drug use said that 31% and 32 % of the pharmacists and prescribers, respectively, expressed that they believed that the generics did not differ from the original drugs, whereas only 24% of the patients believed so. Forty percent of the pharmacists and 82% of the prescribers told that they were unsure about the bioequivalence of the generics. Ten percent of the patients claimed that they immediately accept generic substitution by the pharmacist, while 26% accepted it if it was substituted by the prescriber. Cost was the most important factor taken into consideration about generic substitution (92% for prescribers; 83% for patients and 82% for pharmacists). This study concluded that healthcare providers as well as the drug consumers have insufficient knowledge about generic drugs. Therefore, they should be better educated with respect to generic substitution (Toklu et al, 2012, pp.199-206).

As the study conducted in Saudi on Knowledge and perception of Community Pharmacists' towards generic medicines; Responses were obtained from 365 pharmacies (response rate, 81.1%). About 80.0% of the community pharmacists agreed that all products that are approved as generic equivalents can be considered therapeutically equivalent with the innovator medicines. More than 72.2% of respondents believed that a generic medicine must be in same dose form and dose as brand name medicine. Only 51.3% thought that generic medicines have more side effect than brand name medicines. Nearly, two- third (62.5%) trusted that brand name medicines are required to meet higher safety standards than generic medicines. This study summarized as the Saudi community pharmacists' have lack of information and/or trust in the generic medicines. An educational program among pharmacists and relevant government agencies should be implemented. Additionally, national generic medicine policies and guidelines are warranted in SA (Wajid et al,2015, pp. 800-806).

According to a mixed methods study on Pharmacists' views and reported practices in relation to a new generic drug substitution policy in Lebanon; Out of 204 invited community pharmacies, 153 pharmacies participated (75% response rate). The majority of respondents (64%) were in favor of generic drug substitution; however, less than half (40%) indicated they have substituted brand drugs for generic equivalents. Moreover, 57% indicated that the existing pricing system discourages them from performing generic drug substitution. Most respondents indicated that physicians are overusing the "non-substitutable" option (84%) and that there are technical problems with processing the new prescription form (78%). Less than half (47%) reported that the MOPH is performing regular audits on the forms collected by the pharmacy. While 45% of the respondents indicated that consumers have accepted most of the generic substitutions, 21% perceived the increase in generic drug dispensing to be significant. Findings suggested a potentially significant association between being informed about generic drugs and respondents' support of the policy.

Suggested strategies to address implementation challenges included strengthening stewardship function of MOPH, securing full commitment of health care providers, conducting educational and awareness campaigns about generic drugs and generic drug substitution, and aligning incentive systems of the key stakeholders. Finally, study concludes that the majority of community pharmacists were supportive of generic drug substitution in general but not of the current implementation of the policy in Lebanon. Findings revealed implementation challenges at the provider, patient, and system level which are hindering attainment of the policy objectives. The key lessons derived from this study can be used for continuous improvement of the policy and its implementation (El-Jardali et al,2017, p.23).

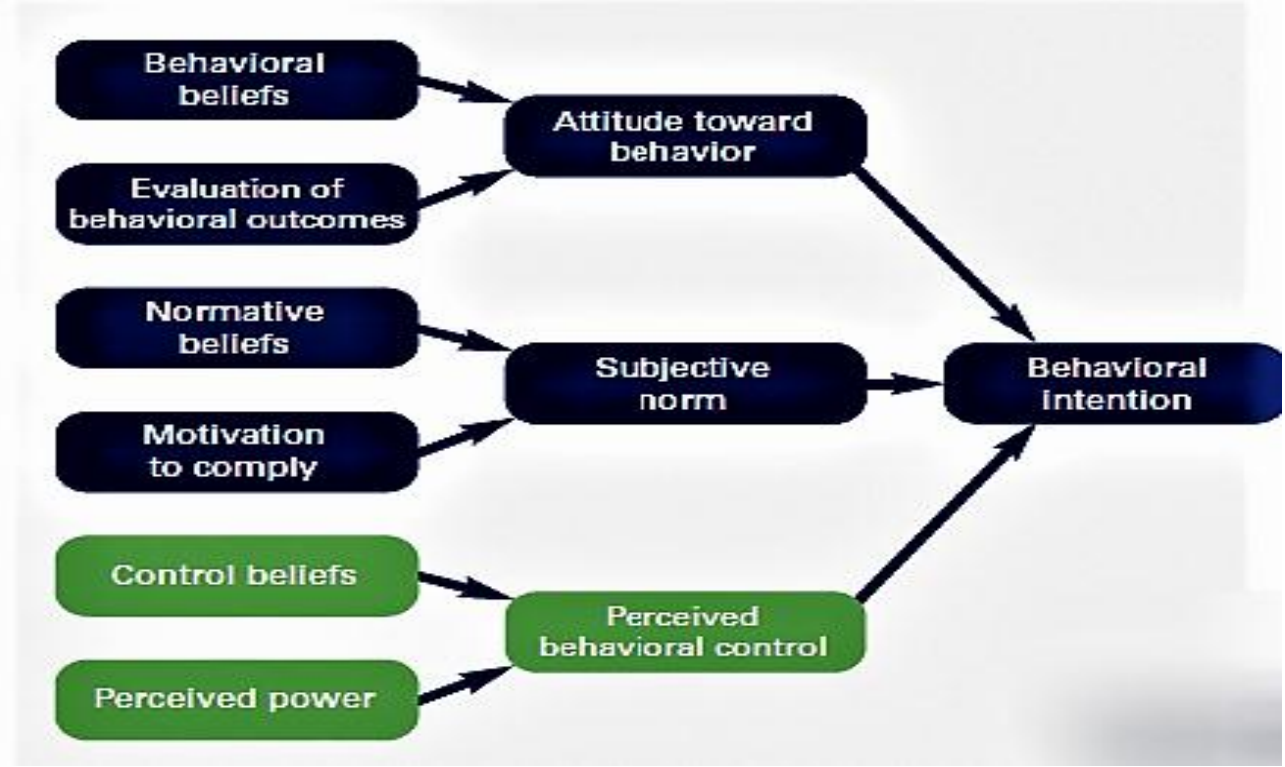
On the another hand as study conducted in Czech Republic; From 615 respondents, 345 (56.1%) respondents became aware of the issue of brand name and generic drugs during their undergraduate studies. 378 (61.5%) respondents considered generic drugs as bioequivalent and 455 (74.0%) respondents as therapeutically equivalent to the respective brand name drugs. 99 (16.1%) pharmacists believed that generic products are of lower quality than branded drugs and 69 (11.2%) respondents expected generics to cause more adverse drug reactions. GS was perceived as a positive tool by 476 (77.4%) respondents. The use of GS in the routine practice depends on the pharmacists' familiarity with the relevant legislation and attitude towards generic drugs and GS. Approaching patients on an individual basis and pharmacists' awareness can minimize adverse drug events caused by generic drugs and at the same time enhance the professional status of pharmacists (Maly et al, 2013, pp. 923-931).

Study on Knowledge and attitudes of physicians and pharmacists towards the use of generic medicines in Bosnia and Herzegovina states that generally, positive attitudes towards generic drugs were found. Majority of respondents, 392 (87.0%) considered generic drugs the same as originators and they could be mutually substituted. Physicians were more likely to prescribe branded drugs, 297 (66.6%), even 391 (86.8%) were aware of generic alternatives. Respondents believed that patients considered generic drugs less effective, 204 (45.4%), and 221 (49.0%) disapproved generic substitution. This study as conclusion suggested that further education and more information about benefits of generic drugs should be provided to key stakeholders including patients. Also, clearer generic drugs policies should be introduced in order to improve generic prescribing and potentially improve access and optimize pharmaceutical public expenditures (Čatić et al, 2017, pp.25-32).

