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**DETERMINANTS OF PATIENTS' CHOICE FOR OVER THE
COUNTER MEDICINE AMONG PRIVATE PHARMACIES IN
NAIROBI COUNTY, KENYA.**

BY

RACHEAL WAITHIRA WANJIRU

122537

**PAPER SUBMITTED IN PARTIAL FULFILMENT FOR THE
REQUIREMENTS OF MASTERS OF BUSINESS
ADMINISTRATION AT STRATHMORE
BUSINESS SCHOOL**

2023

DECLARATION

DECLARATION BY THE CANDIDATE

I declare that this is my original work and has not been previously presented or published for an award of diploma or degree in this institution or any other university.

SIGNATURE.......... | DATE 20/05/2022

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DECLARATION BY THE SUPERVISOR

This work has been submitted for examination with my approval as university supervisor.

SIGNATURE  DATE 09/5/2023

DR. FRANCIS WAFULA

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ABSTRACT

The goal of the study was to assess the determinants of patients' choice for over the counter medicine among private pharmaceuticals in Nairobi County, Kenya. The following research goals served as the study's direction and helped the study in achieving its overall goal: (i) to determine the effect of patients' level of understanding of originality of the medicine, on the patients' choice for over the counter medicine; (ii) to establish the effect of pattern of choice of pharmaceutical facility on the patients' choice for over the counter medicine; and (iii) to examine the role of pharmacy technician on the clients' choice for over the counter medicine. To answer the "what" and "how" of the study questions, descriptive research design was applied for this study. 3170 retail pharmacies registered with the Pharmacy and Poisons Board (Cytonn 2021) within Nairobi County made up the target population.

In addition, the study applied systematic sampling approach to survey 200 customers from the 36 pharmacy stores. The study used descriptive and inferential statistics for the analysis of data with the help of Statistical Program for Social Sciences (SPSS) version 25. To ascertain the relationship between the independent factors and patients' choice of medication, a multiple regression model was used. The study made theoretical contributions because the findings contribute to the corpus of knowledge already available.

Regarding the role of pharmacy technician competence, the results revealed a positive significant relationship between the role of pharmacy technician competence and the clients' choice for over the counter medicine. This was perceived to imply that the more the capability of drug store expert improved (regarding great relational abilities and administration quality) in the review region, the more the decisions for over the counter medication was probably going to be seen despite the negligible impact.

The study concluded that there is a significant correlation between patients' level of understanding of originality of the over the counter medicine, the pattern of choice of pharmaceutical facility, the role of pharmacy technician competence; and the clients' choice for over the counter medicine. The study recommends pharmacy technicians and other pharmaceutical professionals in the study region to be knowledgeable with non-prescription medicine needs to pass something very similar to clients as this will upgrade a decent relationship and refresh buy. Further, the pharmacy technicians are recommended to continually self-assess their ability particularly relational abilities in order to serve the clients capability as this will advance client-drug store relationship. It is also recommended that future examination center around a bigger scope to draw significant discoveries since this study focused on non-prescription drug.

ACKNOWLEDGEMENT

Above all else I give my appreciation and humble gratefulness to the All-powerful God for the gift of life, extraordinary prosperity, a sound character and divine fortune that enabled me to consider this investigation adventure. I stretch out my earnest appreciation to the Business Administration of Strathmore Business School for its exceptional help during this scholarly excursion.

Besides, I wish to accord my supervisor, Dr. Francis Wafula, one of a kind certification, for furnishing me with the learning and aptitudes in making the endeavor with unimaginable comprehension, comfort and bearing all through the investigation adventure by scrutinizing and reviewing my work. God Favor You.



DEDICATION

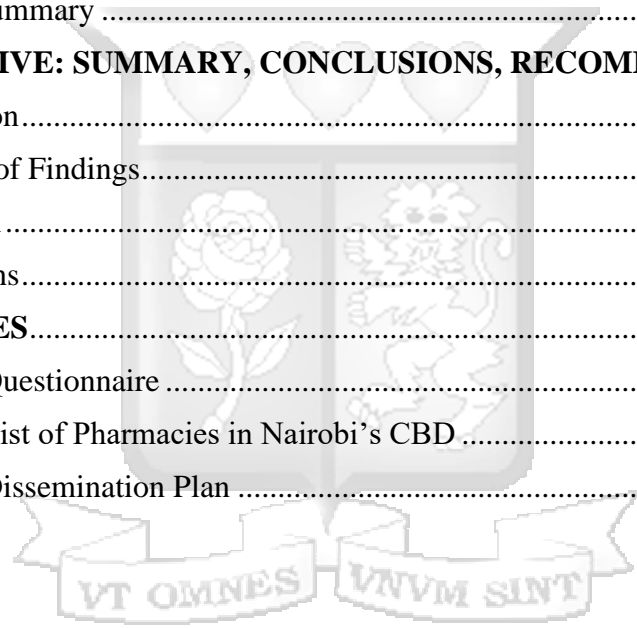
This examination is devoted to my cherishing family, my mum and two children for their help, persistence, support and push amid the whole procedure. May the Almighty bless all of you.



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ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis Of Variance
BPMH	Best Possible Medication History
CAGR	Compound Annual Growth Rate
CBD	Central Business District
CCC	Clinical Care Classification
COMESA	Common Market for Eastern and Southern Africa
EAC	East Africa Community
EU	European Union
KEMSA	Kenya Medical Supplies Authority
KNBS	Kenya National Bureau of Statistics
NGO	Non-Governmental Organisation
OTC	Over-The-Counter
SBS	Strathmore Business School
SF	Substandard/Falsified
SPS	Sanitary and Phytosanitary Measures
SPSS	Statistical Package for Social Sciences
USA	United States of America
USD	United States Dollar
WHO	World Health Organization



CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Without a robust labor force, a country cannot achieve wealth. For people to create goods and services at their highest potential, they need be in good health. This is due to the fact that economic growth and progress are primarily driven by human capital (Ranerup, Noren & Lundin, 2018). Having said that, it has been demonstrated that having access to the right pharmaceuticals has a significant impact on community health and the associated economic indicators. The World Health Organization (WHO, 2020) is the best source for stating the fact that quality-assured, safe, and effective medications, vaccines, and medical devices are essential to a functional health system (Ranerup et al., 2018). However, globalized trade can undermine regulation, and in resource-limited settings especially, incidence of substandard or falsified medicines is growing (Grytten & Sorensen, 2019).

Falsified medical products are those that deliberately/fraudulently misrepresent their identity, composition or source while substandard are authorized medical products that fail to meet either their quality standards or specifications (Victoor, Friele, Delnoij & Rademakers, 2017). Substandard and falsified medical products may lead to loss of confidence in medicines, healthcare providers and health systems. Anti-malarial and antibiotics are among the most frequently reported instances of substandard and fake medical items, with 21% of cases coming from the United States of America (US), 21% from the European Union (EU), and the majority (42%) coming from Sub-Saharan Africa (WHO, 2020). The amount spent on medicine globally keeps increasing. Spending on medications increased from just 887 billion dollars in 2010 to approximately 1.42 trillion dollars in 2021 (Victoor, 2017). By 2026, that figure is projected to rise to around 1.8 trillion. In terms of global spending on medicines, the United States is in first place (Ranerup et al., 2018). There were about 375 pharmaceutical producers in sub-Saharan Africa as of 2019, compared to over 5,000 and 10,500 in China and India, respectively.

Some of the unique factors cited to major influence client choice for medicine include but not limited to: prescription by a physician, buying over-the-counter, clients' level

of understanding of originality of the drug, pattern of choice of pharmaceutical facility, pharmacy personnel, drug efficacy and the socioeconomic status of the patients (Burge, Devlin, Gallo, Nason, & Ling, 2016). Other factors include potential side effects, the complexity or simplicity of dosing schedules and age of the patient among others (Ranerup et al., 2018). For purposes of this study, three dimensions will be considered: clients' level of understanding of originality of the drug, pattern of choice of pharmaceutical facility and pharmacy personnel.

1.1.1 Patient Choice on Over the Counter Medicine

Patients may and should play a significant part in determining the best course of treatment for themselves, defining optimal care, and enhancing healthcare delivery, this is becoming increasingly clear. The liberation of patient choice is demonstrated by popular notions like patient-centered care, patient empowerment, and patients as partners, as well as shared decision-making and informed choice (Burge et al., 2016). When selecting a medication, the patients' decisions are influenced by various parameters. These parameters include key among them; prescription by physician and/or buying over-the-counter (OTC) (Dixon, Robertson, Appleby, Burge & Devlin, 2019). A prescription medicine is a medicine that can only be made available to a patient on the written instruction of an authorized health professional, while over-the-counter drugs are medications available without a prescription (Grytten & Sorensen, 2019). In other words, OTC drugs are issued directly from a pharmacy and do not have a special scheme of administration.

Prescription drug are expensive due to the fact that treatments for serious disease are not luxury items, but are needed by vulnerable patients who seek to improve the quality of life or to prolong life (Munnaya et al., 2015). Therefore, patients and their families are willing to pay any price in order to save or prolong life. For instance, approximately 25% of Americans find it difficult to afford prescription drugs due to high out-of-pocket costs (WHO, 2020). Over-the-counter buying decision is triggered by a number of factors out of which the most important seem to be: doctor choice, previous own experience, advice of the pharmacist and the information stated on the prospectus (Victoor, 2017). According to Grytten and Sorensen (2019), primary sources of OTC drugs are pharmacy and drug shops, and family, friends and relatives as well as leftover drugs from previous treatment. For example, a recent report by

WHO (2020) shows that prescription drugs issued by pharmacies had reached a value of \$1.85 billion, while drugs without prescription (OTC) reached a value of \$0.54 billion. The report indicated that self-medicating with OTC drugs is prevalent in sub-Saharan Africa.

However, literature on reasons for this, and misuse are not well defined. To advance on this, the current study will be focused on over the counter medicine. However, cognitive function may override rational behavior and deviate from expected choice (Dixon et al., 2019). This may be due to asymmetry of information or changing priorities. In turn, asymmetry of information is due to the individual not having access to full information, inadequate capacity to process all the information available, simple and sequential processing of information where complex and simultaneous processing of multiple sources of information is required (Fotaki, Roland, Boyd, McDonald, Scheaff & Smith, 2018). Human behavior is thus not infinitely rational. This is what the patient faces in making a choice to visit or re-visit a health facility such as pharmacy or recommend others to a particular health facility. It is important therefore to understand the drivers of healthcare which influences the choice among the patients so that appropriate policies can be developed to improve it (Fotaki et al., 2018). The promotion of healthcare may be required where all the stakeholders should be involved.

1.1.2 Factors Influencing Patient Choice on Over the Counter Medicine

A key concern is the issue of pharmaceutical patents, which places the high costs of Research & Development (R&D) and ultimately high prices to the end product. Studies like Fotaki et al. (2018) and Dixon et al. (2019) have been done in the area of pharmaceuticals affordability, prices, and access. This has led to a shortage of R&D developments that address priority diseases in least and middle income countries (LMICs) as well as impoverished countries paying more for original brands. According to the WHO (2020), in the majority of LMICs, branded medications often cost significantly more than their generic counterparts. Consumers who buy medications privately typically pay 2.6 times more for brand-name products than for the cheapest generics. The price difference can be more than ten times larger in some cases. In response, WHO (2020) recommends that LMICs establish policies to

encourage generic substitution, alongside other interventions such as establishing strategies to expand availability and reduce price for commodities.

However, despite the recommendation, costs of medicines remain relatively high in LMICs, Kenya included (Dixon et al., 2019). Yet, there is still little information on the link between the price of medicines (or perceived affordability) and medicines purchasing behaviour across Kenyan communities. Some of the unique factors cited to majorly influence client choice for medicine include but not limited to: clients' level of understanding of originality of the drug, pattern of choice of pharmaceutical facility, pharmacy personnel, drug efficacy and the socioeconomic status of the patients (Munnaya, Durrant, Fisher, Cherisich & Luchters, 2015). Other factors include potential side effects, the complexity or simplicity of dosing schedules and age of the patient among others (Munnaya et al., 2015). For purposes of this study, three dimensions were considered: clients' level of understanding of originality of the drug, pattern of choice of pharmaceutical facility and pharmacy personnel.

