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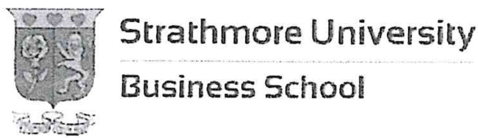

EXAMINING THE SUSTAINABILITY AND IMPACT OF AN INNOVATIVE COMMUNITY PHARMACY MODEL IN EXPANDING ACCESS TO NON-COMMUNICABLE DISEASE MEDICINES IN NAIROBI, KENYA

A CASE STUDY

REBECCA MUSYOKI

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Master in Business Administration in Healthcare Management Degree

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other university. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

Rebecca Musyoki

February, 2021

Approval

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ABSTRACT

As the burden of non-communicable diseases (NCDs) continues to rise globally, low- and middle-income countries are increasingly appreciating the role of primary health care (PHC) facilities in early screening, detection and disease management. However, PHC is poorly funded in most countries, resulting in capacity and operational challenges. In response, innovative models have begun emerging, including community-linked initiatives. This study sought to examine an innovative revolving fund community pharmacy model established to support the fight against NCDs in Nairobi. The study employed a qualitative approach to examine the role the community pharmacy played in expanding access to NCD medicines, and explore its sustainability and perceived impact. Data was collected from patients, management committee and providers through in-depth interviews, and analysis conducted using a thematic framework approach. The study revealed that actor ecosystem (management, PHC facility staff and community members) generally understood the key model features, including its operations and financing. There was general agreement that the community pharmacy had promoted access to NCD medicines across key groups. Analysis of sustainability factors (outcome-based advocacy, systems orientation, community linkages, vision focus balance and infrastructure development) suggested that the model was relatively sustainable. The study recommends that for better sustainability, a policy framework for operation of this community pharmacy may be required, and should include a regulation and oversight framework, monitoring, evaluation mechanisms, and community and stakeholder's engagement protocols. In addition, the study recommends community pharmacies run as partnerships to have shared vision and goals with realistic strategic plans detailing how to achieve them.

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LIST OF ABBREVIATIONS AND SYMBOLS USED

AIDS	Acquired Immune Deficiency Virus
GBD	Global burden of disease
HIV	Human Immunodeficiency Virus
KNBS	Kenya National bureau of Standards
LMICs	Low and middle income countries
MEDS	Mission for Essential Drug Supply
MOH	Ministry of Health
MOU	Memorandum of understanding
NCDs	Non communicable diseases
NHIF	National Hospital Insurance Fund
PHC	Primary Health Care
PPB	Pharmacy and Poisons Board
RFP	Revolving fund pharmacy
SCHMT	Sub County Health Management Team
SDG	Sustainable development goals
STEPS	STEPwise approach to Surveillance
TB	Tuberculosis
UHC	Universal Health Coverage
WHO	World Health Organization

CHAPTER 1: INTRODUCTION

1.0: Background

The NCD disease category is very broad, but typically comprises of four groups of diseases, namely, cardiovascular diseases, cancers, respiratory diseases and diabetes (WHO, 2013). Non communicable diseases (NCDs) account for over 41 million deaths globally contributing to 71% of annual deaths (WHO, 2017a). According to the World Health Organization (WHO), the majority of these deaths occur in low and middle income countries (LMICs) (WHO, 2017a).Most of the deaths are premature, occurring between the ages of 30-69 years. (WHO, 2017a).

The burden of NCDs is increasing in Africa. Some sources have projected that NCDs will be the leading cause of deaths across Africa by 2030, overtaking communicable diseases such as pneumonia, malaria and diarrhea (Imperial College London, 2018). WHO estimates that about four million NCD-related deaths will occur in the African region by 2030. The major risks associated with NCDs include tobacco use, physical inactivity, harmful use of alcohol and unhealthy diet. In addition, there are intermediate risk factors, including obesity, high blood pressure, high (poorly controlled) blood sugar and high cholesterol levels (WHO, 2015).

In Kenya, NCDs accounted for 31% of all deaths reported in the year 2015 (RTI, 2016). STEPS survey reported they are the leading cause of all hospital deaths (KNBS, 2015). Being diagnosed with an NCD translates to years of poor health and disability making NCDs a factor in 30% of disability life years in Kenya (GBD, 2017). In Kenya, NCD-related deaths have been attributed to poverty and lack of early detection and treatment due to an inadequate healthcare system (RTI, 2016). STEPwise approach to Surveillance (STEPS) survey findings also showed that more than half of Kenyans had never had their blood pressure measured, and of those diagnosed with high blood pressure, only 22% were on medication (KNBS, 2015). Roughly, 87% had never been tested for blood sugar, and of those diagnosed with high blood sugar (poorly controlled blood sugar), less than half were taking medication.

The focus of the Kenya National Strategy for NCDs (2015-2020) is addressing systematic challenges that affect both county and national government in NCD prevention and control. There is a general belief that Kenya has in the past put all effort towards controlling communicable diseases at the expense of NCDs. Findings from the Kenya ABCE (Access, Bottlenecks, Costs and Equity) study showed that half of Kenyan healthcare facilities lacked functioning glucometers to measure blood sugar and only 27% of essential NCD medications were available (Ce & Si, 2014).