2.3. Conceptual Framework

Theory of Planned Behavior (TPB) is the development of the Theory of Reasoned Act (TRA). Theory of Reasoned Act is developed by Martin Fishbein and Icek Azjen in 1967, the theory derived from previous research in social psychology, persuasion models, and attitude theories. The Theory of Reasoned Action (TRA) suggests that a person's behavior is determined by their intention to perform the behavior and that this intention is, in turn, a function of their attitude toward the behavior and subjective norms. In 1988, Martin Fishbein and Icek Azjen added a new factor that is perceived behavior control, and then called the Theory of Planned behavior. Theory of Planned Behavior theory of planned behavior has three factors; The first is the attitude toward the behavior (attitude toward behavior) is positive or negative evaluation of the individual's self-performance on certain behaviors. The second is subjective norm (subjective norms) that the individual perception of a particular behavior, which is influenced by the assessment of significant others (eg, parents, spouses, friends, teachers). The third one is a control behavior (perceived control behavior) is the individual's perception about the ease or difficulty to perform certain behaviors(Utami,2017).

Figure 5: Conceptual Framework



Source: Adapted from Ajzen & madden (1986:452)

2.4. Research Hypotheses

The following hypotheses will; be generated based on the Theory of Planned Behavior.

Hypothesis 1

- H_0 = there is no significant difference on attitude towards generic medicines among pharmacists' genders
- H_a ≠ there is a significant difference on attitude towards generic medicines among pharmacists' genders

Hypothesis 2

- H_0 = there is no significant difference on attitude towards generic medicines among pharmacists age groups
- H_a ≠ there is a significant difference on attitude towards generic medicines among pharmacists age groups

Hypothesis 3

- H_0 = there is no significant difference on attitude towards generic medicines between pharmacists of different work experiences
- H_a ≠ there is a significant difference on attitude towards generic medicines between pharmacists of different work experiences

Hypothesis 4

- H_0 = there is no significant difference on attitude towards generic medicines between pharmacists of different level of education
- H_a ≠ there is a significant difference on attitude towards generic medicines between pharmacists of different level of education

Hypothesis 5

- H_0 = there is no correlation between the attitude towards generic medicines and Subjective norms
- H_a ≠ there is a correlation between the attitude towards generic medicines and Subjective norms

Hypothesis 6

- H_0 = there is no correlation between the attitude towards generic medicines and Perceived behavioral control
- H_a ≠ there is a correlation between the attitude towards generic medicines and Perceived behavioral control
-

Hypothesis 7

- H_0 = there is no significant relationship between the attitude towards generic medicines and Behavioral intention
- $H_a \neq$ there is a significant relationship between the attitude towards generic medicines and Behavioral intention

Hypothesis 8

- H_0 = there is no significant relationship between Perceived behavioral control and Behavioral intention
- $H_a \neq$ there is a significant relationship between Perceived behavioral control and Behavioral intention

Hypothesis 9

- H_0 = there is no significant relationship between Subjective norms and Behavioral intention
- $H_a \neq$ there is a significant relationship between Subjective norms and Behavioral intention

CHAPTER THREE: METHODOLOGY OF THE STUDY

3.1 Introduction

Foundations of research are built and conducted over a structure called methodology (Remenyi et al,1998) and a valid study will always adapt encouraging research methodology (Buckley J et al,1976). Hence, it is decisively fundamental to deploy quintessential methodology with great care and systematic understanding of the intricacies involved (Amaratunga et al, 2002).

According to Kazdin (2002) methodology is the principles, procedures and practices that govern research process. "Methodology" should be thought of as encompassing the entire process of conducting research (i.e., planning and conducting the research study, drawing conclusions, and disseminating the findings).

Under this chapter, the research methodology carried out was discussed. Qualitative and quantitative data was used to elaborate how the research was carried out in term of research design, data collection method, sampling design, research instrument, constructs measurement, data processing and data analysis. The practice of the research was explained further in this chapter.

3.2 Research Approach

In order to achieve the objective of this study and answer the research questions, mixed research approach was adopted to assess the attitude of pharmacists working in government hospital towards generic drugs in Addis Ababa to converge across qualitative and quantitative methods (triangulating data sources). Employing this approach was used to neutralize or cancel the biases of applying any of a single approach and a means to offset the weaknesses inherent in a single method with the strengths of the other method (Creswell, 2003).

Mixed research approach opens door to multiple methods of data collection and helps to generate the findings to a population and develop a detailed view of the meaning of a phenomenon or concept for individuals (Creswell, 2003). This research approach poses the researcher to the challenges that need for extensive data collection, the time-intensive nature of analyzing both text and numeric data, and the requirement for the researcher to be familiar with both quantitative and qualitative forms of research (Creswell, 2003).

3.3 Research Design/Type

Since the research questions mainly focus on "what" questions; it is more likely to favor survey than others. Survey design provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population. Its purpose is to generalize from a sample to a population so that inferences can be made and it is also economical and rapid turnaround in data collection (Creswell, 2003); and this method is important for collecting large amounts of raw data using question and answer formats (Hair et al,2006). The main advantage of survey is its ability to accommodate large sample sizes at relatively low costs, ease of administration and ability to tap in to factors that are not directly observable (Hair J.F et al.,2006).

3.4 Sampling Design

3.4.1 Target Population

The population of the study was the pharmacists in government hospitals in Ethiopia. But the target populations of the survey were all pharmacists in government hospitals located in Addis Ababa City.

3.4.2 Sampling Frame

The sampling frame of this research were all pharmacists in government hospitals located in Addis Ababa City.

3.4.3 Sampling Technique

Systematic Random Sampling technique was used for respondent size determination.

3.4.4 Sampling Size

To calculate sample size Yamane's (1967:886) simplified formula was used. A 95% confidence level, P =0.5 and e=±5% were assumed.

$$n = \frac{N}{1+N(e)2}$$

Where n is the sample size, N is the population size, and "e" is the level of precision. The populations of the study included all pharmacists in government hospitals located in Addis Ababa City. There are 275 pharmacists in 14 government hospitals (Alert Hospital=20, Amanuel Hospital=20, B/Lion Hospital=60, Gandhi Hospital=10, R/Desta Hospital=20, Saint Paulos Hospital=30, AeBet Hospital=10, Defence Hospital=10, Tirunesh Beijing Hospital=10, Police Hospital=10, Zewuditu Hospital=15, Menelik Hospital=15, Yekatit 12 Hospital=20 and Saint Peter Hospital=25). Therefore, the total target population is 275. Using Yamane (1967:886) simplified formula proportion we can get a sample size of 163.

$$n= \frac{275}{1+275(0.05)2} = 163$$

The sample size of pharmacists was selected by using Systematic random sampling.

3.5 Source of Data

This study was used primary and secondary source of data that was collected through questionnaires& In-depth interview and other sources respectively.

3.6 Data Collection Methodology

Self-administrated questionnaires and interview was used as data collection method in this research. The researcher went personally to the targeted location on working days and distributed questionnaires to the respondents. And also interviewed pharmacy heads. The information gathered from the questionnaire consisted of quantitative data and from an interview consisted of qualitative data. Researcher was employed 7-point Likert scale ranging from 1-Strongly Agree, 2-Agree, 3-Slightly Agree,4-Neutral, 5- Disagree,6- Slightly Disagree and 7-Strongly Disagree. Besides, document reviews and internet was used to collect secondary data from any related materials. Therefore, the researcher preferred to distribute the self-administered questionnaires to 163 Pharmacists practicing in government hospital pharmacies located in Addis Ababa City and interviewed pharmacy heads; and finally collected the instruments.

3.7 Data collection Instrument

Data was collected using a structured, pre-tested, self-administered questionnaire and In-depth interview. The questionnaires consisted of two parts. The first part contained questions about the socio-demographic characteristics of the pharmacists (age, gender, experiences and level of education). The second part contained questions about subjective norms, perceived behavioral control and the attitude of pharmacists toward generic drugs. The investigators administered the questionnaires to respondents and was also responsible in collecting the filled questionnaires. The questionnaire was developed in English language and on average it took about 10 minutes to complete.

3.8 Data Analysis Method

To accomplish the task of data analysis for qualitative, the researcher was organized and prepared the data for analysis, assigned codes based on topic or themes, used the coding process to generate the description of the theme for the analysis. where as in quantitative the data capturing and analysis was done using the Statistical Package for Social Sciences (SPSS Inc.) version 25. The frequency and percentage were used for demographic data presentation. The results were analyzed using Cronbach Alpha coefficients to measure reliability of the research instrument, t-test and one-way ANOVA to test the hypothesis and the variance between groups; and Spearman's rho to determine the correlation and relationship between two variables of interest using the guide in table 1. Regression was used to test the relationship between attitude, subjective norms, perceived behavioral control and behavioral intention.