1.1.3 Profile of Pharmaceutical Industry in Kenya

In Kenya, there are 42 companies designated as indigenous manufacturers of pharmaceuticals (Kenya National Bureau of Statistics, KNBS, 2020). These businesses make up a significant Pharma manufacturing hub of approximately 90% of all drug registration requests in Kenya are for generic medications, although there are issues with the standard of generic medications given to Kenyan patients (Nahu, 2016). The drug business in Kenya is affected by territorial and overall turns of events, including the improvement of the neighborhood economy, Kenya's support in provincial and worldwide drug exchange, related innovation progressions, and global endeavors to battle and kill illness (Shaikh & Hatcher, 2015). These factors impact how drug speculations are made and the way that human resources are created, which thus influences how effectively residents might secure vital prescriptions (Munnaya et al., 2015). In Kenya for instance, the target market for local exports of pharmaceutical products is COMESA, EAC, and the rest of Africa in addition to the local demand, where the total market is valued at \$13.6 billion (Ndirangu, 2019). Be that as it may, Kenya is currently only able to export an average of \$63 million worth of products to these regional markets (Nahu, 2016). The Pharmaceutical industry in Kenya, through which the population accesses pharmaceutical brands from, is divided into 3

categories: The public sector, The NGO/Missions sector & the Private Sector (Shaikh & Hatcher, 2015).

The Public sector would include all public and government run institutions and are supplied medicine through a government owned agency called KEMSA. Generally, the parastatal is mandated to procure medicines on behalf of the Government and distribute regionally to all the public Hospital (Grytten & Sorensen, 2019). There are no guidelines as on how medicine prices should be determined in the public sector (Shaikh & Hatcher, 2015). The NGO/Missions sector accounts for 40% of the healthcare providers in the country, although the services including pharmaceutical dispensing are usually subsidized, there lacks a clear pricing control and especially to the outpatient sector (Qian et al., 2018).

1.1.4 Profile of Private Pharmacies in Nairobi

The private sector, which includes makers, distributors, and retailers in the business, contributes most to the Kenyan pharmaceutical market (Ndirangu, 2019). It is predicted to be worth over \$500m and expand at a compound annual growth rate (CAGR) of 11.8% per year (Munnaya et al., 2015). Studies like those by Combi et al. (2019) have demonstrated that the private sector is a more preferred source of medication in Kenya, just like in other sub-Saharan nations, because to factors including dependability, stock availability, and extended operating hours. All of the nation's pharmacies, which total roughly 5,000 registered pharmacies nationwide, fall within the retail sector (Shaikh & Hatcher, 2015).

According to the 2019 census report, Kenya is classified as a lower middle-income country with a population of 47 million people (KNBS, 2020) spending less than \$2 USD per day. According to the Kenya National Bureau of Statistics, the country's GDP was \$98 billion in 2020, while the World Bank estimated that the GDP per capita was 1,838 USD in the same year (KNBS, 2020). Both the public and commercial sectors are included in the Kenyan healthcare system. The public sector has been governed by both the national and county governments since devolution in 2013 For-profit businesses and non-profit organizations make up the private sector (Nahu, 2016). The Kenyan government allocation to health stands at roughly 6%, which is below the regional commitments such as 2001 Abuja agreement which

recommended that governments commit 15% of their national budgets to healthcare. Curative services account for the largest share of the budget with limited financing targeted at preventative and promotive health (Combiér, Zeitlin, De Courcel, Vasseur, Lalouf, Amat & De Pourville, 2019).

Retail Pharmacies have historically been known to mark- up all products at 33%. As an effect of these, the prices for pharmaceuticals have continuously gone up forcing the patient/consumer to weigh their options at the point of purchase. The issue to contain the prices has been a key focus area for the policy makers. This move to contain the prices is geared to containing rising health care costs and specifically pharmaceutical spend (Shaikh & Hatcher, 2015).

1.2 Problem Statement

According to Ranerup et al., (2018), the decision a patient makes when choosing a pharmaceutical product is deeply entwined with various factors, including physical infrastructure, including access to healthcare facilities, counsel from relatives and friends, direction from medical insurance providers, and advice from doctors. But the specific issue is that a significant portion (10.5%) of medicines sold worldwide are subpar or fake (World Health Organization, WHO, 2020). In addition, LMICs bear the bulk of the burden due to inadequate supply-chain management, lack technical ability, and poor pharmaceutical governance (Dixon et al., 2019). According to WHO (2020), one in ten (1 in 10) medical products circulating in African markets is either substandard or falsified. That includes pills, vaccines and diagnostic kits. The highest proportion of substandard and falsified medicines was found in Cameroon (7.1%) (Shaikh & Hatcher, 2015). Kenya is reported to have about 1.0% of substandard and falsified medicines (WHO, 2020). This issue not only threatens patients' choice of medicine but has significant health and economic consequences (Nahu, 2016).

Knowledge gaps in earlier studies are another driving force behind this study. For instance, Twahir (2016) did a descriptive study on the factors influencing patients' decisions regarding the private healthcare facilities in Kenya. However, because the study primarily concentrated on patients' perceptions of quality, it adopted a one-dimensional approach. The findings demonstrated that patients' perceptions of quality had a big impact on the drugs they chose. The level of patient comprehension of the

drug's novelty, consumer preferences for pharmaceutical facilities, or pharmacy staff were not taken into account in the study. Similar to this, Victoor, Delnoij, and Friele (2018) conducted an empirical analysis on the factors influencing patients' decisions regarding healthcare providers in Uganda and discovered that patient and provider characteristics interact in a complicated way to influence patients' decisions. However, the study was focused on healthcare providers and not pharmaceutical products as this study seeks to do. Further, Ndirangu (2019) studied determinants of choice for health care providers in informal urban settlement in Kenya, but the study did not consider pharmaceutical products like medicines.

From the search on available literature such as Ranerup et al., (2018); Nahu (2016); Ndirangu (2019); and Victoor et al., (2018), it appeared that there has been little focus on clients' level of understanding of originality of the drug, pattern of choice of pharmaceutical facility as well as pharmacy personnel and therefore, the findings on available literature led to a knowledge gap. This study therefore sought to fill this gap by looking at how patients' level of understanding of originality of the over the counter medicine, pattern of choice of pharmaceutical facility and pharmacy personnel influence patients' choice for over the counter medicine among private pharmaceuticals in Nairobi county, Kenya.

1.3 Objectives

1.3.1 General Objective

To assess the determinants of patients' choice for over the counter medicine among private pharmaceuticals in Nairobi county, Kenya.

1.3.2 Specific Objectives

- i. To determine the effect of patients' level of understanding on the choice of over the counter medicine.
- ii. To establish the effect of pattern of choice of pharmaceutical facility on the patients' choice for over the counter medicine.
- iii. To examine the role of pharmacy technician competence on the clients' choice for over the counter medicine.

1.4 Research Questions

- i. To what extent does patients' level of understanding influence the patients' choice for over the counter medicine?
- ii. What is the influence of pattern of choice of pharmaceutical facility on the patients' choice for over the counter medicine?
- iii. What is the role of pharmacy technician competence on the clients' choice for over the counter medicine?

1.5 Scope of the Study

The study sought to assess the determinants of patients' choice for over the counter medicine among private pharmaceuticals in Nairobi County, Kenya. To achieve this, the topic was broken down into two parameters, that is to say; dependent variable (choice for over the counter medicine); and independent variables (patients' level of understanding, pattern of choice, competence of the pharmacy technician). The specific objectives informed the research questions. Unit of observation of the study is the 36 registered retail pharmaceutical companies based in Nairobi County. The study used systematic sampling approach to select the pharmacies located within Nairobi's central business district (CBD) for ease access. The study sample size was 200 respondents which was achieved systematically by selecting a starting point from the first ten (10) customers (i.e. customer number 6). Then, from customer number 6 onwards, every 5th person entering the store was selected (that is to say; 6, 11, 16, 21, 26, 31 and so on). The study used semi-structured questionnaire as the key tool for data collection. The study was undertaken between the months of September to November, 2022.

1.6 Significance of the Study

Policy Makers and the Government: The findings of this study may be used by policy makers, including the government and the various legal institutions, to develop the necessary policies and legislation that would permit fair competition in the industry and improve a level playing field for all participants in the retail sector.

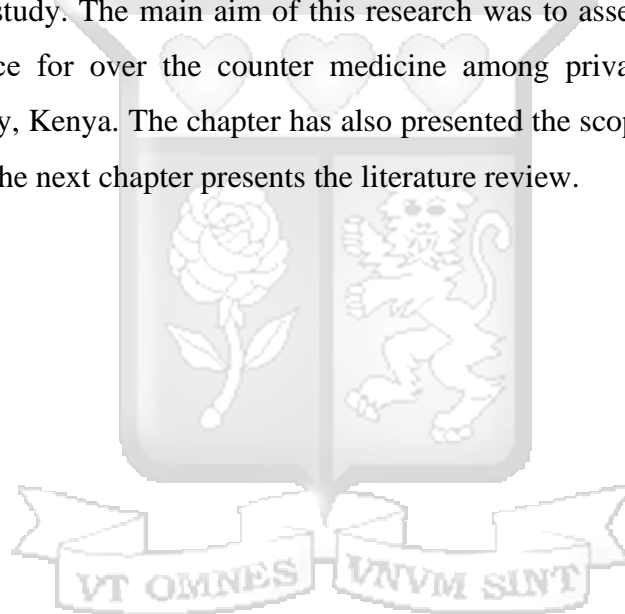
Private pharmaceutical companies: The results of the study may help pharmaceutical businesses create strategies that better match patient and consumer

needs and enable them to create goods that satisfy the needs of various consumer types.

Researchers and Academicians: The study may serve as a reference to other researchers who intend to conduct similar or related studies on patients' choice for medicine in the future because the findings may provide reliable insight that are useful for educational purposes. Therefore, the findings of the present study may provide crucial information that could form the basis for future research.

1.7 Chapter Summary

This chapter has outlined the background of the proposal, problem statement and the reason of the study. The main aim of this research was to assess the determinants of patients' choice for over the counter medicine among private pharmaceuticals in Nairobi County, Kenya. The chapter has also presented the scope and the significance of the study. The next chapter presents the literature review.



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter examined the determinants of patients' choice for over the counter medicine among private pharmaceuticals. It critically evaluated the theoretical and empirical literature guided by three dimensions: patients' level of understanding of originality of the over the counter medicine, pattern of choice of pharmaceutical facility and pharmacy technician and their influence on patients' choice of over the counter medicine. The theoretical foundation, conceptual framework, and actual research gaps in the evaluated literature are also presented in this chapter.

2.2 Theoretical Review

Theoretical review is important in this study since it introduces and discusses the theories that explain why the research problem under investigation occurs. The study was anchored on decision-making theory as discussed below.

2.2.1 Decision-making theory

The theory of decision-making describes how rational people ought to act, in risky and uncertain situations (Dixon et al., 2019). The foundation of the decision-making theory is understanding how people make decisions. The decision-making theory's initial stages make the assumption that the person making the decision has full knowledge of all options available and that the result of a particular decision is known; that the decision maker is sensitive to these options; and finally, that the decision maker makes the decision rationally (Combier, 2018). The ability to rank or order priorities to maximize profit and/or minimize risk or loss is implied by the concept of rationality.