The Kenya National Strategy for NCDs guiding principles and strategic objectives anchor strongly on the role of primary health care facilities and community involvement in prevention and control of NCDs. Primary health care facilities play an important role in provision of preventive, promotive, rehabilitative and curative services (WHO, 2015). The traditional primary health care model in Kenya provides most of these services free at the point of use, usually with funding from county and national governments, and development partners (Chuma.J, 2014). Fees for primary care services were abolished in 2013 through a presidential declaration. The funding caters for human resources, commodities and other operational expenditures (Ce & Si, 2014).

Most primary healthcare facilities however fail to provide optimal care due to inadequate financing, lack or inadequately trained human resource and lack of commodities to screen, monitor and manage the diseases (Ce & Si, 2014). Previous assessments have shown that primary healthcare services are greatly underfunded in Kenya (WHO, 2017b). For this reason, communities and county management are seeking alternative ways of expanding access to essential commodities, particularly those needed to manage NCDs and other high-burden illnesses.

This study seeks to contribute to these objectives by examining an NCD community pharmacy model at a primary health care facility in Nairobi County. The pharmacy is run through a community partnership between the facility and the community. The NCD strategic objective five talks of promoting sustainable local and international partnerships for the prevention and control of NCDs. Strategic objective number 4 seeks to promote and conduct research for the prevention and control of NCDs. The study contributes to both objectives.

1.1: Community pharmacies concept

Community pharmacies operate on a revolving fund model whereby initial capital investment allows for purchase of medicines (Cross, P. N., Huff, M. A., Quick, J. D., & Bates, 1986). Revenues generated from medicine sales or user fees are used to replenish stock. Key reasons given for establishment of community pharmacies include failing public financing and supply chain management systems and the high cost of medicines in private pharmacies (Ii & Iii, 2012). Other reasons include: patients attach greater value to medicines they have paid for with a potential result being improved adherence to treatment, quality of medicines is assured and improved access to medicines (Umenai & Narula, 1999).

Whereas the primary aim of private pharmacies is to maximize profit, the primary aim of community pharmacies is to improve access to medicines especially where there is inadequate public financing (Ataelseed, H. A., Idries, A. W., Hamid, M. M., Ahmed, A. D., Eltigani, S. H., & Ahmed, M. M., 2008)

Establishing and sustaining community pharmacies is not easy. Factors that have been shown to improve sustainability and efficiency include local control and retention of revenue, reliable supply of low cost essential medicines, protection mechanisms to ensure equitable access, business like orientation to personnel, supply chain and financial management (Umenai & Narula, 1999).

Community involvement and partnership in running community pharmacies is essential for credibility, acceptability and accountability of revolving fund community pharmacies (Von Massow, F., Korte, R., Cheka, C., Kuper, M., Tata, H., & Schmidt-Ehry, B., 1998).

Problem statement

Global attention has been drawn to the rising burden of NCDs and their impact on communities (Jaffar, 2016). Already, studies have shown them to be the leading cause of deaths globally (WHO, 2017a). Low- and middle-income countries are even more disadvantaged. They face the triple

burden of disease that also includes communicable diseases and accidents and injuries (Atun & Gale, 2015). What makes NCDs particularly challenging is their chronic nature, meaning life-long treatment is often required. Yet, most LMICs have focused investments on communicable diseases such as malaria, diarrhea and pneumonia, which though equally fatal, typically present acutely, and are treated over shorter periods of time (Jaffar, 2016).

Kenya, like other LMICs, is facing the triple burden, yet its health system model that has developed over the years is better suited for managing acute illnesses (KNBS, 2015). As it is, the system is punitive to those suffering from long-term illnesses. For instance, whereas facility drug shortages only require a patient to purchase a short course of treatment for pneumonia, patients have to pay for much longer and often higher costs, in the case of NCDs such as diabetes and hypertension. This means that NCDs have a higher risk of impoverishment compared to illnesses that are more acute.

In 2017, the Kenyan government announced universal health coverage (UHC) as one of its primary goals (MOH, 2018). The past four years have seen increased discussion on what UHC means, and how it could be attained under prevailing circumstances. Communities, and county and national governments have made effort to implement UHC activities. Yet evidence remains scanty, particularly on expanding access to NCD care and treatment services. There is increased recognition that the most effective solutions will come from strengthening community and primary healthcare services (MOH, 2014).

The role of primary health facilities in screening, detection and management of NCDs cannot be ignored. However, most primary health facilities have minimal capacity to address NCDs as compared to infectious diseases. Previous studies have found primary facilities to be poorly equipped with essential NCD equipment, materials and medicines (RTI, 2016).

In an effort to address these challenges, an innovative revolving fund-based community-pharmacy model to expand access to quality NCD medicines was established in Nairobi County. Community

partnerships were envisioned in the Kenya National Strategy for NCDs. This study proposes to examine the initiative and draw lessons for policy and practice, as there are no published studies on the role of community pharmacies and NCD management in Kenya.