The interpretation of correlation co-efficient largely depends on the field of study. For example, as often used in social science, a large correlation is 0.5, medium is 0.3 and small is 0.1 (Cohen, 1988).

Table 1: Correlation value and strength of association

Coefficient Value	Strength of Association
$0.1 < \| r \| < .3$	small correlation
$0.3 < \| r \| < .5$	medium/moderate correlation
$\| r \| > .5$	large/strong correlation

3.9 Validity and Reliability

Reliability and validity are the essential criteria for assessing the accuracy and precision of the quantitative aspects of this research. They are also essential criteria for measuring the research quality and especially the procedures used to measure the constructs of interest.

3.9.1 Validity

Validity is concerned with the extent to which an instrument measures the right construct (i.e. the degree that reflects on real differences) among the respondents. Pilot test was conducted on 10 pharmacists (from study population but out of study's sample) working in government hospitals in Addis Ababa to test validity.

Creswell (2003) states that Validity can be divided into external Validity and internal Validity. External validity is the researcher's ability to draw correct inferences from the sample regarding other persons, other settings and past or future situations, i.e. the data's ability to be generalized to other persons, settings and times. Adopting a representative sample is a basic consideration for achieving external validity. It is difficult to generalize the findings unless the drawn sample is representative of the population. Internal validity is the researcher's ability to draw sound inferences from the data in an experiment (Creswell, 2003).

3.9.2 Reliability

Reliability is concerned with the ability of an instrument to measure consistently. The reliability of an instrument is closely associated with its validity, where an instrument cannot be valid unless it is reliable. Cronbach's alpha measures the internal consistency of a test or scale and it is expressed as a number between 0 and 1. Internal consistency describes the extent to which all the items in a test measure the same concept or construct and hence it is connected to the inter-relatedness of the items within the test. The value of alpha should be between 0.7 and 0.95 (Tavakol & Dennick, 2011:55).

3.10 Research Ethics

As this study required the involvement of persons (pharmacists); different ethical issues were addressed. The consideration of these ethical issues were necessary for the purpose of ensuring the privacy of participants as well as the confidentiality of respondents' data. In order to secure the consent of the selected participants, the researcher was clarified the purpose of the study and the role of participants in completion of the study. The researcher also was informed participants that their participation in the study was based on their willingness, and in the structured questionnaire, there is no questions that required personal information and the data from the returned questionnaire was assessed confidentially. The data wouldn't be disclosed to third party without permission from study participants. In the final result of the research paper personal information wasn't included, only the summary of relevant data that help in answering the research questions was incorporated.

CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

In this chapter, data obtained in this study was discussed in conjunction with methods of data analysis. As discussed in the previous chapter, several statistical methods were used. To summarize, frequencies were used to analyses demographic variables and respondents' belief about generic substitution. T-test and ANOVA test was used to test the relationship between demographic variables and attitude. Spearman's correlation was also used to test the correlation between attitude &subjective norms as well as between attitude and perceived behavioral control. Regression was used to test the relation between attitude, subjective norms, perceived behavioral control and behavioral intention

4.2 Research Findings

4.2.1 Descriptive data analysis

4.2.1.1 Demographic information

Of 163 questionnaires distributed, all of the participants returned the surveys, which make a response rate of 100%. Table 2 shows male respondents were more represented than the females, making 63.8% of the sample versus 36.2% males. Some 63.2% of the respondents were of 26-35 years, followed by the age group 36-45 years with 18.4% representation, then the <25 years and 46-55 years with 11.0% and 4.9% representations, respectively. More than 90% of the respondents were below the age of 46 years. The Older group of the above 55 years was the smallest groups with 2.5% representation.

Table 2 below also shows that most of the respondents had 1-5 years' experience 41.1%, followed by 6-10 years representing 34.4%, then more than 10 years and less than 1 year representing, 13.5% and 11.0%, respectively. More than half of the respondents have less than 5 years' experience, while the other has more than 5 years' experience. Regarding level of education most of the respondents (84%) had a bachelor degree while the other 16% of the respondents had a master's degree.

The basic demographic information of respondents is summarized in Tab 2.

Table 2: Demographic Information

Demographic Information		Frequency	Percentage(%)
Gender	Male	104	63.8
	Female	59	36.2
Age	<25	18	11.0
	26- 35	103	63.2
	36-45	30	18.4
	46- 55	8	4.9
	> 55	4	2.5
Experience	<1	18	11.0
	01-05	67	41.1
	06-10	56	34.4
	> 10	22	13.5
Education Level	Bachelor	137	84.0
	Masters	26	16.0

4.2.1.2 Respondents belief about generic substitution

Table 3: Respondents response about effectiveness of generic drugs

Substituting a branded medicine with a generic medicine means I am giving an equally effective drug to my patient.

		Frequency	Percent	Valid Percent	Cumulative %
Valid	Strongly Agree	63	38.2	38.7	38.7
	Agree	34	20.6	20.9	59.5
	Slightly agree	20	12.1	12.3	71.8
	Neutral	12	7.3	7.4	79.1
	Slightly disagree	8	4.8	4.9	84.0
	Disagree	6	3.6	3.7	87.7
	Strongly disagree	20	12.1	12.3	100.0
	Total	163	98.8	100.0	
Missing	System	2	1.2		
Total	165	100.0			

From the current study 70.9% of the respondents agree with the concept of substituting a branded medicine with a generic medicine means giving an equally effective drug their patient.

Table 4:Respondents response about quality of generic drugs

Substituting a branded medicine with a generic medicine means I am giving equally quality drug to my patient

		Frequency	Percent	Valid Percent	Cumulative %
Valid	Strongly Agree	61	37.0	37.4	37.4
	Agree	28	17.0	17.2	54.6
	Slightly agree	16	9.7	9.8	64.4
	Neutral	26	15.8	16.0	80.4
	Slightly disagree	10	6.1	6.1	86.5
	Disagree	4	2.4	2.5	89.0
	Strongly disagree	18	10.9	11.0	100.0
	Total	163	98.8	100.0	
Missing	System	2	1.2		
Total	165	100.0			

From this study 63.7% of the respondents agree with the concept of substituting a branded medicine with a generic medicine means giving equally quality drug to their patient

Table 5:Respondents response about cost effectiveness of generic drugs

Substituting a branded medicine with a generic medicine means I am getting a cost effective drug for my patient

		Frequency	Percent	Valid Percent	Cumulative %
Valid	Strongly Agree	61	37.0	37.4	37.4
	Agree	28	17.0	17.2	54.6
	Slightly agree	16	9.7	9.8	64.4
	Neutral	26	15.8	16.0	80.4
	Slightly disagree	10	6.1	6.1	86.5
	Disagree	4	2.4	2.5	89.0
	Strongly disagree	18	10.9	11.0	100.0
	Total	163	98.8	100.0	
Missing	System	2	1.2		
Total	165	100.0			

From this study 63.7% of the respondents agree with the concept substituting a branded medicine with a generic medicine means getting a cost effective drug for their patient.

Table 6:Respondents response about affordability of generic drugs

Substituting a branded medicine with a generic medicine means I am giving affordable drug to my patient

		Frequency	Percent	Valid Percent	Cumulative %
Valid	Strongly Agree	65	39.4	39.9	39.9
	Agree	30	18.2	18.4	58.3
	Slightly agree	16	9.7	9.8	68.1
	Neutral	16	9.7	9.8	77.9
	Slightly disagree	8	4.8	4.9	82.8
	Disagree	8	4.8	4.9	87.7
	Strongly disagree	20	12.1	12.3	100.0
	Total	163	98.8	100.0	
Missing	System	2	1.2		
Total	165	100.0			

From this study 67.3% of the respondents agree with the concept substituting a branded medicine with a generic medicine means giving affordable drug to their patient.

Table 7:Respondents response about safety of generic drugs

Substituting a branded medicine with a generic medicine means I am giving an equally safe product

		Frequency	Percent	Valid Percent	Cumulative %
Valid	Strongly Agree	73	44.2	44.8	44.8
	Agree	18	10.9	11.0	55.8
	Slightly agree	12	7.3	7.4	63.2
	Neutral	24	14.5	14.7	77.9
	Slightly disagree	12	7.3	7.4	85.3
	Disagree	6	3.6	3.7	89.0
	Strongly disagree	18	10.9	11.0	100.0
	Total	163	98.8	100.0	
Missing	System	2	1.2		
Total	165	100.0			

From this study 62.4% of the respondents agree with the concept substituting a branded medicine with a generic medicine means giving an equally safe product.