These assumptions act as the establishment for a wide assortment of dynamic varieties, subsidiaries, and related hypotheses (Afolabi, Irinoye and Adegoke, 2017). In the presence of choices, objective coordinated conduct is connected with choice hypothesis. Settling on choices includes finding some kind of harmony among

practicality and allure. Not entirely settled by culture, yet practicality and limit are impacted by information (Afolabi, Irinoye and Adegoke, 2017). Deficient data is much of the time present when choices are being made. Consequently, relevant and individual changes are essential variables to consider while simply deciding. This hypothesis contributes to the current study because it explains how patients, physicians, medical insurance providers, and hospital leadership decide which healthcare facility to use in the future and how likely they are to recommend the hospital to others. The theory was used to explain and to support all predictor variables of patients' level of understanding of originality of the medicine; pattern of choice of pharmaceutical facility; and pharmacy technician.

2.3 Empirical review

2.3.1 Patients' level of understanding of originality of the over-the-counter medicine

The provision of information and education, particularly in the areas of equivalence, regulation, and dispelling myths regarding generic medications (such as the belief that they are counterfeits), is crucial for strengthening confidence in medicine originality, such as generic or branded drugs, (Quian et al., 2019). Additionally, patients' personal skepticism of generic medications frequently prevails over their faith in their doctor. In order to encourage the use and acceptance of generic medications in the future, Nahu (2016) claimed that improving doctors' perceptions of generics may be particularly important.

In some United Arab Emirates' emirates, Sharif, Chaar, Albadrani, and Shahwan (2016) conducted a cross-sectional study to assess patients' levels of knowledge and attitudes regarding generic medications. Patients from three Emirates made up the target population. A 23-item survey that was created, pre-validated, and given out. Out of 120 patients, 96 completed the questionnaire in full, yielding an 80% response rate. The vast majority of patients were educated young Arab women. The review results from patients show that they have restricted understanding and view of nonexclusive prescriptions. They experienced difficulty picking a drug since they didn't see what nonexclusive or brand prescriptions implied. The review presumed

that patients' information on innovation of medication, for example, conventional medications was poor.

The study recommended that efforts are needed to increase public awareness of generic drugs and possible brand substitution. According to the study both the prescribing physician and the dispensing pharmacists have an essential role to play in educating their patients of generic drugs. The study sample size (96 patients) was too small for this study and may have presented sampling bias. The sample ought to have been sufficient enough for a substantive conclusion. The context of the study which is the UAE also makes it difficult to apply the conclusions in Kenyan context because of the differences in business environments.

Qian (2018) conducted a descriptive study on the factors affecting patients' choice of malaria drugs in China. A sample size of 301 participants were involved that were selected using systematic random sampling. Data was collected using a questionnaire, cleaned and entered into STATA version 14. Both descriptive and inferential statistics were used to analyze the data. Multiple regression analysis was used to determine the relationship between the choice of medicine and explanatory variables. The discoveries laid out that the decision of drug drugs relies upon a few factors like instruction and accessibility of data as well as financial viewpoint in spite of the fact that cash assumes a negligible part.

The study established that, those who did not have any knowledge about medicine self-medication options. Those with sufficient knowledge visited the specialists more. The study took a one dimensional approach by only focusing on malaria drugs and did not consider other medicines. This may pose a challenge in generalizing the findings to other studies with a wider scope. The target population is also not clear from the study which makes it difficult to derive a true sample size.

A case study conducted by Twahir (2017) examined the relationship between patients' choice of medicine and availability of medicine information. A semi-structured questionnaire based on knowledge and exposure to counterfeit drugs was used to collect quantitative data in Congo. A sample size of 100 registered doctors was arrived at. The findings showed that amount of information that is available for a patient has a positive correlation with choice of medicine. This supports the views of

Sharif et al., (2016) that the level of understanding of originality of the medicine by respondents prefers branded medicine to generic medicine. The findings of this study are useful to the current study as they can be used to complement the findings of the current study however; using a case study makes the scope too narrow. It becomes a challenge to apply the conclusions on other studies due to differences in operating environments, organizational policies and business regulations. The context is also different (Congo) from the Kenyan context and the conclusions of the study may not be applicable to Kenyan context.

According to Sharif et al., (2016) there is a growing cognizance that patients can and should play an important role in deciding their own care, in defining optimal care, and in improving healthcare delivery. Well known ideas like patient-focused care, patient strengthening, and patients as accomplices, shared navigation, and educated decision represent the liberation regarding patient. Twahir (2017) battled that decision isn't really something worth being thankful for in medical care; in any case, that doesn't refute the meaning of decision.

Ndirangu (2019) examined the effect of patients' knowledge of antibiotics on drug resistance in Kenya. Exploratory research design was applied to gather qualitative data. Two separate interview guides designed and the interviewer administered one to patients and another to pharmacists. A binary variable 'correct understanding' was created and multiple logistic regression analysis was used to identify factors associated with knowledge and willingness to accept generic medicine substitution. Statistical analyses were performed by SPSS version 19.0. The study used independent chi-square test to test whether to agree or reject null hypotheses. The study findings showed that un-informed patients are less likely to seek professional health care compared to their informed counterparts.

The study concluded that patients with low health literacy are more likely to have worse health choices overall and adverse health behaviors, such as: lower engagement with health services. The findings of this study may be used to support the results of the current work however, the study lacked a sample size – it is not clear how many participants took part in the study. This poses the issue of credibility and reliability of the findings. It would have been proper if the author had calculated a clear sample size to avoid sampling bias. Further, the study applied SPSS calculator, a statistical

software platform version 19.0 which is outdated. There are much current versions such as SPSS 25.0. Using outdated version may have presented wrong conclusions.

2.3.2 Pattern of choice of pharmaceutical facility

A cross sectional study by Thawani and Gharpure (2016) studied the factors influencing patient choice of pharmaceutical care and evaluate patient satisfaction with pharmaceutical care provided by Slovak community pharmacies, with respect to region. A cross-sectional study was carried out from October to December 2019 on the basis of an anonymous questionnaire survey, including three dimensions of pharmaceutical care (Managing therapy, Interpersonal relationship, General satisfaction, a total of 29 items) with 5-choice Likert scale. The survey covered a total of 421 respondents from the Bratislava Region and 2,423 respondents from other Slovak regions (a total of 23 cities and 33 community pharmacies).

The study established that the statistically significant reason for pharmacy visit was the need to purchase over-the-counter medications and dietary supplements for respondents from the Bratislava Region and the factors influencing their choice of pharmacy were pharmacy location and convenient working hours. Despite the regions, the respondents have revealed high fulfillment with drug care and all out fulfillment. Taking everything into account, the review laid out that accessibility of drug office and fulfilled patients are fundamental for patients' decision for drug care.

The context of the study is different from the Kenyan context which the current study intends to focus on. Slovakia ranks 29th in the World Index of Healthcare Innovation, with an average prevalence of substandard/Falsified (SF) medicines at 12.1% compared to Kenya's average prevalence of SF medicines at 19.1%. Therefore, this makes it difficult to apply the conclusions in Kenyan context in totality.

Afolabi (2017) did a descriptive study to identify the factors that contribute to patient's choices of a pharmaceutical facility and the importance of each factor. A mixed-method approach was used to collect quantitative and qualitative data in two phases. The study was conducted in a pharmaceutical store. Qualitative data were collected by face-to-face semi-structured interviews of a sample of 22 managers and heads of outpatient wards. The self-administered questionnaire designed for this study collected quantitative data from a stratified random sample of 381 patients referred to

this clinic. The qualitative data were analyzed by a system of coding, while parametrical statistical analyses were conducted to analyze the quantitative data using the independent-samples t-test and ANOVA in SPSS software, version 19.

The findings showed that the most significant contributing factors to attract patients were the physicians and employees and the clinic's environment. However, the scope of the study was too narrow (22 participants) and this may have presented sampling bias. Therefore the conclusions of the study should be applied carefully as they cannot be fully applied to the current scenario.

A content analysis by Adhikari and Rijal (2017) examined the impact of pharmaceutical facility on patients' choice for type of medicine. The author conducted an extensive empirical analysis including electronic search of 14 databases. The study included studies examining the efficiency, feasibility and reliability of pharmaceutical facility. Source of data was publications whereby content analysis was used to analyse the published data.

The study established that the accessibility of the pharmaceutical facility influenced patients' choice of medicine. The findings also found that the status of pharmaceutical facility before and after the admission is likely to influence this perception and patients' future behavioral intention. The study was rather not clear on the time span of the sources used for analysis. This leaves a gap on the authenticity of the findings. It would have been better if the study stated the timeframes of the publications used. Target population was also lacking in the study and this makes it a challenge to use the results to support the findings of the current study.

Further, the study argues that an anticipated but unexplained complication of an illness may sour a patient's experience and judge the medicine to have had poor technical outcome. I have a different view based on the earlier findings of Adhikari and Rijal (2017) that, whereas technical quality seems by far to be the most important; some of its attributes may delight patients others may cause dissatisfaction and still others may have no impact on the patients' choice of the type of medicine: generic or branded. Similarly, Sliwa et al., (2016) contends that medical equipment in itself may have a razzmatazz impact on patients more than the utility impact of the medical equipment. Thus, a patient may be awed by a modern looking imaging equipment that

the patient interacts with than a true high-end laboratory equipment that the patient may never see.

2.3.3 Competence of Pharmacy Technicians

Pharmacy technicians are medical professionals who work alongside pharmacists to help and support patients and make sure they get the best care. Pharmacy technicians can work in places like community (retail) pharmacies; hospital pharmacies; pharmaceutical production or sales in the pharmaceutical industry; prisons; and primary care, education, military, or veterinary practices (Adhikari & Rijal, 2017). Patients rely on their previous healthcare experiences when deciding where to receive care. According to Afolab et al., (2017) this seems to apply to those patients who can choose. However, Qian, Pong and Yin (2019) argued that certain patient groups such as more highly educated and younger patients, patients with higher incomes and patients without an existing (satisfactory) relationship with a provider make an active choice more often. However, pharmacy technicians, participating in the medication reconciliation process represents a new professional role that may change the pharmaceutical sector for the betterment of services given to the patients.

A descriptive study conducted by Shaikh and Hatcher (2015) examined the role of pharmacy technician on the effectiveness of patients' prescriptions. The study targeted regular customers of a store and pharmacy technician. 100 participants were interviewed using a questionnaire guide. Qualitative data was analysed using inferential statistics. The findings indicated a reduction in omitted medication incident reports after the pharmacy technician was introduced, which is supported by the literature (Qian, Pong & Yin, 2019).

According to Shaikh and Hatcher (2015) the pharmacy technician is able to source medication via routes that may require knowledge of the hospital formulary or even prior knowledge of various routes of requisition, such as the on-call pharmacist. Qian, Pong and Yin (2019) argued that this in turn leads to fewer medicines being omitted. Pharmacy technicians add value to the nursing team by expanding the skill mix and show a reduction in omitted doses. In addition, they help address persistent staffing issues and ensure better use of nursing time. As much as the findings of this study could be applied on the current scenario, the author took a one dimension approach to

focus on medicine prescription and not the patients' choice of medicine such as the current study intends to. This leaves a knowledge gap which the current study will address by examining the role of pharmacy technician on patients choice of medicine.

A qualitative study was conducted by Nahu (2016) as part of the Swiss national quality improvement programme progress! Medication Reconciliation which aimed to promote medication reconciliation in acute care hospitals in Switzerland. The programme was designed and led by the Sanitary and Phytosanitary Measures (SPS). One of the cornerstones of the programme was to test the feasibility of performing the first step of medication reconciliation, namely obtaining a Best Possible Medication History (BPMH) at admission. Eight healthcare facilities participated in the programme. Each facility committed itself to defining and testing a new process for obtaining a BPMH on a designated internal medicine 'pilot unit'. The new process had to be based on quality standards as defined by the programme.

Twenty-one semi structured interviews with six pharmacy technicians, two pharmacists, six members of the nursing staff, five physician residents and two senior physicians were conducted in the two hospitals. The interviews took place during a 2-day site visit from the SPSS programme team at 6 months after implementation of the new processes. Participants were purposely sampled to represent members of all professional groups who are affected by the new BPMH process, that is, pharmacy technicians, pharmacists, physicians and nurses. All analyses were performed by using the software ATLAS.ti V.7. A conventional qualitative content analysis approach was applied.

Findings showed that the pharmacy technicians' new role had impacts on the daily work of each professional group. The results also demonstrate that there was a shift of workload from physician residents and nurses to pharmacy technicians and pharmacists. First of all, the context of the study (Switzerland) presents different operating business environment such as policies and regulations which might not be practical on the Kenyan context. This makes it difficult to use the findings to paint a picture of what is happening in Kenyan context

Similarly, a meta-analysis done by Munnaya et al., (2015) was aimed to determine if a follow-up telephone call or letter influences the return rate to the pharmacy of first-

time patients filling a prescription from a visit to the Clinical Care Classification (CCC). The study analysed publications and medical records. The study established that performing a follow-up intervention in the form of a telephone call or a mailed letter has a positive impact on patient return rate to the pharmacy for subsequent prescriptions with a few patients even returning multiple times after their initial visit.

According to the study, the telephone calls seemed to have a higher impact on patient's choice for medicine than did the mailed letters. The findings are supported by Qian, Pong and Yin (2019) that this could be due to the increased personal connection when actually speaking with the caller rather than just reading a letter. Compared to other health care providers involved in the prescribing process, pharmacists have the training, expertise, and knowledge of various aspects of the pharmacy workflow to be able to handle questions and issues that may arise during a follow-up intervention.

2.4 Conceptual Framework

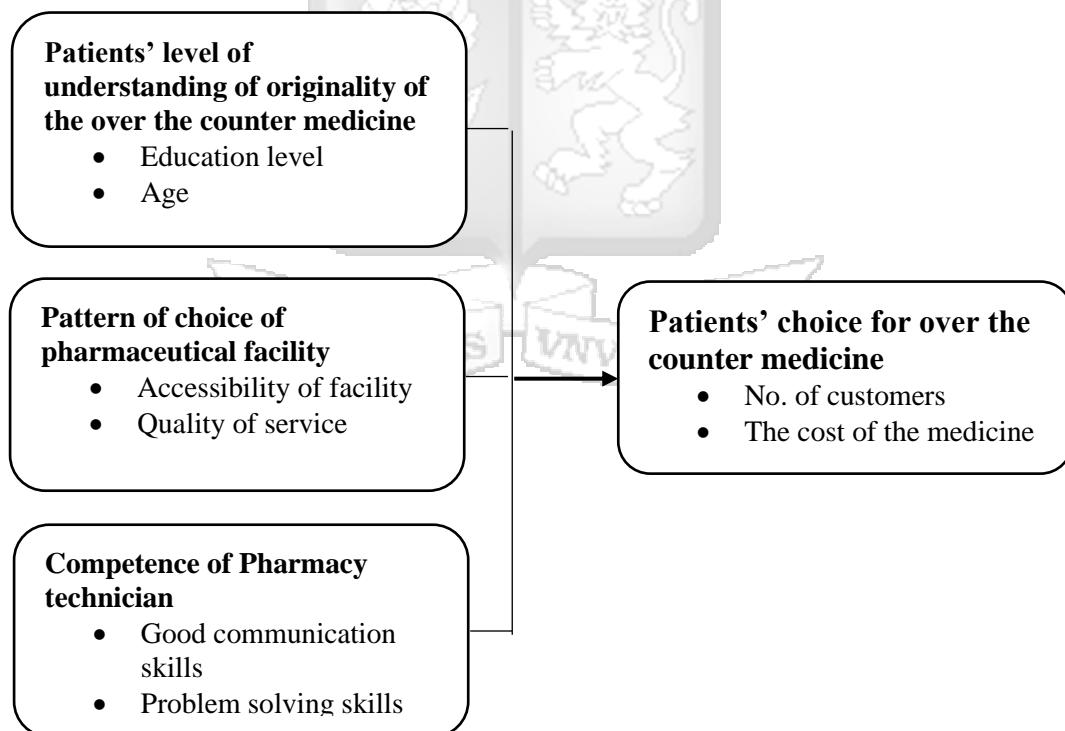


Figure 2.1: Conceptual framework
Source: Author (2022)

2.1 Operationalization of the Variables

Variable	Measure/Indicators	Measurement scale	Analysis
Patients' level of understanding of originality of the over the counter medicine	<ul style="list-style-type: none"> • Education level • Age 	5-point Likert scale	Descriptive/ inferential
Pattern of choice of pharmaceutical facility	<ul style="list-style-type: none"> • Accessibility of facility • Quality of service 	5-point Likert scale	Descriptive/ inferential
Competence of Pharmacy technician	<ul style="list-style-type: none"> • Good communication skills • Problem solving skills 	5-point Likert scale	Descriptive/ inferential
Patients' choice for over the counter medicine	<ul style="list-style-type: none"> • No of customers • The cost of the medicine 	5-point Likert scale	Descriptive/ inferential

Source: Author (2022)

2.2 Summary of Research Gaps

Author(s)	Context and Focus	Key Findings	Research Gap	Focus of the current Study
Sharif, Char, Albadrani, and Shahwan (2016).	Evaluation of patients' level of knowledge and perceptions of patients towards generic medicines in some Emirates of the United Arab Emirates.	<p>Patients have poor knowledge and perception of generic medicines.</p> <p>Patients did not clearly understand the meaning of generic or brand medicines and this negatively influenced their choice of medicine.</p>	<p>The study sample size (96 patients) was too small.</p> <p>The context was also different (UAE) from the current research which will be conducted in Kenya.</p>	<p>The current study focuses on a larger sample size (4 pharmaceutical companies) to avoid sampling bias.</p> <p>The Kenyan context will be the focus.</p>
Qian (2018)	Factors affecting patients' choice of malaria drugs in China.	Patient's choice of pharmaceutical drugs depends on several factors such as	The study took a one dimensional approach by only focusing on malaria drugs and did not consider other	The study will focus on both generic and branded.

		<p>education and availability of information as well as economic aspect although money plays a minimal role.</p> <p>The study established that, patients who did not have any knowledge about medicine self- medication options. Patients with sufficient knowledge visited the specialists more.</p>	<p>medicines.</p> <p>Target population and sample size not stated.</p>	
Twahir (2017)	The relationship between patients choice of medicine and availability of medicine information	Amount of information that is available for a patient has a positive correlation with choice of medicine.	<p>This was a case study which makes the scope too narrow. It becomes a challenge to apply the conclusions on other studies due to differences in operating environments, organisational policies and business regulations.</p> <p>The context is also different (Congo) from the Kenyan context and the conclusions of the study may not be applicable to Kenyan context.</p>	Focus on larger sample size of registered pharmaceutical companies in Kenya to avoid sampling bias.
Ndirangu (2019)	Effect of patients' knowledge of antibiotics on drug resistance in Kenya.	<p>Un-informed patients are less likely to seek professional health care compared to their informed counterparts.</p> <p>Patients with low health literacy are</p>	The study lacked a sample size – it is not clear how many participants took part in the study.	Target population is well defined: registered pharmaceutical companies in Kenya where sample size will be derived.

		more likely to have worse health choices overall.		
Thawani and Gharpure (2016)	Factors influencing patient choice of pharmaceutical care and evaluate patient satisfaction with pharmaceutical care provided by Slovak community pharmacies, with respect to region.	<p>Statistically significant reason for pharmacy visit was the need to purchase over-the-counter medications and dietary supplements.</p> <p>Availability of pharmaceutical facility and satisfied patients are essential for patients' choice for pharmaceutical care.</p>	<p>The context of the study is different from the Kenyan context which the current study intends to focus on. Slovakia ranks 29th in the World Index of Healthcare Innovation, with an average prevalence of substandard/Falsified (SF) medicines at 12.1% compared to Kenya's average prevalence of SF medicines at 19.1%. Therefore, this makes it difficult to apply the conclusions in Kenyan context in totality.</p>	The current study will focus on local pharmaceutical companies
Afolabi (2017)	The factors that contribute to patient's choices of a pharmaceutical facility and the importance of each factor.	Most significant contributing factors to attract patients were the physicians and employees and the clinic's environment.	The scope of the study was too narrow (22 participants) and this may have presented sampling bias. Therefore the conclusions of the study should be applied carefully as they cannot be fully apply to the current scenario.	The research will be based on a larger sample size to avoid sampling bias.

Source: Author (2022)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the methodology that was utilized to carry out this study with the aim of addressing the primary objectives that have been specified. Research philosophy discussed the angle from which the study was undertaken (positivist philosophy). The study design discussed the descriptive design as applied on the study. Population and sampling presented the unit of analysis as well as unit of observation respectively. The chapter also discussed the data collection method which was mainly done using a questionnaire. Reliability of research instruments basically discussed the quality of the study in terms of validity and reliability and how this was achieved. Lastly, the chapter discussed the analysis methods applied in the study and this was done using descriptive as well as inferential statistics.

3.2 Research Philosophy

Philosophy is the angle at which a researcher looks at the research problem (Mimura, 2017). There are two common angles of research philosophy: positivism and interpretivist. Positivists claim there is a single, objective reality that can be observed and measured without bias using standardized instruments (Mimura, 2017). Interpretivists accept that there is a reality but argue that it cannot be measured directly, but perceived by people differently through the lens based on their prior experience, knowledge, and expectations (Afsar & Badir, 2017). This study was informed by positivist philosophy which presupposes that the study's surroundings and occurrences are objective, external and independent to the researcher and thus a deductive approach is most appropriate in carrying out the study (Afsar & Badir 2017).

3.3 Study Design

Research design is the plan for data collection, measurement and analysis. It is an outline strategy that a researcher uses to come up with solutions to study challenges (Mugenda & Mugenda, 2013). A descriptive research design was used for this study

to enable the researcher to measure the determinants of patients' choice for over the counter medicine among private pharmaceuticals in Nairobi County. This approach was appropriate because of the interest in the "what" and "how does" of the research question (Ambali, 2017). The questions are as follows: (i) to what extent does patients' level of understanding of originality of the medicine influence the patients' choice for over the counter medicine? (ii) what is the influence of pattern of choice of pharmaceutical facility on the patients' choice for over the counter medicine? (iii) what is the role of pharmacy technician on the clients' choice for over the counter medicine? In view of this, a quantitative approach was used to collect data in order to address the research questions.

3.4 Population

The total number of businesses, people, or items included in a study is known as the target population (Mugenda & Mugenda, 2013). The 3170 retail pharmacies registered with the Pharmacy and Poisons Board (Cytonn 2021) within Nairobi County made up the study's population. To identify this population, the researcher gained access to directory of Pharmacy and Poisons Board (2021) where the board has listed all pharmacies licensed to operate within the Nairobi County.

3.5 Sampling

Sample size is the number of units or persons that are chosen from which data will be gathered. Mugenda & Mugenda (2003) proposed a sample size of between 10% -30% of the target population as a good representation. Based on this, the study used Yamane formula to get a sample size of 36 retail pharmacies registered under the Pharmacy and Poisons Board as shown below:

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

Where n is the sample size, N is the population size, and e is the level of precision.

Therefore; $n = 3170 / \{1 + 3170 (0.05)^2\}$

$$n = 355.18 \times 10\%$$

n = 35.51

To get the 36 pharmaceutical stores, the study concentrated on those pharmacies located at the central business district (CBD) for easy access (see Appendix 2). This was done following systematic sampling approach to ensure all the pharmacies had an equal chance to be considered for this study. To execute this, all pharmacies located at the CBD were listed (on excel sheet) and assigned a number between 1 and 3170 whereby the researcher selected every 88th (that is to say; 88, 176, 264, 352, 440, 528...and so on) to achieve 36 pharmaceutical stores.