4.2.3Inferential data analysis

4.2.3.1 Reliability of research instrument

Reliability is concerned with the ability of an instrument to measure consistently. The reliability of an instrument is closely associated with its validity, where an instrument cannot be valid unless it is reliable. Cronbach's alpha measures the internal consistency of a test or scale and it is expressed as a number between 0 and 1. Internal consistency describes the extent to which all the items in a test measure the same concept or construct and hence it is connected to the inter-relatedness of the items within the test. The value of alpha should be between 0.7 and 0.95 (Tavakol & Dennick, 2011:55). As shown in Table 8, All of the constructs have proven an internal consistency or reliability with Cronbach's Alpha ranging from 0.710 to 0.884.

Table 8: Reliability Statistics

Constructs	Cronbach's alpha	Cronbach's alpha based on standardized items	No of items
Behavioral Belief	.755	.762	4
Evaluation of Behavior	.785	.787	5
Motivation to Comply	.884	.881	5
Normative Belief	.730	.817	6
Perceived Power	.840	.787	9
Control Belief	.710	.718	3
Behavioral Intention	.755	.762	4

4.2.3.2 ANOVA and T-test

T-test

A T-test, sometimes called the Student's T-test, is conducted when you want to compare the means of two groups and see whether they are different from each other. It is mainly used when a random assignment is given and there are only two, not more than two, sets to compare(Celine,2011).

Gender

Table 9:T-test gender

Group Statistics

	Gender of respondents	N	Mean	Std. Deviation	Std. Error Mean
Attitude	Male	104	2.7356	.84461	.08282
	Female	59	2.4784	.65175	.08485

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean d/nce	Std. Error d/nce	95% CI of the d/nce	
									Lower	Upper
Attitude	Equal vassumed	5.313	.022	2.021	161	.045	.25719	.12723	.00593	.50845
	Equal v not assumed			2.169	146.356	.032	.25719	.11857	.02286	.49152

This study found that male (2.7±.84) participants had statistically significantly higher score on attitude towards generic medication compared to females (2.5±.65), t (2.169) = 146.356, p = 0.032; Since p value is <.05 the null hypothesis could be rejected.

Education Level

Table 10:T-test education level

Group Statistics

	Education level of respondents	N	Mean	Std. Deviation	Std. Error Mean
Attitude	Bachelor	137	2.6600	.79379	.06782
	Masters	26	2.5500	.76538	.15010

Independent Samples Test

		Levene's Test for Equality of V		t-test for Equality of Means						
									95% CI of the d/nce	
		F	Sig.	t	df	Sig. (2-tailed)	Mean d/nce	Std. Error d/nce	Lower	Upper
Attitude	Equal v assumed	.320	.572	.652	161	.516	.11004	.16888	-.22346	.44353
	Equal v not assumed			.668	35.973	.508	.11004	.16471	-.22402	.44410

Based on the results of independent t-Test (p = .516> .05), we failed to reject the null hypothesis (Ho). Therefore, we concluded that there was no statistically significant relationship between education level of respondents and attitude towards generic medication**.**

ANOVA test

The ANOVA test is the popular term for the Analysis of Variance. It is a technique performed in analyzing categorical factors effects. This test is used whenever there are more than two groups. They are basically like T-tests too, but, as mentioned above, they are to be used when you have more than two groups. ANOVA tests use variances to know whether the means are equal or not. In one-Way ANOVA there is just one categorical factor(Celine,2011).

Age

Table 11:ANOVA Age

Descriptive

Attitude

	N	Mean	Std. Deviation	Std. Error	95% CI for Mean		Min	Max
					Lower Bound	Upper Bound		
Less than 25	18	2.6861	.78526	.18509	2.2956	3.0766	1.85	4.65
26-35	103	2.6755	.87541	.08626	2.5044	2.8466	1.38	5.30
36-45	30	2.4250	.35062	.06401	2.2941	2.5559	1.98	3.13
46-55	8	3.0875	.78751	.27843	2.4291	3.7459	2.03	4.10
Above 55	4	2.3375	.41858	.20929	1.6714	3.0036	1.98	2.70
Total	163	2.6425	.78804	.06172	2.5206	2.7644	1.38	5.30

ANOVA Attitude

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3.522	4	.880	1.433	.226
Within Groups	97.081	158	.614		
Total	100.603	162			

Multiple Comparisons

Dependent Variable: Attitude Tukey HSD

(I) Age of respondents	(J) Age of respondents	Mean Difference (I-J)	Std. Error	Sig.	95% CI	
					L/Bound	U/Bound
Less than 25	26-35	.01063	.20025	1.000	-.5420	.5632
	36-45	.26111	.23370	.797	-.3838	.9060
	46-55	-.40139	.33308	.748	-1.3205	.5177
	Above 55	.34861	.43329	.929	-.8471	1.5443
26-35	Less than 25	-.01063	.20025	1.000	-.5632	.5420
	36-45	.25049	.16262	.538	-.1983	.6993
	46-55	-.41201	.28770	.608	-1.2059	.3819
	Above 55	.33799	.39947	.916	-.7644	1.4403
36-45	Less than 25	-.26111	.23370	.797	-.9060	.3838
	26-35	-.25049	.16262	.538	-.6993	.1983
	46-55	-.66250	.31191	.215	-1.5232	.1982
	Above 55	.08750	.41724	1.000	-1.0639	1.2389
46-55	Less than 25	.40139	.33308	.748	-.5177	1.3205
	26-35	.41201	.28770	.608	-.3819	1.2059
	36-45	.66250	.31191	.215	-.1982	1.5232
	Above 55	.75000	.48001	.524	-.5746	2.0746
Above 55	Less than 25	-.34861	.43329	.929	-1.5443	.8471
	26-35	-.33799	.39947	.916	-1.4403	.7644
	36-45	-.08750	.41724	1.000	-1.2389	1.0639
	46-55	-.75000	.48001	.524	-2.0746	.5746

There was no a statistically significant difference between respondents by their age on attitude towards generic medication as determined by one-way ANOVA (F (4,158) = 1.433, p = .226), the null hypothesis could not be rejected.

Experience

Table 12:ANOVA Experience

Descriptive

Attitude

	N	Mean	Std. Deviation	Std. Error	95% CI for Mean		Min	Max
					Lower Bound	Upper Bound		
< 1 year	18	2.6861	.78526	.18509	2.2956	3.0766	1.85	4.65
1-5 year	67	2.7481	.78327	.09569	2.5571	2.9392	1.38	4.33
6-10	56	2.5295	.83805	.11199	2.3050	2.7539	1.40	5.30
> 10 year	22	2.5727	.66891	.14261	2.2762	2.8693	1.98	4.10
Total	163	2.6425	.78804	.06172	2.5206	2.7644	1.38	5.30

ANOVA

Attitude

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.604	3	.535	.859	.464
Within Groups	98.998	159	.623		
Total	100.603	162			

Multiple Comparisons

Dependent Variable: Attitude

Tukey HSD

(I) Experience of respondents	(J) Experience of respondents	Mean Difference (I-J)	Std. Error	Sig.	95% CI	
					L/ Bound	U/ Bound
< 1 year	1-5 year	-.06202	.20948	.991	-.6059	.4819
	6-10	.15665	.21380	.884	-.3985	.7117
	Above 10 year	.11338	.25078	.969	-.5378	.7645
1-5 year	Less than 1 year	.06202	.20948	.991	-.4819	.6059
	6-10	.21867	.14287	.422	-.1523	.5896
	Above 10 year	.17541	.19389	.802	-.3280	.6788
6-10	Less than 1 year	-.15665	.21380	.884	-.7117	.3985
	1-5 year	-.21867	.14287	.422	-.5896	.1523
	Above 10 year	-.04326	.19854	.996	-.5588	.4722
> 10 year	Less than 1 year	-.11338	.25078	.969	-.7645	.5378
	1-5 year	-.17541	.19389	.802	-.6788	.3280
	6-10	.04326	.19854	.996	-.4722	.5588

There was no a statistically significant difference between respondents by their experience on attitude towards generic medication as determined by one-way ANOVA (F (3,159) = .859, p = .464), the null hypothesis could not be rejected.

4.2.3.3 Spearman's rho Correlations

Spearman's rank correlation coefficient is a nonparametric (distribution-free) rank statistic proposed by Charles Spearman as a measure of the strength of an association between two variables (Hauke J. and kossowski T,2011).

The interpretation of correlation co-efficient largely depends on the field of study. For example, as often used in social science, a large correlation is 0.5, medium is 0.3 and small is 0.1 (Cohen, 1988).

Table 13:Spearman's Correlation coefficient

			Attitude	Perceived Behavioral control	Subjective Norms
Spearman's rho	Attitude	Correlation Coefficient	1.000	.524**	.217**
		Sig. (2-tailed)	.	.000	.005
		N	163	163	163
	Perceived Behavioral control	Correlation Coefficient	.524**	1.000	.562**
		Sig. (2-tailed)	.000	.	.000
		N	163	163	163
	Subjective Norms	Correlation Coefficient	.217**	.562**	1.000
		Sig. (2-tailed)	.005	.000	.
		N	163	163	163
**. Correlation is significant at the 0.01 level (2-tailed).					

A Spearman's correlation was run to assess the relationship between attitude and subjective norms as well as between attitude and perceived behavioral control using a sample of 163 participants. There was a weak positive correlation between attitude and subjective norms, which was statistically significant, r_s=0.217, p =0.005. And, there was a strong positive correlation between attitude and perceived behavioral control, which was statistically significant, r_s =0.524, p = 0.000.

4.2.3.4 Regression

Regression is a statistical technique to determine the linear relationship between two or more variables. Regression is primarily used for prediction and causal inference. The linear regression model (LRM) is designed to study the relationship between a pair of variables that appear in a data set. The multiple LRM is designed to study the relationship between one variable and several of other variables (Dan Campbell and Sherlock Campbell,2008)

Montgomery et al (1982) outlines the following four purposes for running a regression analysis.

Description: The analyst is seeking to find an equation that describes or summarizes the relationship between two variables. This purpose makes the fewest assumptions.

Coefficient Estimation: This is a popular reason for doing regression analysis. The analyst may have a theoretical relationship in mind, and the regression analysis will confirm this theory. Most likely, there is specific interest in the magnitudes and signs of the coefficients. Frequently, this purpose for regression overlaps with others.

Prediction: The prime concern here is to predict the response variable, such as sales, delivery time, efficiency, occupancy rate in a hospital, reaction yield in some chemical process, or strength of some metal. These predictions may be very crucial in planning, monitoring, or evaluating some process or system. There are many assumptions and qualifications that must be made in this case. For instance, you must not extrapolate beyond the range of the data. Also, interval estimates require that normality assumptions to hold.

Control: Regression models may be used for monitoring and controlling a system. For example, you might want to calibrate a measurement system or keep a response variable within certain guidelines. When a regression model is used for control purposes, the independent variable must be related to the dependent variable in a causal way. Furthermore, this functional relationship must continue over time. If it does not, continual modification of the model must occur.

The following assumptions was considered in this linear regression analysis;

Linearity-This assumption was evaluated by using a scatter plot.

Constant Variance-This assumption was detected by plotting the residuals versus the independent variable.

Special Cause-Special causes, outliers due to one-time situations, have been removed from the data. If not, they may cause no constant variance, non-normality, or other problems with the regression model. The existence of outliers was detected by considering scatter plots of Y and X as well as the residuals versus X. Outliers show up as points that do not follow the general pattern.

Normality-The residuals followed normal distribution.

Hair et al. (2013) suggested in scholarly research that focuses on marketing issues, R2 values of 0.75, 0.50, or 0.25 for endogenous latent variables can, as a rough rule of thumb, be respectively described as substantial, moderate or weak (Hair et al**.,** 2013, p. 175).

Table 14: Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.888[a]	.788	.784	.38405

a. Predictors: (Constant), Perceived Behavioral control , Attitude, Subjective Norms

The *R* value represents the correlation between predicted and observed behavioral intention which is 0.888.Since this is a very high correlation, our model predicts behavioral intention rather precisely. The R^2 value indicates the proportion of variance in behavioral intention that can be "explained" by our three predictors(Perceived behavioral control, Attitude & subjective norms). In this case, 78.4% can be explained, which is very large. Because regression maximizes R square for our sample, it will be somewhat lower for the entire population, a phenomenon known as shrinkage. The adjusted R square estimates the population R square for our model and thus gives a more realistic indication of its predictive power. The high adjusted R squared tells us that our model does a great job in predicting behavioral intention.

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	87.239	3	29.080	197.160	.000[b]
	Residual	23.451	159	.147		
	Total	110.690	162			

a. Dependent Variable: Behavioral intention

b. Predictors: (Constant), Perceived Behavioral control , Attitude, Subjective Norms

This indicates the statistical significance of the regression model that was run. Here, $p<$ 0.000, which is less than 0.05, and indicates that, overall, the regression model statistically significantly predicts the outcome variable (i.e., it is a good fit for the data).

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.387	.124		-3.125	.002
	Attitude	.251	.051	.240	4.923	.000
	Subjective Norms	.554	.054	.583	10.230	.000
	Perceived Behavioral control	.188	.044	.194	4.233	.000

a. Dependent Variable: Behavioral intention

The b coefficients tell us how many units Behavioral intention increases for a single unit increase in each predictor. Like so, 1-point increase on the attitude corresponds to 0.25 points increase on the behavioral intention. Given only the scores on our predictors, we can predict behavioral intention by computing:

Behavioral intention = -0.387 + (0.25 x attitude) + (0.55 x subjective norms) + (0.19 x perceived behavioral control).

Importantly, note that all b coefficients are positive numbers; higher attitude, subjective norms and perceived behavioral control are associated with higher behavioral intention (generic drug substitution in this case) and so on.

The column "Sig." holds the significance levels for our predictors. As a rule of thumb, we say that a b coefficient is statistically significant if its p-value is smaller than 0.05. All of our b coefficients are statistically significant.

4.2.3.5 Further Analysis on Attitude

4.2.3.5.1 Attitude Score

Attitude is the degree to which an individual favors a particular behavior (Ajzen, 1991).Attitude constructs had high Cronbach's Alpha coefficient (table 4.1) with behavioral belief (0.755) and evaluation of behavioral outcome (0.785), showing a high level of reliability. Between the two antecedents of attitude, the instrumental component of attitude (behavioral belief) is regarded as the most direct measure of attitude, while the affective component (feelings) of attitude is the indirect measure. Table 4present the means for all four items of the instrumental attitude construct while Table 5 present the means for all five items of the affective attitude

Table 15: Direct measure of attitude

Construct No	N	Mean	Std. Deviation
Q6	163	1.8037	1.09352
Q7	163	1.8466	.98497
Q8	163	2.0123	1.13848
Q9	163	2.0245	1.13285

Since there are four items in the construct above and a 7-point Likert scale was used, therefore the range is:1 x 4 = 4 (minimum) and 4 x 7 = 28 (maximum). As direct measure construct was designed in a way that the most positive outcome =1 and the most negative outcome =7, the mean for the construct = 7.69, which is 27%, meaning the pharmacists studied have 73% positive attitude towards the use of generic medicines.

Table 16: Indirect measures of attitude

Construct No	N	Mean	Std. Deviation
Q10	163	2.7914	2.07410
Q11	163	2.8528	2.11763
Q12	163	2.8773	2.01774
Q13	163	2.8405	2.10797
Q14	163	2.8773	2.01774

In the construct shown on the table above, there are 5 items and a 7-point Likert scale was used, therefore the range is: 1 x 5 = 5 (minimum) and 7 x 5 = 35 (maximum). Since indirect measure construct was designed in a way that the most positive outcome =1 and the most negative outcome =7, the mean of the construct = 14.24 which equal to 41%, Meaning 100%-41% = 59% have positive attitude towards the generics.

Behavioral belief is the dominant driver of the attitude compared evaluation of the behavioral outcome. For one to change the attitude it is important to focus on changing the belief.