Further, using systematic sampling technique, 200 customers from the 36 sampled pharmacies (Appendix 2) were surveyed. This meant that each pharmacy produced about 6 participants. This was achieved by focusing on walk-in customers who walked into the pharmacy for over-the-counter medicine. To achieve this, the researcher systematically selected a starting point from the first ten (10) customers (i.e. customer number 6). From customer number 6 onwards, every 5th person entering the store was selected (6, 11, 16, 21, 26, 31and so on), to achieve the sample size of 200 participants. The reason for using systematic sampling approach was to ensure that each customer who entered the pharmacy outlet during the time of the study had an equal chance of being selected and this helped in minimizing sampling bias.

3.6 Data Collection Method

This study used quantitative data. To achieve this, the study used a structured questionnaire with closed ended questions for quantitative data collection because they were easy to administer, ensured confidentiality, saved on time and convenient for collecting information from a larger sample (Bezuidenhout & Schultz 2016; Brohi & Jantan, 2017). The main reason for using a structured questionnaire in this study was to collect quantitative data to address the specific objectives of this study. It also ensured a greater feeling of anonymity hence encouraging open responses to sensitive questions and was free from bias which led to accurate and valid data.

The questionnaire consisted of four (4) sections: section A gathered demographic data such as age of the participants, gender, education levels as well as well as monthly income; sections B through to section D collected data on the effect of the three

determinants of patients' choice for over the counter medicine: level of understanding of originality of the over the counter medicine; pattern of choice of pharmaceutical facility; and pharmacy technicians. In this section of the questionnaire, a Likert scale approach was used on a scale of 1-5 where; 5 (Strongly Agree), 4 (Agree), 3 (Neutral), 2 (Disagree) or 1 (Strongly Disagree).

3.7 Reliability of Research Instruments

Reliability is the degree to which a test is conducted using a research tool and consistently produces the same results on the same subject (Walton, 2017). The test-retest approach was used in this study to ensure the reliability of the research tools. This was achieved by giving the same test to the same group more than once (Kothari, 2007).

3.8 Validity of Findings

Mugenda and Mugenda (2003) defined validity as the precision and importance of conclusions drawn from study results. It refers to how closely the results of the data analysis represent the variables under examination. Triangulation and crosschecking (validation and or verification) were employed throughout data analysis to verify instrument validity, which boosted data validity and dependability.

3.9 Data Analysis

Data analysis involves actions and methods performed on data that help describe facts, detect patterns, develop explanations and test hypotheses (Munro & Thanem, 2018).

Quantitative data collected by use of structured questionnaires was coded, edited and any data requiring cleaning was carried out before any further analysis took place. The quantitative data was then be uploaded into the Statistical Program for Social Sciences (SPSS) version 25 for processing the quantitative data. SPSS offers a broad range of highly flexible statistical models adequate for data analysis requirements of this study (Brohi & Jantan, 2017).

Data was analysed using descriptive as well as inferential statistics. Mean scores and standard deviations for predictor variables were derived. Mean scores showed the

ranking of the various determinants of patients' choice for over the counter medicine, this indicated the aggregate relative effect of each variable on patients' choice for over the counter medicine. Standard deviation showed the variation among respondents.

Inferential statistics were used whereby the general model adopted was the regression analysis. Pearson's correlation coefficients was used to establish the degree to which the study variables were linearly related. Multiple regression was used to measure the relationship between the independent variables and patients choice for medicine (Munro & Thanem, 2018).

Multiple linear regression model was as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Dependent variables (Y) Patients' choice for over the counter medicine

Independent variables:

X₁ (patients' level of understanding of originality of the over the counter medicine),

X₂ (pattern of choice of pharmaceutical facility),

X₃ (Competency of pharmacy technician),

B₁- β₃ = Coefficients of determination,

ε was the error term denoting there may be a non-linear relationship between the independent and dependent variables which is referred to as "noise". The regression model equation will be illustrated as follows:

3.10 Ethical issues

Any form of research must be governed by ethics. When conducting research, a researcher is required to adhere to certain legal standards, which are referred to as ethics (Munro & Thanem, 2018). Before beginning the data collection procedure, the researcher sought an introduction letter from Strathmore Business School (SBS) as part of the ethical requirement for each project.

Participants signed a consent form before participation. Participants also got notified on the time estimate for completing the surveys. The ability to leave the study at any time with no negative repercussions was made clear to participants.

Participants were also given the assurance that the data they supplied was private and that the researcher won't divulge their identity.



CHAPTER FOUR RESEARCH FINDINGS

4.1 Introduction

This chapter covers the study's findings, which were intended to assess the determinants of patients' choice for over the counter medicine with a particular emphasis on private pharmaceuticals in Nairobi County, Kenya. The examination of the findings informed by questionnaire responses was covered in the chapter. The analysis was broken down into the following sections: - The first section (Section A) looked at the response rate and the demographic characteristics of the respondents; the second section (Section B) looked at the patients' level of understanding of originality of the over the counter medicine. The effect of pattern of choice of pharmaceutical facility on the patients' choice for over the counter medicine was examined in Section C. While section D detailed the competence of pharmacy technician on the clients' choice for over the counter medicine. The final section (Section E) conducted a regression analysis to ascertain the association between the independent variables and the choice for over the counter medicine (the dependent variable).

4.1.1 Response Rate

This section tried to determine the real sample size of respondents who participated in the questionnaire answer as well as the total number of successfully completed questionnaires (Table 4.1).

Table 4.1: Response Rate

Sample Size	200
Participants available	200
Total response	188
Non – response bias	6%
Usable responses	188
Un – usable responses	12
Usable responses rate	94%

Based on the results in Table 4.1, 200 questionnaires were distributed to 200 participants who were expected to take part in the study. 188 questionnaires were successfully completed and were used for analysis while 12 of the questionnaires were treated as Unusable responses or spoiled. When there is a distinction between returned and usable surveys, Baruch (2018) advises researchers to use the quantity of usable replies as the numerator when computing reaction rate. In keeping with this, this study had 94% response rate achieved as follows: $r = \frac{188}{200} \times 100 = 94$ (where r is response rate).

Mugenda and Mugenda (2013) state that a response rate of 50% is sufficient for analysis and reporting, a rate of 60% is good, and a rate of 70% or more is exceptional.

4.1.2 Internal Consistency of the Instrument

Internal consistency checks were performed using Cronbach's formula to make sure the results of the questionnaire were reliable as well as valid. To achieve this, a Likert scale was created with 5 questions on 5-point Likert items ranging from "strongly disagree" to "strongly agree" in order to determine whether the questions drafted for the questionnaire accurately measured the same latent variable. Twelve people made up the sample size for the Cronbach's alpha test. The reliable value that was acceptable is 0.7.

Cronbach's alpha statistic: $\alpha = \frac{N \cdot r}{1 + (N-1) \cdot r}$

Where; N = number of items; and r = average inter-item correlation among the items.

Table 4.2: Reliability Statistics

<i>Cronbach's Alpha</i>	<i>Cronbach's Alpha Based on Standardized Items</i>	<i>No. of Items</i>
0.734	0.769	5

Table 4.2 shows that the overall Cronbach's Alpha coefficient for the data collection tool was 0.769 which indicates a high level of internal consistency for the research tool.

Table 4.3: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q1	16.31	8.629	0.195	0.477	0.730
Q2	16.19	7.096	0.073	0.578	0.713
Q3	15.63	10.783	0.403	0.391	0.743
Q4	15.50	6.400	0.017	0.363	0.791
Q5	15.06	9.263	0.178	0.180	0.727

Based on Table 4.3, the results indicate that the items in the test are highly correlated. This goes to mean that removal of any question from the tool, except question 4, would result in a lower Cronbach's alpha. Therefore, the questions were sufficient and valid for the study. It also meant that removal of question 4 would have led to a small improvement in Cronbach's alpha, further, Table 4.3 reveals that the "Corrected Item-Total Correlation" value for variable 4 was low (0.017). This might have led the researcher to re-consider removing that particular question.

4.2 Respondents' Demographics

This section analysed the sample characteristics in four categories: gender, age, level of education as well as average monthly income.

4.2.1 Frequency Distribution of Respondents' Demographics

Table 4.1 presents the results for distribution of respondents' background:

Category	Frequency	Percent
Gender		
Female	112	59.6
Male	76	40.4
<i>Total</i>	<i>188</i>	<i>100.0</i>
Age		
18-22 years	10	5.3
23-27 years	4	2.1
28-32 years	14	7.4
33-37 years	30	16.0
38-42 years	70	37.2

Above 43 years	60	31.9
<i>Total</i>	<i>188</i>	<i>100.0</i>
Level of Education		
Bachelor's degree	96	51.1
Diploma	66	35.1
Masters	26	13.8
<i>Total</i>	<i>188</i>	<i>100.0</i>
Respondents' Average Income		
10,001-20,000	36	19.1
20,001-30,000	68	36.2
30,001-40,000	18	9.6
40,001-50,000	34	18.1
5,000-10,000	32	17.0
<i>Total</i>	<i>188</i>	<i>100.0</i>

Table 4.4: Frequency Distribution of Respondents' Demographics

Based on the results in Table 4.4, it was revealed that, out of 188 participants engaged during the study, the bulk of respondents (37.2%) were between the ages of 38 and 42 years, followed by those with over 43 years of age (31.9%). 16% of the respondents were between the ages of 33 and 37 while just 2.1% of responders were between the ages of 23 and 27 years. These results suggest that the bulk of the patients seeking over the counter medicine in the study area were members of a young generation in their 30s and 40s, an age group that accounts for 75% of Kenya's population according to the KNBS (2019).

This could likewise imply that Kenya's work market and especially the pharmaceutical industry is significantly dominated by youthful generation. The 2019 Kenya public populace and housing statistics report shows that 75% of the 47.6 million populace is younger than 35 (KNBS, 2019). Age was important to this study because different age groups have different levels of understanding of medicine and this could have effect on patients' choice for over the counter medicine.

The findings as presented in Table 4.4 revealed that more than half of the respondents (59.6%) in the study area were female. This could suggest that majority of the patients seeking over the counter medicine in the study area during the time of this research were women. This could also imply that women in the study area dominated the pharmaceutical industry thus breaking the bias by taking up roles that were formerly

dominated by men. Gender was particularly important in this study because men and women patients have different rates of contact with health professionals and this could influence the patients' choice for over the counter medicine.

Further, as presented in Table 4.4, more than half (51.1%) of the participants had a bachelor's degree followed by diploma holders (35.1%). Further, the results reveal that only 13.8% of the participants engaged were master's level. This suggests that most of the patients in the study area were literate persons who can process information regarding over the counter medicine and make deliberate choices.

Based on the results as shown in Table 4.4, majority of the participants (36.2%) were earning between Kshs 20,001 and Kshs 30,000 at the time of this study. This was followed by 19.1% of those who were earning between Kshs 10,001 and Kshs 20,000. Only 9.6% of the respondents were earning an average income of between Kshs 30,001 and Kshs 40,000. The findings suggest that majority of the respondents in the study area were low income earners. Average income levels would affect the patients' choice for over the counter medicine.

4.3 Descriptive Statistics

The study assessed the determinants of patients' choice for over the counter medicine with special focus on private pharmaceuticals in Nairobi County, Kenya. The descriptive statistics specifically the mean scores, percentages as well as frequencies were used to summarize the outcome variables in the study. To do this, a 5 point Likert scale was used where respondents were asked to indicate the extent to which they agree or disagree with the indicators provided. The responses were coded, and each instance of agreement or disagreement was rated from 1 to 5: (5-strongly agree, 4-agree, 3-neutral, 2-dispute, and 1 strongly disagree). Descriptive statistics was generated through SPSS version 25 and the output illustrated in tabular form output:

4.3.1 Descriptive analysis of the effect of patients' level of understanding of originality of the over the counter medicine, on the patients' choice for medicine.