4.2.4 Findings of Pharmacy head interviews

4.2.4.1 Socio-demographic characteristics of Pharmacy heads

Fourteen pharmacy heads interviews were conducted among pharmacy personnel drawn from 14 government hospitals in Addis Ababa. The age of pharmacy heads ranges from 28 to 46 years. And among fourteen pharmacy heads only two was female. Half(seven/fourteen) of the participants had 10-15-year experience. Regarding educational level, majority (ten) of the participants had masters and the remaining four had bachelor of pharmacy (Table 6).

Table 17: Socio-demographic characteristics of pharmacy heads

S.no	Socio-demographic characteristics		Number (%)
1	Gender	Male	12(85.7)
		Female	2(14.3)
2	Age	28-32	4(28.6)
		33-37	5(35.7)
		38-42	3(21.4)
		>42	2(14.3)
3	Experience	5-10	4(28.6)
		10-15	7(50)
		>15	3(21.4)
4	Education level	Bachelor	4(28.6)
		Masters	10(71.4)

Thematic content analysis of the interviews identified two major themes: attitude towards generic medicines and factors that affect clients' generic medicine use.

4.2.4.2 Attitude towards generic medicine

Based on guiding question developed for an in-depth interview, participants' attitude towards safety, effectiveness, affordability and quality of generic medicine was assessed.

Safety

Most (twelve out of fourteen) of the respondents believe that a medicine approved as generic equivalent are as safe as brand name alternatives. The most common reasons given was similarity in active ingredient: they stated that safety of medicine depends on active ingredient composition. Conversely few (two out of fourteen) of the participants lack confidence on the safety of generic medicine. According to those respondents, generic medicine manufacturers use inferior quality additives that result in lower safety:

"I think generic medicines cause more side effects than branded alternatives because generic manufacturing companies are allowed to use different additive from original product and this helps them to use less costly substandard additive." (pp3)

Effectiveness

About half (seven out of fourteen) of the participants believe on the effectiveness of generic medicine and they provided different reasons: generic medicine satisfies the minimum effectiveness requirements; effectiveness of medicine depends on active ingredient; both generic and brand medicine pass through similar quality approval system of FMHACA and Generic medicine has bioavailability within the acceptable range. On the other hand, few (five/fourteen) of the participants pointed out that most imported generics are less effective:

"It is difficult to generalize all generics in one category. For instance, local products are effective but generics from abroad are lower in efficacy than brand alternatives." (pp3)

Similarly, two of the participants believe that generic medicines are less effective than brand alternatives due to additive difference which results in bioavailability difference.

Quality

Around half of the respondents explained that both generic and brand name medicines are similar in quality because the government drug regulatory body applies the same quality control criteria to both generic and brand name medicine. However, few (three) of the participants thought that generics are inferior in quality. The reasons mentioned was generic medicine manufacturers use cheaper additives with lower quality. On the contrary, five participants stated that it is difficult to generalize all generics in one, they pointed out that there are generic manufacturers that produce superior, equal or inferior quality products:

"*Quality of the product is not related to generic or brand but the company status that manufacture it. For instance, Cyprus generics are even superior to brand alternatives*." *(pp10)*

Affordability

All most all (thirteen out of fourteen) of the respondents explained that generic drugs are cheaper than the brand drugs because the pharmaceutical companies that develop generic drugs do not have to invest time and money in developing these drugs. And they also added that generic drugs are copies of their brand-name drugs, which has already undergone the process of research and development. However, one participants thought that generic drugs are cheaper than their brand counterpart because of shape, color, taste and packaging:

"Even though a generic drug has the same active ingredient as its brand-name drugs and has the same therapeutic effect in the body. However, generic drugs could be different from their brand-name drugs in terms of shape, color, taste and packaging. This could affect the affordability of the drug." (pp14)

4.2.4.3 Factors affecting generic medicine use

The interviews revealed that affordability, better availability, type of illness, experience of patients with generic medicine, prescribers and/or dispensers influence, and lack of confidence on safety, effectiveness and quality of generic medicines as the main factors that affect generic medicine use. Cost was identified as the major reason for acceptance of generic medicine Apart to the cost, availability of generic medicine/ unavailability of branded alternatives was mentioned as a factor that promote generic medicine use by clients. Some of the respondents pointed out that types of illness affects consumers' decision. Most patients with chronic illness prefers brand name medicine while for minor case they accept generic alternative. Consumers' experience with generic medicine was also identified as a factor, patients with positive experience prefers using generic alternatives. As respondents said prescribers' and dispensers' inclination to brand name medicines was identified as a barrier to accept generic medicine by clients:

"Most prescribers prefer prescribing brand name medicine and clients in turn stick to the prescribed medicine. Since most clients think physicians know best about medicines, they resist generic substitution once brands are ordered." (Pp10)

Participants stated that some clients have no trust on developing countries products: they feel all developed countries products weather generic or brand as superior in quality and other countries products ineffective or unsafe.

"Most clients relate quality/efficacy of medicine with the development level of the country majority of them relate European product with high quality and non-Europe product with inferior quality there for they accept any type of medicines produced in Europe." (Pp10)

4.2.5 Hypothesis testing

In the standard approach to significance testing, one has a null hypothesis (Ho) and an alternative hypothesis (Ha) which describes opposite and mutually exclusive patterns regarding some phenomena. Usually, the null hypothesis (Ho) denies the existence of a relationship between X and Y and the alternative hypothesis (Ha) supports that X and Y are associated (Cramer and Howitt ,2004).

Since the alternative hypothesis represents the corroboration of the theoretical expectations of the researcher, scholars are usually interested in rejecting the null hypothesis in favor of the alternative hypothesis. However, McLean and Ernest (1998: 16) argue that "a null hypothesis (Ho) and an alternative hypothesis (Ha) are stated, and if the value of the test statistic falls in the rejection region the null hypothesis is rejected in favor of the alternative hypothesis. Otherwise the null hypothesis is retained on the basis that there is insufficient evidence to reject it".

The level of statistical significance is often expressed as the so-called p-value. Depending on the statistical test chosen, a probability would be calculated (i.e., the p-value) to observe the sample results given that the null hypothesis is true. Another way of phrasing this is to consider the probability that a difference in a mean score (or other statistic) could have arisen based on the assumption that there really is no difference. The p-value is a number between o and 1 and interpreted in such a way that a small p-value (≤ 0.05) indicating strong evidence against the null hypothesis to reject it. This means that such a difference or relationship is likely to occur by chance 5 or fewer times out of 100. This level is generally described as the proportion 0.05 and sometimes as the percentage 5%. The 0.05 probability level was historically an arbitrary choice but has been acceptable as a reasonable choice in most circumstances (Cramer and Howitt, 2004: 151).

Table 18:Result of hypothesis testing

S/no	Statement	P-value	Result
H_1	There is a significant difference on attitude towards generic medicines among pharmacists' genders	0.032	Accepted
H_2	There is a significant difference on attitude towards generic medicines among pharmacists age groups	0.226	Failed to accept
H_3	There is a significant difference on attitude towards generic medicines between pharmacists of different level of education	0.464	Failed to accept
H_4	There is a significant difference on attitude towards generic medicines between pharmacists of different work experiences	0.516	Failed to accept
H_5	There is a correlation between the attitude towards generic medicines and subjective norms	0.005	Accepted
H_6	There is a correlation between the attitude towards generic medicines and perceived behavioral control	0.000	Accepted
H_7	There is a significant relationship between the attitude towards generic medicines and behavioral intention	0.000	Accepted
H_8	There is a significant relationship between perceived behavioral control and behavioral intention	0.00	Accepted
H_9	There is a significant relationship between subjective norms and behavioral intention	0.00	Accepted

4.3 Discussion

This study was conducted to assess the attitude of pharmacists in government hospitals towards generic medications in Addis Ababa. The study found that gender has positive and statistically accepted significant influence on attitude towards generic medication is different from the study reported from south Africa that revealed gender have no statistically accepted significant influence on attitude towards generic medication. On the other hand, both in this study and as the study reported from south Africa; age, qualification and experience have no statistically accepted significant influence on attitude towards generic medication.

From this study, male (2.7±.84) participants had statistically significantly higher score on attitude towards generic medication compared to females [(2.5±.65), t (2.169) = 146.356, p = 0.032] which is different from study reported from USA that revealed a greater awareness of generic medication was found among female consumers.

Gender was included as one of the most important personal factors that influence customers' decision-making behavior. Social relationship/roles and responsibilities of men and women, the expectations held about the characteristics, aptitudes and likely behaviors of both women and men (femininity and masculinity) that are learned change over time and vary within and between cultures. Gender has an important role in consumer behavior due to the differences between men and women about expectation, want, need, lifestyle and so on. As per the socialization of men and women, women are perceived to be internally focused and often talk as a way to connect and relate to others, whereas men are perceived to be externally focused and often view situations as issues to be resolved. Men and women also possess different problem solving skills even though they approach the same problem with the same goal in mind but their steps would be different (Bashki, 2012:8).

From the study participant's 70.9% believe that generic medicines are equally effective as brand name medicines and 20.5% of respondents disagree with the concept generic medicines are equally effective as brand name medicines which is less than the study reported from Mekelle that 34.4% of respondents has believed generic medicines are less effective compared to brand name medicines(Yard B et al,2017).Study from South Africa reported a large percentage (88.9%) believe there is a place for generic medication and that generic medication is effective (Reinhard Tolken ,2011) which shows better perception in generic medicine acceptance in South Africa than Addis Ababa so, promotion of generic medicine might be critical work in Addis Ababa.

This study also revealed that 63.7% of the respondents agree and 13.3% disagree with the concept branded medicines have equal quality with generic medicines which is higher than the study reported from Mekelle that 40.2% couldn't believe in the idea of brand name medicines are of higher quality compared to generic drugs (Yard B et al,2017). As study conducted in Czech Republic 16.1% pharmacists believed that generic products are of lower quality than branded drugs (Maly et al, 2013, pp. 923-931) which is higher than that of current study (13.3%). A result from this study is also lower than the result reported from Nigeria that 54.5% of respondents reported that generic medicines were not of equivalent quality to branded ones (Asa A et al,2014, pp. 800-806).

According to this study 67.3% of the respondents agree with the concept substituting a branded medicine with a generic medicine is getting an affordable drug which is lower than study reported from Nigeria that 70.1% agreed that generic medicines are cheaper than branded medicines (Asa Auta et al,2014, pp.53-58).

The present study shows that 62.4% of the respondents agree with the concept generic medicines are equally safe as branded medicines which is higher than result reported t from Saudi that 51.3% of participants thought that generic medicines have more side effect than brand name medicines (Wajid et al,2015, pp. 800-806).As study report from Czech Republic only 11.2% respondents expected generics to cause more adverse drug reactions(Maly et al, 2013, pp. 923-931)which lower than this study's result that 21.8% of respondents disagree agree with the concept generic medicines are equally safe as branded medicines.

As to study report from Mekelle 65.5% of respondents thought Cost effectiveness of generic medicines is important (Yard B et al,2017) which shows slightly higher perception to generic medicine than current study that 63.7% of the respondents reported generic medicines are cost effective than branded medicines.

There was a weak positive correlation between attitude and subjective norms, which was statistically significant, r_s =0.217, p =0.005. And, there was a strong positive correlation between attitude and perceived behavioral control, which was statistically significant, r_s =0.524, p = 0.000. There is statistically a significant relationship between predictors (attitude, subjective norms and perceived behavioral control) and behavioral intention (positive correlation). From this study 73%(from direct measure of the attitude construct) and 59% (from indirect measure of the attitude construct) of Pharmacists studied have positive attitude towards the use of generic medicines. Based on this we can say that this positive attitude towards the use of generic medicines leads to generic substitution.

The qualitative part of the present study showed that14.3% of the pharmacy heads lack confidence on the safety of generic medicine which is less than report from Czech Republic that 11.2% respondents expected generics to cause more adverse drug reactions (Maly et al, 2013, pp. 923-931). 14.3% of the pharmacy heads believe that generic medicines are less effective than brand alternatives which is less than the study reported from Mekelle that 34.4% of respondents has believed generic medicines are less effective compared to brand name medicines (Yard B et al,2017). Most of (92.3%) of the pharmacy heads in the present study explained that generic drugs are cheaper than the brand drugs which is greater than study reported from Nigeria that 70.1% agreed that generic medicines are cheaper than branded medicines (Asa Auta et al,2014, pp.53-58).

CHAPTER 5: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This is the final chapter of the study of 'Assessment of attitude of pharmacists in government hospitals towards Generic Medications in Addis Ababa, Ethiopia', where summary, conclusions, limitations and recommendations was covered. Chapter five covers conclusions which are based on the findings presented and discussed in chapter four in relation to the literature review covered in chapter two.

5.2 Summary

The main aim of the study was to assess the attitude towards generic medicines by pharmacists in Addis Ababa. Generics are viewed as an opportunity to reduce healthcare cost; therefore, a positive attitude would lead to more generic usage and cost reduction.

The attitude towards the generic medicines was evaluated using the Fishbein model, which is based on the evaluation of the attitude towards the behavior (generic substitution), not the object (generic medicines). Evaluation of the attitude towards the behavior has been found to be more reliable than the evaluation of the attitude towards the object, therefore the conclusion of the study will be based on the attitude toward generic substitution or generic medicines use.

Chapter one presented background of the study, statement of the problem, basic research questions, objectives of the study, definition of terms, significance of the study, and delimitation/scope of the study.

Chapter two contained the overview of the literature, where theoretical review and empirical review was provided and looking at the role of generics in the market, the role of different stakeholders, the role of pharmacists and models of consumer behavior. Factors influencing consumer behavior were explored and the role of attitude as well as the models available to evaluate the attitude. Conceptual framework and research hypotheses were also presented.

Chapter three looked at the background of the research approach, research design, sampling design, source of data, data collection method, data collection instrument, data analysis method, validity and reliability.

Chapter four looked at research finding, analysis, interpretation and discussion. The empirical results focused on the demographic profile for the respondents, reliability of the instrument, hypothesis testing and correlation between dependent (Behavioral Intention) variables and Independent (Attitude, Subjective Norms and Perceived behavioral control) variables.

Chapter five concluded the study by giving a summary, conclusion outlining the research findings and literature review, limitations and recommendations and opportunities.

5.3 Conclusions

The attitude of pharmacists towards generic medication is very important to the patient. If pharmacists are not in favor of generic medication, then the chances of recommending these products are very slim.

5.2.1 Statistical analysis

The results of the construct reliability using the Cronbach Alpha coefficients showed that all of the constructs have proven an internal consistency or reliability with Cronbach's Alpha ranging from 0.710 to 0. 884. Therefore, analysis in this study would be based on the Theory of Planned Behavior since all the constructs were available for analysis.

5.2.2 Pharmacists attitude towards generics

The study looked at the following demographic characteristics against the antecedents of attitude and the following outcomes were found:

- Gender: significant difference
- Age: no significant difference
- Education Level: no significant difference
- Years of experience: no significant difference

The pharmacists' attitude (positive or negative) towards generics medicine does not depend on education level, years of experience and age. Regarding gender, the study found that there is a significant difference between male and female for the pharmacists' attitude (positive or negative) towards generics medicine

There was a weak positive correlation between attitude and subjective norms, which was statistically significant. And, there was a strong positive correlation between attitude and perceived behavioral control, which was statistically significant.

There is statistically a significant relationship between predictors (attitude, subjective norms and perceived behavioral control) and behavioral intention. That is, higher attitude is associated with higher behavioral intention (generic drug substitution in this case).

5.3 Limitations

Looking through the study, there are a couple of limitations that need to be highlighted, leaving room for improvement for future studies. These limitations include:

- The sample is only restricted to certain geographic area, specifically Addis Ababa.
- This study cannot be generalized to the broader public with confidence due to the fact that a systematic random sampling was used.
- The sample size was adequate for this study but a bigger sample would have been ideal to generalize back to the population.
- The focus of this study was only on pharmacists. Consumers and Medical professionals, such as physicians, also have attitudes towards generic medication which can be usefully explored.

5.4 Recommendations

The information above would be very important for the pharmaceutical marketers for both generics and innovator companies.

5.4.1 Generic companies

If a company is introducing the first generic to launch following the loss of exclusivity by the innovator drug and with the aim of capturing market share quickly before other generics launches it would rather channel more resources to the generics receptive market that would be the low laying fruits. These outlets serve mainly patients who are price sensitive and are mostly of middle to lower socioeconomic class. Pharmacists practicing in this market would mostly be price sensitive and promote generics hence a positive attitude.