The study investigated the effect of patients' level of understanding of originality of the over the counter medicine, on the patients' choice for medicine. The respondents

rating on the 5 point Likert scales was analyzed using the mean scores and results are presented in Table 4.5:

Table 4.5: Patients’ Level of Understanding of Originality of the Over the Counter Medicine - Descriptive Statistics

<i>Indicator</i>	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std. Dev</i>
I prefer to purchase a brand of over-the-counter medicine that I have previously purchased.	188	1	5	2.43	0.997
I always buy the same brand of over-the-counter medicine.	188	1	5	3.72	1.069
I am willing to pay more for an over-the-counter medicine I have had a good experience with.	188	1	5	4.04	0.826
I will buy different brands of over- the- counter medicine because I want variation.	188	1	5	3.52	1.102
I like considering its country of origin while I purchase an over the- counter medicine.	188	3	5	4.43	0.678
I use country-of-origin as a reference to evaluate quality of an over the- counter medicine among brands.	188	3	5	4.05	0.765
I will purchase over- the- counter medicines from certain country to enhance my self-image.	188	1	5	3.79	1.113
I am very concerned about the price of the over-the- counter medicine.	188	1	5	3.89	1.079
I will continue buying over- the- counter medicine which I know so far even though it increases its price	188	1	5	3.52	1.102
Valid N (listwise)	188				

The results in Table 4.5 shows that majority of the respondents (mean =4.43) (SD= 0.678) reported that they consider the country of origin of medicine while they make a purchase on an over the- counter. This denotes that patients in the study area have self-scepticism of generic medications when purchasing over the counter. The findings also show that a relatively high number (mean=4.05) (SD=0.765) of respondents use country-of-origin as a reference to evaluate quality of an over the-counter medicine among brands. This implies that the patients’ knowledge of originality of medicine in the study area was good. This also confirms high education levels among the patients and availability of information within the study area.

It is also important to note that a sizeable number of the respondents (mean =4.04) (SD=0.826) were willing to pay more for an over-the-counter medicine which they have had a good experience with. This could suggest that patients with sufficient knowledge visited the specialists more.

The discoveries are predictable with a contextual investigation led by Twahir (2017) who inspected the connection between patients' decision of medication and accessibility of medication data. The investigation discovered that measure of data that is accessible for a patient has a positive relationship with decision of medication.

4.3.2 Descriptive analysis of the effect of pattern of choice of pharmaceutical facility on the patients' choice for over the counter medicine.

The study investigated the effect of pattern of choice of pharmaceutical facility on the patients' choice for over the counter medicine. The respondents rating on the 5 point Likert scales was analyzed using the mean scores. The results are presented in Table 4.6:

Table 4.6: Pattern of Choice of Pharmaceutical Facility - Descriptive Statistics

<i>Indicator</i>	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std. Dev</i>
I am very concerned about the price of the over-the-counter medicine.	188	1	5	3.89	1.079
I will continue buying over-the-counter medicine which I know so far even though it increases its price	188	1	5	3.52	1.102
I decide to buy over-the-counter medicine upon pharmacist's recommendation.	188	1	5	3.26	1.258
I will compare the prices of over-the-counter medicine among brands while I want to purchase.	188	1	5	3.26	1.258
I will buy the cheapest over-the-counter medicine.	188	1	5	3.47	1.194
I will switch to another brand of over-the-counter medicine if the price is increased.	188	2	5	4.27	0.915
I decide to buy over-the-counter medicine upon families' and friends' recommendation.	188	2	5	3.95	1.007
I decide to buy over-the-counter medicine through my own experience.	188	2	5	4.10	0.639
I decide to buy over-the-counter medicine by considering its price.	188	3	5	4.37	0.670
Valid N (listwise)	188				

The findings as reported in Table 4.6 shows that most of the participants mean =4.37 (SD = 0.670) in the study area stated that they make decisions of buying over-the-counter medicine after considering the price. A relatively sizeable number (mean=4.27) (SD =0.915) stated that they switch to another brand of over-the-counter medicine if the price was increased. This could imply that patient's average income play a significant role when they are making a choice to buy an over-the-counter medicine. It could also mean that that price of the over-the-counter medicine

in itself may have a razzmatazz impact on patients more than the utility impact of the medicine.

It is worth noting that a relatively huge number of respondents (mean =4.10) (SD = 0.639) stated that they make decisions to buy over- the- counter medicine through their own experience. This suggests that the status of pharmaceutical facility before and after the service is likely to influence patient’s perception and patients’ future behavioral intention. These discoveries are in accordance with the concentrate by Adhikari and Rijal (2017) that, while specialized quality appears by a long shot to be the main element; a portion of its credits might charm patients others might cause disappointment nevertheless others might not affect the patients' decision of the kind of medication.

4.3.3 Descriptive analysis of the competence of pharmacy technician on the clients’ choice for over the counter medicine.

The study investigated the competence of pharmacy technician on the clients’ choice for over the counter medicine. The respondents rating on the 5 point Likert scales was analyzed using the mean scores. The results are presented in Table 4.7:

Table 4.7: Competence of Pharmacy Technician - Descriptive Statistics

<i>Indicator</i>	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std. Dev.</i>
I have a trust on pharmacist’s recommendation of over- the- counter medicines.	188	2	5	3.70	1.073
I have been buying an over- the- counter medicine according to pharmacist’s recommendation.	188	2	5	3.84	0.940
The information I obtain from my family members and friends encourage me to buy over- the- counter medicine.	188	1	5	3.68	1.087
I have an experience of buying over- the- counter medicine which the pharmacist recommended me.	188	1	5	3.56	1.090
I have a trust on family member’s experiences regarding over- the counter medicines.	188	1	5	3.65	1.176
I have experience of buying a brand of over- the- counter medicine that my family members recommended me without consulting the pharmacist.	188	1	5	3.81	1.145
I repeat buying a medicine which the pharmacist described to me and gave me good results.	188	1	5	4.02	0.959
I repeat buying an over-the-counter medicine that my family members and friends described to me and gave me good results.	188	2	5	3.68	1.087
Valid N (listwise)	188				

Based on Table 4.7, the results indicated that the majority of the respondents (mean = 4.02) (SD= 0.959) in the study reported that they repeat buying a medicine which the pharmacist described to them and gave them good results. This suggests that pharmacy technicians, participating in the medication reconciliation process represents a new professional role that may change the pharmaceutical sector for the betterment of services given to the patients.

It is important to note that a relatively sizeable number of respondents (mean =3.84) (SD= 0.940) indicated that they have been buying an over- the- counter medicine according to pharmacist's recommendation. This could suggest that a patient in the study area is able to source medication via routes that may require prior knowledge of various routes of requisition, such as the on-call pharmacist.

The outcome are upheld by Adhikari and Rijal (2017) who contended that patients depend on their past medical services encounters while choosing where to get care. As per Afolab et al., (2017) this appears to apply to those patients who can choose. Nonetheless, Qian, Pong and Yin (2019) contended that specific patient groups like the exceptionally learned and more youthful patients, patients with higher salaries and patients without a current (palatable) relationship with a supplier settle on a functioning decision on a more regular basis.

4.4 Inferential Statistics

Inferential statistics was done through Pearson Correlation analysis. Regression analysis was used to determine the relationship between s level of understanding of originality of the over the counter medicine; pattern of choice of pharmaceutical facility; competence of pharmacy technician; and the clients' choice for over the counter medicine. To achieve this, quantitative data was uploaded into SPSS version 25 for processing. Correlation analysis was used to examine the strength of the relationship. This was done by analyzing the means of variables x and y to determine how Pearson's (r) varies between +1 and -1; where +1 is a perfect positive correlation, and -1 is a perfect negative correlation. 0 means there is no linear correlation at all while the p-value will give evidence of a statistically significant relationship between the variables. If a p-value is less than 0.05, then there is evidence of a statistically significant association between the variables and vice versa.

4.4.1 Pearson Correlation Analysis

Correlational analysis of patients' level of understanding of originality of the over the counter medicine and the choice for medicine.

The objective of the study was to determine the effect of patients' level of understanding of originality of the over the counter medicine, on the patients' choice for medicine. Pearson correlation test was computed to assess the relationship between patients' level of understanding of originality of the over the counter medicine and the patients' choice for medicine.

Table 4.8: Correlational analysis of patients' level of understanding of originality of the over the counter medicine and choice for over the counter medicine

		Patients' Level of Understanding of Originality of the Over the Counter Medicine	Patients' choice for over the counter medicine.
Patients' Level of Understanding of Originality of the Over the Counter Medicine	Pearson Correlation	1	0.090*
	Sig. (2-tailed)		0.033
	N	26	26
Patients' choice for over the counter medicine.	Pearson Correlation	0.090*	1
	Sig. (2-tailed)	0.033	
	N	26	26

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Survey data (2022)

The correlation analysis results shown in Table 4.8 revealed a positive significant relationship between patients' level of understanding of originality of the over the counter medicine and choice for over the counter medicine ($r = 0.090$, $p = 0.033 < 0.05$). This was interpreted to mean that the more patients' level of understanding of originality of the over the counter medicine increased in the study area, the more the choices for over the counter medicine was likely to be witnessed notwithstanding the minimal effect. This means that the relationship was weak and positively statistically significant. These discoveries are reliable with a concentrate by Qian (2018) who laid out that the decision of pharmaceutical drugs relies upon a few factors, for example, schooling and accessibility of data by the patient.

Correlational analysis of pattern of choice of pharmaceutical facility and the patients' choice for over the counter medicine.

The objective of the study was to establish the effect of pattern of choice of pharmaceutical facility on the patients' choice for over the counter medicine. Pearson correlation test was computed to assess the relationship between pattern of choice of pharmaceutical facility and the patients' choice for over the counter medicine.

Table 4.9: Correlational analysis of pattern of choice of pharmaceutical facility and the patients' choice for over the counter medicine.

		Pattern of Choice of Pharmaceutical Facility	Patients' choice for over the counter medicine.
Pattern of Choice of Pharmaceutical Facility	Pearson Correlation	1	-0.027*
	Sig. (2-tailed)		0.018
	N	26	26
Patients' choice for over the counter medicine.	Pearson Correlation	-0.027*	1
	Sig. (2-tailed)	0.018	
	N	26	26

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Survey data (2022)

The results as shown in Table 4.9 revealed a negative significant relationship between pattern of choice of pharmaceutical facility and the patients' choice for over the counter medicine ($r = -0.027$, $p = 0.018 < 0.05$). This was interpreted to mean that the more the patients' pattern of choice of pharmaceutical facility went up in the study area, the lower the choice for over the counter medicine was likely to be witnessed notwithstanding the minimal effect. This is steady with a concentrate by Adhikari and Rijal (2017) who tracked down that the situation of the drug facility before and after the admission is probably going to impact patients' discernment and patients' future conduct aim.

Correlational analysis the competence of pharmacy technician and the clients' choice for over the counter medicine.

The objective of the study was to examine the role of pharmacy technician on the clients' choice for over the counter medicine. Pearson correlation test was computed to assess the relationship between the role of pharmacy technician and the clients' choice for over the counter medicine.

Table 4.10: Correlational analysis the competence of pharmacy technician and the clients' choice for over the counter medicine.

		Competence of Pharmacy Technician	Patients' choice for over the counter medicine.
Competence of Pharmacy Technician	Pearson Correlation	1	0.087*
	Sig. (2-tailed)		0.008
	N	26	26
Patients' choice for over the counter medicine.	Pearson Correlation	0.087*	1
	Sig. (2-tailed)	0.008	
	N	26	26

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Survey data (2022)

The correlation analysis results shown in Table 4.10 revealed a positive significant relationship between the role of pharmacy technician and the clients' choice for over the counter medicine ($r = 0.087$, $p = 0.008 < 0.05$). This was interpreted to mean that the more the competence of pharmacy technician improved (in terms of good communication skills and service quality) in the study area, the more the choices for over the counter medicine was likely to be witnessed notwithstanding the minimal effect. This means that the relationship was weak and positively statistically significant. These discoveries are predictable with a concentrate by Adhikari and Rijal (2017) who found that the openness of the drug expert impacted patients' decision of medication.