A generic company with a generic medicine, which is a market leader in the generics receptive market, with no room for further growth while the innovator drug is still enjoying a significant market share in the higher class market may invest in confrontational strategy versus the innovator. Knowing that there is a negative attitude towards the generics in this market, the company would need to invest in further research to determine the drivers/sources of the attitude in order to communicate the right message to the right customer.

5.4.2 Innovator companies

High investment in the generics receptive market would be a waste resources. The company would rather invest further capitalize on the negative attitude towards the generic medicines.

5.4.3 Government

For the government to reduce the health care cost especially the pharmaceutical expenditure there is a need to identify the drivers of a negative attitude towards generics among pharmacists and address that. Further education to the patient is also required.

5.4.4 Funders

The funders can also do better than using the co-payments system to drive the use of cheaper alternatives. An investment in patient education instead of perceived bullying is required, where patients can drive the demand of generics no matter how wealthy they are.

5.4.5 Future Research

From the results and observations in this study, the future research proposed was:

- Given the diversity of Ethiopia, a similar study can be done with a randomized representative sample of the whole country.
- A more detailed study with pharmacists working in private pharmacy to get a complete picture.

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APPENDICES

Questionnaires

Addis Ababa University

School of Commerce

Department of Marketing Management

Dear Respondents,

This questionnaire is designed to gather data on "Attitude of Pharmacists in Government Hospitals towards Generic Medications in Addis Ababa, Ethiopia". The purpose of the study is to fulfill a thesis requirement for the Masters of Arts in Marketing Management at Addis Ababa University. Your highly esteemed responses for the questions are extremely important for successful completion of the thesis. The information that you provide will be used only for the purpose of the study and will be kept strictly confidential. You do not need to write your name. Finally, we would like to thank you very much for your cooperation and sharing your valuable time for our request. Indicate your response by circling the number or word that best describes your answer.

.

Regards!

Fayera Tasso

Telephone: +251 911 03 93 14

Part One: Demographic Information

S/no						
1	Gender	Male		Female		
2	Age	<25	26- 35	36-45	46- 55	> 55
3	Experience	<1	01-05	06-10	> 10	
4	Education level			Bachelor	Masters	

Part two: Subjective Norms, Perceived behavioral control and Attitude Questions

Section A: Behavioral Belief Questions

Please circle the number that best describes your opinion

		SA	A	SlA	N	SlDA	DA	SDA
6	Switching prescriptions from a branded medicine to a generic medicine is good for me	1	2	3	4	5	6	7
7	For me, switching prescriptions from a branded medicine to a generic medicine is beneficial	1	2	3	4	5	6	7
8	Switching prescriptions from a branded medicine to a generic medicine is safe for me	1	2	3	4	5	6	7
9	For me, switching prescriptions from a branded medicine to a generic medicine is appropriate	1	2	3	4	5	6	7

Section B: Evaluation of Behavior Questions

Please circle the number that best describes your opinion

		SA	A	SlA	N	SlDA	DA	SDA
10	Substituting a branded medicine with a generic medicine means I am giving an equally effective drug to my patient	1	2	3	4	5	6	7
11	Substituting a branded medicine with a generic medicine means I am giving equally quality drug to my patient	1	2	3	4	5	6	7
12	Substituting a branded medicine with a generic medicine means I am giving affordable drug to my patient	1	2	3	4	5	6	7
13	Substituting a branded medicine with a generic medicine means I am getting a cost effective drug for my patient	1	2	3	4	5	6	7
14	Substituting a branded medicine with a generic medicine means I am giving an equally safe product							

Section C: Motivation to Comply Questions

Please circle the number that best describes your opinion

		SA	A	SlA	N	SlDA	DA	SDA
15	Doing what the medical aid approves is very important to me	1	2	3	4	5	6	7
16	Dispensing exactly what the doctor has prescribes is very important to me	1	2	3	4	5	6	7
17	Specialist approval for my practice is very important for me	1	2	3	4	5	6	7
18	Giving my patient's an effective and safe medication is more important than cost	1	2	3	4	5	6	7
19	My colleagues approval for my practice is very important for me	1	2	3	4	5	6	7

Section D: Normative Belief Questions

Please circle the number that best describes your opinion

		SA	A	SlA	N	SlDA	DA	SDA
20	General practitioners would be happy it if I switch their prescription to a generic medicine	1	2	3	4	5	6	7
21	Patients would appreciate it if I switch their prescription to a generic medicine	1	2	3	4	5	6	7
22	Medical Aids would appreciate it if I switch their patients prescription to generic medicine	1	2	3	4	5	6	7
23	I think that other pharmacists would switch their prescription to a generic medicine	1	2	3	4	5	6	7
24	Patients think that I would switch their prescription to a generic medicine	1	2	3	4	5	6	7
25	Specialists think that I would switch their prescription to a generic medicine	1	2	3	4	5	6	7

Section E: Perceived Power Questions

Please circle the number that best describes your opinion

		SA	A	SlA	N	SlDA	DA	SDA
26	I would challenge other pharmacists who push their patients to take branded medicines	1	2	3	4	5	6	7
27	If I encountered pharmacist who always use brand medicines, I would convince him that they are the same with generic medicines	1	2	3	4	5	6	7
28	If I encountered patient who wants use brand medicines, I would convince him to use generic medicines	1	2	3	4	5	6	7
29	I would challenge doctors who always prescribe brand medicines	1	2	3	4	5	6	7
30	I would challenge him, if I encountered specialist who is against the use of generic medicines.	1	2	3	4	5	6	7
31	I would substitute all the branded medicines to generic medicines	1	2	3	4	5	6	7
32	I am confident that will use generic medicines for myself	1	2	3	4	5	6	7
33	I would challenge medical aids who forces their patients to use only generic medicines	1	2	3	4	5	6	7
34	I would never recommend brand medicines for my family members	1	2	3	4	5	6	7

Section F: Control Belief Questions

Please circle the number that best describes your opinion

		SA	A	SlA	N	SlDA	DA	SDA
35	It is totally up to me to decide whether to substitute or not brand medicine to a generic medicine	1	2	3	4	5	6	7
36	It is up to the patient if he/she prefers to use the generic medicine or the branded medicine	1	2	3	4	5	6	7
37	It is up to the medical aid whether they will reimburse for the branded medicine or the generic medicine	1	2	3	4	5	6	7
38	It is up to the doctor/specialist whether the patient can be switched to a generic or not	1	2	3	4	5	6	7

Section G: Behavioral Intention Questions

Please circle the number that best describes your opinion

		SA	A	SlA	N	SlDA	DA	SDA
39	I have substituted brand drugs for generic drugs equivalents for all cases	1	2	3	4	5	6	7
40	I have substituted brand drugs for generic drugs equivalents for all my patients	1	2	3	4	5	6	7
41	I took generic drugs for my self	1	2	3	4	5	6	7
42	I have substituted brand drugs for generic equivalents because they are affordable	1	2	3	4	5	6	7

Thank you for your participation!

Interviews

Addis Ababa University

School of Commerce

Department of Marketing Management

[Shake hands] My name is Fayera Tasso, the principal investigator of the study entitled "Attitude of Pharmacists in Government Hospitals towards Generic Medications in Addis Ababa, Ethiopia" I would like to have some minutes with you to assess your attitude towards generic medicine.

The aim of this interview is to assess attitude of pharmacists in government hospitals towards generic medications. To meet this aim I would like to ask you some questions about your attitude towards generic medicine. Your interview responses will only be shared with research team members and I will ensure that any information I include in my report does not identify you as the respondent. You may end the interview at any time however your honest answers to these questions will help me better understand about attitude towards generic medicine among pharmacy professionals. The interview should take about 10 minutes. Are you available to respond to some questions at this time?

Part I: Socio-demographic characteristics

1. Gender _____
2. What is your age?
3. How many years you spent on this job?
4. Tell me your educational level.

Part II: Questions related to Pharmacists attitude towards generic medicine.

1. What is your opinion regarding quality, safety, affordability and effectiveness of generic medicine?
2. What do you think are the factors affecting generic medicine use? Explain
3. Is there anything more you would like to add?

Thank you for your participation!