4.4.2 Multiple Regression Analysis

Multiple regression is a statistical method for determining the strength of relationships between patients' level of understanding of originality of the over the counter medicine; pattern of choice of pharmaceutical facility; role of pharmacy technician competence; and the clients' choice for over the counter medicine. The results include the model summary, analysis of variance (ANOVA) and regression coefficients of patients' level of understanding of originality of the over the counter; pattern of choice of pharmaceutical facility; role of pharmacy technician competence; and the clients' choice for over the counter medicine. The ANOVA matrix illustrates the overall significance of the model. So if p value is less than 0.005- it merits rejection of the hypothesis- no significant influence of the predictor variable on the dependant variable (Laub, 2018). Regression coefficient (beta column) shows the relationship

between patients' level of understanding of originality of the over the counter medicine; pattern of choice of pharmaceutical facility; role of pharmacy technician competence; and the clients' choice for over the counter medicine. If the beta coefficient is negative/positive, the interpretation is that for every 1-unit increase/decrease in the predictor variable, the outcome variable will decrease/increase by the beta coefficient value.

The following equation represented the regression model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Dependent variables (Y) Patients' choice for over the counter medicine

Independent variables:

X₁ (patients' level of understanding of originality of the over the counter medicine),

X₂ (pattern of choice of pharmaceutical facility),

X₃ (competence of pharmacy technician),

B₁- β₃ = Coefficients of determination,

ε was the error term denoting a non-linear relationship between the independent and dependent variables which is referred to as "noise".

Table 4.11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.221 ^a	0.049	0.081	0.4741

a. Predictors: (Constant), Competence of Pharmacy Technician , Pattern of Choice of Pharmaceutical Facility , Level of Understanding of Originality of the Over the Counter Medicine

Table 4.11 shows that the coefficient of determination (adjusted R Square) is 0.081 at significance 0.005. This implies that 8.1% of variation in the dependant variable (Patients' choice for over the counter medicine) is explained by independent variables: competence of pharmacy technician, pattern of choice of pharmaceutical facility and level of understanding of originality of the over the counter medicine. This means that, a unit shift in competence of pharmacy technician, pattern of choice

of pharmaceutical facility or level of understanding of originality of the over the counter medicine will result in 8.1% rise in patients' choice for over the counter medicine in the study area.

Further, the results of the regression coefficients shown in Table 4.12 shows that R square is 0.221 which demonstrates a substantial positive correlation of 22.1 percent between the dependent variable (patients' choice for over the counter medicine) and the independent variables.

Table 4.12: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.255	3	0.085	0.378	0.007 ^b
Residual	4.945	22	0.225		
Total	5.200	25			

a. Dependent Variable: Patients' choice for over the counter medicine.

b. Predictors: (Constant), Competence of Pharmacy Technician, Pattern of Choice of Pharmaceutical Facility , Level of Understanding of Originality of the Over the Counter Medicine

The analysis of variance test was used to evaluate how well the entire regression model fits the data. The result as shown in Table 4.12 revealed that, at a significance threshold of 0.007, the $F(3, 22) = 0.378$ and $p \text{ value} < 0.007$ was significant. The result demonstrate a statistically significant relationship between the dependent variable (patients' choice for over the counter medicine) and the predictor factors (competence of pharmacy technician, pattern of choice of pharmaceutical facility & level of understanding of originality of the over the counter medicine). This is due to the significance value being less than 0.05 ($p = 0.007$).

In Table 4.13, the whole Regression model was displayed as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Based on the coefficients Table 4.23, the following was deduced:

Table 4.13: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	3.442	1.445		2.381	0.026	0.444	6.439
1 Level of Understanding of Originality of the Over the Counter Medicine	0.131	0.198	0.157	0.664	0.514	-0.279	0.541
Pattern of Choice of Pharmaceutical Facility	-0.170	0.175	-0.216	-0.971	0.342	-0.533	0.193
Competence of Pharmacy Technician	0.104	0.278	0.090	0.373	0.712	-0.473	0.681

a. Dependent Variable: Patients' choice for over the counter medicine.

$Y = 3.442 + 0.131$ (level of understanding of originality of the over the counter medicine) $+ -0.170$ (Pattern of Choice of Pharmaceutical Facility) $+ 0.104$ (Competence of Pharmacy Technician) $+ 1.445$.

The regression coefficients illustrated in Table 4.13 revealed that level of understanding of originality of the over the counter medicine $\beta = 0.157$ or 15.7%, P value = 0.05. This implies that a unit improvement in level of understanding of originality of the over the counter medicine leads to increased patients' choice for over the counter medicine by 15.7% when other variables are controlled. The T-test is 0.664 more than 0.05 meaning the relationship is statistically significant. This perception concurs with a concentrate by Sharif, Chaar, Albadrani, and Shahwan (2016) who led a cross-sectional review to survey patients' knowledge of information and mentalities in regards to conventional prescriptions. The investigation discovered that patients with restricted understanding and view of nonexclusive prescriptions experienced difficulty picking a drug since they didn't see what conventional or brand medications implied.

Further, the regression coefficients illustrated in Table 4.13 shows that Pattern of choice of pharmaceutical facility $\beta = -0.216$, or 21.6%, P value = 0.05. This implies that a unit change in pattern of choice of pharmaceutical facility leads to a decline in patients' choice for over the counter medicine by 21.6% when other variables are controlled. The T- test is -0.971 less than 0.05 meaning the relationship is statistically insignificant. This observation agrees with a study by Twahir (2017) who contended

that pattern of choice is not necessarily a good thing in health care; however, that does not rebut the significance of choice.

From Table 4.13, the regression coefficients shows that competence of pharmacy technician $\beta = 0.090$, or 9%, P value = 0.05. This implies that a unit improvement in competence of pharmacy technician leads to a rise in patients' choice for over the counter medicine by 9% when other variables are controlled. The T- test is 0.373 more than 0.05 meaning the relationship is statistically significant. This observation agrees with a study by Afolabi (2017) who found that the most significant contributing factors to attract patients were the physicians and the facilities' environment. The study established that the accessibility of the pharmacy technician influenced patients' choice of medicine.

4.5 Chapter Summary

Chapter 4 has found that majority of the respondents (this included patients and pharmacy technicians) work in the research region are were found to be young adults in their 30s and 40s. Over half of them were female with either a Bachelor's degree or a diploma holder. Majority of the participants were earning between Kshs 20,001 and Kshs 30,000 at the time of this study. Descriptive statistics have analysed the respondents' perspectives in line with three study variables: patients' level of understanding of originality of the over the counter medicine, pattern of choice of pharmaceutical facility and the role of pharmacy technician competence on the clients' choice for over the counter medicine. The accompanying chapter examined the discoveries of the review and gave the conclusions as well as the recommendations in light of the particular goals of this review.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This was the final chapter of the study. It provided recommendations and insight into the topics for further investigation, presented the results of the initial study, and came to conclusions based on those results. The studies specific objectives were: (i) to determine the effect of patients' level of understanding of originality of the over the counter medicine, on the patients' choice for medicine; (ii) to establish the effect of pattern of choice of pharmaceutical facility on the patients' choice for over the counter medicine; and to (iii) to examine the role of pharmacy technician competence on the clients' choice for over the counter medicine.

5.2 Summary of Findings

The majority of the respondents (this included patients and pharmacy technicians) in the research region were found to be young adults in their 30s and 40s. Over half of them (59.6%) were female with either a Bachelor's degree (51.1%) or a diploma holder (35.1%). Majority of the participants (36.2%) were earning between Kshs 20,001 and Kshs 30,000 at the time of this study. Descriptive statistics have revealed that majority of the respondents (mean =4.43) in the study area have self-scepticism of generic medications when purchasing over the counter as they seem to consider the country of origin of medicine while they make a purchase on an over the- counter.

The study has reported that most of the participants (mean =4.37) in the study area make decisions of buying over- the- counter medicine after considering the price. This clearly suggest that patient's average income play a significant role when they are making a choice to buy an over-the-counter medicine. In view of the outcomes, it has been accounted for that most of the respondents (mean = 4.02) in the review rehash purchasing a medication which the drug specialist depicted to them and gave them great outcomes. This proposes that drug store specialists, partaking in the prescription process might actually change the drug choice by the patients. It is critical to take note

of that a moderately sizeable number of respondents (mean =3.84) answered to have been purchasing an over-the-counter medication as per drug specialist's suggestion.

Further, the study has found a positive and statistically significant relationship between patients' level of understanding of originality of the over the counter medicine, pattern of choice of pharmaceutical facility, the role of pharmacy technician competence; and clients' choice for over the counter medicine. Multiple regression analysis has reported that a unit shift in competence of pharmacy technician, pattern of choice of pharmaceutical facility or level of understanding of originality of the over the counter medicine will result in 8.1% rise in patients' choice for over the counter medicine in the study area.

5.3 Discussion

5.3.1 To determine the effect of patients' level of understanding of originality of the over the counter medicine, on the patients' choice for medicine.

The study has found that the patients' knowledge of originality of medicine in the study area was good. This also confirmed high education levels among the patients and availability of information within the study area. Further, the results revealed a positive significant correlation between patients' level of understanding of originality of the over the counter medicine and the patients' choice for over the counter medicine ($r = 0.090$, $p = 0.033 < 0.05$). This was interpreted to mean that the more patients' level of understanding of originality of the over the counter medicine increased in the study area, the more the choices for over the counter medicine was likely to be witnessed notwithstanding the minimal effect.

The study has also revealed that a unit improvement in level of understanding of originality of the over the counter medicine leads to increased patients' choice for over the counter medicine by 15.7% when other variables are controlled. The findings showed that the relationship is statistically significant. The outcomes concurs with a concentrate by Sharif, Chaar, Albadrani, and Shahwan (2016) who directed a cross-sectional review to evaluate patients' degrees of information and mentalities in regards to nonexclusive meds. The investigation discovered that patients with restricted understanding and impression of nonexclusive prescriptions experienced difficulty picking a drug since they failed to see what conventional or brand meds implied.

As indicated by a concentrate by Adhikari and Rijal (2017), the situation with drug office when the confirmation is probably going to impact patients' insight and patients' future social aim. Also, Ndirangu (2019) analyzed the impact of patients' information on anti-infection agents on drug obstruction in Kenya and the discoveries showed that un-informed patients are less inclined to look for proficient medical services contrasted with their educated partners.

Sharif et al., (2016) noticed that there is a developing perception that patients can and ought to assume a significant part in choosing their own consideration, in characterizing ideal consideration, and in further developing medical care conveyance. Well known ideas like patient-focused care, patient strengthening, and patients as accomplices, shared direction, and educated decision delineate the liberation regarding patient. Twahir (2017) fought that decision isn't really something worth being thankful for in medical services; nonetheless, that doesn't refute the meaning of decision.

5.3.2 To establish the effect of pattern of choice of pharmaceutical facility on the patients' choice for over the counter medicine.

The review has laid out that the patient's normal pay assume a critical part when they are going with a decision to purchase an over-the-counter medication. It was tracked down that the cost of the over-the - counter medication in itself might affect patients more than the utility effect of the medication.

The review has uncovered a negative critical connection between pattern of decision of drug office and the patients' decision for over the counter medication. This was perceived to imply that the more the patients' pattern of decision of drug office went up in the review region, the lower the decision for over the counter medication was probably going to be seen despite the negligible impact.

Further it has been found that a unit change in pattern of decision of drug office prompts a decrease in patients' decision for over the counter medication by 21.6% when different factors are controlled. The relationship has likewise been viewed as genuinely unimportant. This perception concurs with a concentrate by Twahir (2017) who battled that example of decision isn't really something to be thankful for in medical services; nonetheless, that doesn't disprove the meaning of decision. A

concentrate by Adhikari and Rijal (2017) who tracked down that the situation with drug office when the confirmation is probably going to impact patients' discernment and patients' future conduct expectation.

5.3.3 To examine the role of pharmacy technician competence on the clients' choice for over the counter medicine.

The investigation has discovered that drug store specialists, taking part in the prescription process may addresses another expert job that might change the drug sector to improve administrations given to the patients. The correlation analysis results have revealed a positive significant relationship between the role of pharmacy technician and the clients' choice for over the counter medicine. This was perceived to imply that the more the capability of drug store expert improved (regarding great relational abilities and administration quality) in the review region, the more the decisions for over the counter medication was probably going to be seen despite the negligible impact.

From the study, the regression coefficients showed that a unit improvement in competence of pharmacy technician leads to a rise in patients' choice for over the counter medicine by 9% when other variables are controlled. The relationship was found to be statistically significant. This observation agrees with a study by Afolabi (2017) who found that the most significant contributing factors to attract patients were the physicians and the facilities' environment. The study established that the accessibility of the pharmacy technician influenced patients' choice of medicine.

These discoveries are predictable with a concentrate by Adhikari and Rijal (2017) who found that the openness of the drug expert impacted patients' decision of medication. The review noticed that patients depend on their past medical services encounters while choosing where to get care. Further, as indicated by Afolab et al., (2017) this appears to apply to those patients who can pick. In any case, Qian, Pong and Yin (2019) contended that specific patient gatherings like all the more exceptionally taught and more youthful patients, patients with higher salaries and patients without a current (good) connection with a supplier pursue a functioning decision on a more regular basis. In any case, drug store specialists, partaking in the

prescription compromise process addresses another expert job that might change the drug area to improve administrations given to the patients.

5.4 Conclusions

5.4.1 To determine the effect of patients' level of understanding of originality of the over the counter medicine, on the patients' choice for medicine.

The conclusion drawn from research objective one is that there is a significant relationship between patients' degree of comprehension of novelty of the over the counter medication, on the patients' decision for medication. In this manner, it tends to be presumed that data accessible to the patient and level of training of the patient influences their decision for medication.

5.4.2 To establish the effect of pattern of choice of pharmaceutical facility on the patients' choice for over the counter medicine.

According to study objective two, it has been determined that there is a strong correlation between pattern of choice of pharmaceutical facility on the patients' choice for over the counter medicine. The concentrate likewise reaches the conclusion that accessibility of a drug office and capable expert patients are fundamental for patients' decision for drug care.

5.4.3 To examine the role of pharmacy technician competence on the clients' choice for over the counter medicine.

According to research objective three, the conclusion states that there is a strong correlation between the roles of pharmacy technician competence on the clients' choice for over the counter medicine. The concentrate likewise reaches the resolution that drug store specialists should be knowledgeable with great relational abilities to draw in with clients plainly. Drawing in drug store professionals might develop patients' decision for over the counter medication.

5.5 Recommendations

5.5.1 To determine the effect of patients' level of understanding of originality of the over the counter medicine, on the patients' choice for medicine.

It is recommended that the drug facilities in the study region to give adequate data with respect to over-the-counter medication for patients to settle on informed purchase decisions in the future.

5.5.2 To establish the effect of pattern of choice of pharmaceutical facility on the patients' choice for over the counter medicine.

The survey recommends pharmacy technicians and other pharmaceutical professionals in the study region to be knowledgeable with non-prescription medicine needs to pass something very similar to clients as this will upgrade a decent relationship and rehash buy.

5.5.3 To examine the role of pharmacy technician competence on the clients' choice for over the counter medicine.

The drug store technicians are prescribe to continually self-assess their ability particularly relational abilities in order to serve the clients capability as this will advance client-drug store relationship.

5.5.4 Recommendations for practice and future research

It is recommended that future examination center around a bigger scope to draw significant discoveries since this study focused on non-prescription drug. This can be accomplished by likewise taking a gander at generic versus branded drugs as well as utilizing a bigger sample size and an alternate area. Future examination should likewise zero in on the greater range of the clinical field.

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Appendix 1: Questionnaire

Dear Respondent;

This research focuses on *determinants of patients' choice for medicine among private pharmaceuticals in Nairobi County, Kenya*. This study is voluntary and you are free to withdraw at any given time without any consequences. The information you provide will only be used for the results of the study and it is strictly confidential.

Part I: General Information

1. What is your age (in year?)
 - 18-30 yrs old
 - 31-40 yrs old
 - 41-50 yrs old
 - 51-60 yrs old
 - >60 yrs old
2. Sex
 - Male
 - Female
3. Educational Level
 - No formal education
 - Primary School completed
 - High School completed
 - Diploma
 - Bachelors Degree
 - Masters Degree and above
4. Your monthly income
 - <5,000
 - 5,000-10,000
 - 10,001-20,000
 - 20,001-30,000
 - 30,001-40,000
 - 40,001-50,000
 - >50,000

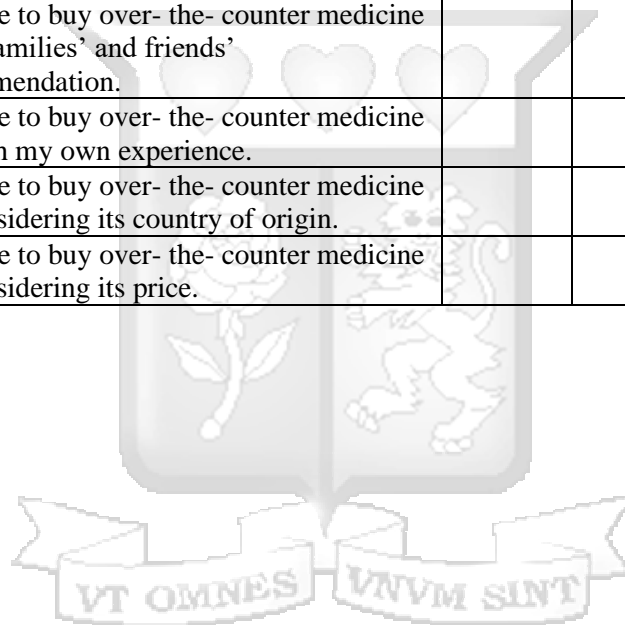
Part II:

Please indicate your degree of agreement or disagreement against each question by encircling the appropriate number (where, 1: Strongly disagree, 2: Disagree, 3: Neutral, 4: Agree, and 5: Strongly agree). N.B. Over- the- counter medicine is a medicine that can be purchased from pharmacy without prescription.

	Factors	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
Pharmacist's recommendation (PR)						
PR1	I have a trust on pharmacist's recommendation of over- the- counter					

	medicines					
PR2	I have been buying an over- the- counter medicine according to pharmacist's recommendation					
PR3	I repeat buying a medicine which the pharmacist described to me and gave me good results.					
PR4	I have an experience of buying over- the-counter medicine which the pharmacist recommended me.					
Families' and Friends recommendation (FFR)						
FFR1	I have been buying over- the- counter medicine of which I have heard from my friend and/or my family					
FFR2	I have a trust on family member's experiences regarding over- the counter medicines.					
FFR3	I have experience of buying a brand of over- the- counter medicine that my family members recommended me without consulting the pharmacist.					
FFR4	The information I obtain from my family members and friends encourage me to buy over- the- counter medicine.					
FFR5	I repeat buying an over-the-counter medicine that my family members and friends described to me and gave me good results.					
Previous Experience (PE)						
PE1	I prefer to purchase a brand of over-the-counter medicine that I have previously purchased.					
PE2	I always buy the same brand of over-the-counter medicine.					
PE3	I am willing to pay more for an over-the-counter medicine I have had a good experience with.					
PE4	I will buy different brands of over- the-counter medicine because I want variation.					
Country- of- Origin (COO)						
COO1	I like considering its country of origin while I purchase an over the- counter medicine.					
COO2	I use country-of-origin as a reference to evaluate quality of an over the- counter medicine among brands.					
COO3	I will purchase over- the- counter medicines from certain country to enhance my self-image.					
COO4	I believe purchasing over- the- counter medicines from certain country will enhance my social status and pride.					
COO5	I will purchase an over- the- counter medicine, if it is from a country-of-origin					

	which I like.					
Price (P)						
P1	I am very concerned about the price of the over- the- counter medicine.					
P2	I will continue buying over- the- counter medicine which I know so far even though it increases its price					
P3	I will switch to another brand of over- the- counter medicine if the price is increased.					
P4	I will compare the prices of over- the- counter medicine among brands while I want to purchase.					
P5	I will buy the cheapest over- the- counter medicine.					
Purchase decision (PD)						
PD1	I decide to buy over- the- counter medicine upon pharmacist's recommendation.					
PD2	I decide to buy over- the- counter medicine upon families' and friends' recommendation.					
PD3	I decide to buy over- the- counter medicine through my own experience.					
PD4	I decide to buy over- the- counter medicine by considering its country of origin.					
PD5	I decide to buy over- the- counter medicine by considering its price.					



Appendix 2: List of Pharmacies in Nairobi's CBD

S/NO	NAME OF PHARMACY	LOCATION
1.	Loxine Pharmacy	Mwingi Rd
2.	Kenark Pharmacy	CITY HALL WAY,
3.	Orion Pharmacy Ltd	Forest Road Plaza
4.	Northern Pharmacy	Opposite Sagret Hotel,
5.	Nivani Chemicals & Pharmaceuticals Ltd	Ronald Ngala Street
6.	Njimia Pharmaceuticals Ltd	Landmark Plaza,
7.	Nila Pharmaceuticals Ltd	Ronald Ngala,
8.	Newmark Pharmaceuticals Ltd	Kimathi Street
9.	New Lemuma Pharmacy Ltd	Tom Mboya Street
10.	Metropolitan Chemists Ltd	Loita Street
11.	Meditec Pharmaceuticals Ltd	Haile Selassie Avenue
12.	Malibu Pharmacy Ltd	Roughton Court Plaza
13.	Maendeleo Chemist Ltd	Monrovia Street
14.	Macrence Pharmacy	Suna Road, Next to Uchumi Adams, off Ngong Road
15.	Lyntons Pharmacy Ltd,	Mama Ngina Street
16.	Le Grande Specialty Pharmacy	Suite 2 Ngong Road
17.	Krishna Chemists Ltd	Lusaka Road,
18.	Kimton Pharmacy Ltd	Tom Mboya Street
19.	Kilimanjaro Dawa Ltd	City Hall Way
20.	Kenak Pharmacy	Moi Avenue
21.	Kavakava Pharmacy	Mfangano Street
22.	J & J Pharmaceuticals Ltd	Development House
23.	Jeys Pharmacy Ltd	Travellers House, Opposite Gatundu Stage
24.	Jacaranda Chemist	Kenyatta Avenue
25.	IPA Laboratories Limited	Moi Avenue,
26.	Highpharm Pharmaceuticals Ltd	Moi Drive,
27.	Healthway Chemist	Tom Mboya street
28.	Health Life Pharmaceuticals Ltd	Uhuru Highway
29.	Goldmed Pharmacy Limited	Moi Avenue Junction
30.	Gold Chem Pharmacy	Kmukunji Road
31.	Easton Pharmaceuticals Ltd	Aga Khan Walk
32.	Doc-care Ville Pharmacy Limited	Ronald Ngala Street,
33.	Dishchem Pharmacy	Tom Mboya street
34.	Dilabit Pharmacy	Mfangano Street
35.	Dapco Pharmaceuticals	Moi Avenue
36.	Consolata Pharmaceuticals Ltd	Tom Mboya street

Appendix 3: Dissemination Plan

Method of dissemination	Audience	Communication strategy
Publishing project findings in national journals	Policymakers	Journals
Sharing information through social media	Healthcare providers <ul style="list-style-type: none"> • Community health workers • Caregiver groups • Public health departments • Rural health associations • Pharmacy associations 	Social media
Presenting project results to local community groups	Community members <ul style="list-style-type: none"> • Individuals/Patients • Schools • Universities • Nonprofit organizations • Faith-based organizations • Other community-based groups 	Livestream on social media (Facebook)