1.3: General objective of the study

To describe the features, sustainability and perceived effectiveness of an innovative community pharmacy model in promoting access to non-communicable diseases medicines at a primary health care center in Nairobi, Kenya

1.4: Specific objectives

i. To describe the features and characteristics of the community pharmacy model implemented in Nairobi County.
ii. To assess the sustainability of the community pharmacy model implemented in Nairobi County.
iii. To assess the perceived effectiveness of the community pharmacy model implemented in Nairobi County.

1.5: Research questions

I. What are the features and characteristics of the community pharmacy model?
II. Is the community pharmacy model sustainable as implemented in Nairobi County?
III. What is the perceived effectiveness of the innovative community pharmacy model?

1.6: Scope of the study

The study was carried out at the Westlands Health Centre, Nairobi County. This is because it was the pilot health center to implement the community pharmacy model in the county.

1.7: Significance of the study

The study findings are important to the government (both county and national) and policy makers. It provides insights on the role and sustainability of innovative community pharmacy models in expanding access to non-communicable diseases medicines in Kenya.

The study findings are important to scholars and academicians. They will enhance the understanding on the role of innovative community pharmacy model in expanding access to non-communicable diseases medicines. They add to the body of knowledge and can be used as reference for future related studies.

CHAPTER 2: LITERATURE REVIEW

2.0: Introduction

In this chapter theoretical framework, empirical review and conceptual framework will be presented. Theoretical framework presents the theory anchoring the study. Empirical review will address findings from published studies on the subject. Conceptual framework will present graphical view of the thematic framework.

2.1: Theoretical review

The study is anchored on resource-based theory of social entrepreneurship. Entrepreneurship creates value by bringing together a unique group of resources to take advantage of an opportunity (Santos, 2009). Social entrepreneurship has been defined as entrepreneurial activity with an embedded social purpose (Austin, J. Stevenson. H. & Wei-Skilben, 2006). Most social entrepreneurship innovations involve new business models that seek to address basic human needs and neglected societal problems for example health, food security and sanitation (Seelos, c & Mair, 2005).

Resource based theory postulates that the competitive advantage of any business innovation lies in the strategic orchestration of valuable tangible and intangible resources at its disposal (J. Barney, 1991). Based on this theory, resources are all assets, organizational processes, or attributes, information, knowledge, etc. controlled by an organization that enable it to conceive of and implement strategies that improve its efficiency and effectiveness. The resources include human, political, financial and social resources. Penrose (1959) maintains that firms can create economic value not due to mere possession of resources, but due to effective and innovative management of resources. Effective application of a firm's resource translates competitive advantage to sustainability (Penrose, 1959).

Resource based theory postulates that resource acquisition and resource management are critical success factors for any venture (J. B. Barney, 2001) . This is because resources are used to gain a profit or as in social entrepreneurship as in this case, to attain sustainability (Day & Jean-Denis, 2016). If acquired and managed well, resources create and capture value together which results in shared value, both for the venture and the community (Porter, M.E., & Kramer, 2012).

The conceptual framework was derived from resource-based theory. The hypothesis was that if the features and characteristics of the community pharmacy are well orchestrated within the contextual environment then efficiency and sustainability would result in the short and long term respectively. This would ultimately lead to the community pharmacy meeting its goal of expanding access to non-communicable medicines.

The sustainability framework proposed by (Alexander et al., 2007) was used to evaluate sustainability of the community pharmacy. The framework highlights two key elements that affect adoption and sustainability of community-based innovations: primary and contextual factors. The primary factors are postulated to affect it directly while the contextual factors affect it indirectly.

The primary factors include outcomes-based advocacy, which is ability of the partnership to effectively identify and communicate benefits of the partnership to internal and external stakeholders, vision-focus balance that is agreement on a broad, long-term vision of community pharmacy, and then to commit to a series of specific actions/initiatives designed to move the partnership toward that vision.

Other primary factors include systems orientation, which is the ability of the leadership to conceptualize community health problems as multiple interacting forces and to envision the solutions to such problems in terms of a coordinated effort of different sectors and actors within and outside the community. Infrastructure development, which is the ability of the partnership to develop internal support systems that foster effective member participation, develops leadership, and avoids overburdening key members and community linkages, which is the ability of the partnership to establish working relationship is with individuals in the community.

The contextual factors include historical /cultural environment, political, economic and physical environment.

2.2: Empirical review

2.2.1: NCD burden

Non-communicable diseases (NCDs) have emerged as the leading cause of death globally, and possibly, one of the greatest threats to human existence in the 21st Century. The Global Burden of Disease 2017 report showed very slow progress in reducing mortality from non-communicable diseases between 1990 and 2017 (GBD, 2017). The report projected that unless proper mechanisms are put in place, NCDs will still contribute to significant deaths by the year 2040.

To curb the rising burden of NCDs, the World Health Organization (WHO) established the Global Action Plan for the Prevention and Control of NCDs 2013-2020. The Action Plan includes nine targets aligned with the 2030 Sustainable Development Goals (SDG) agenda. The targets include a 25% reduction in mortality from NCDs; overall reduction in NCD related risk factors and availability/access to medicines to manage them.

In Africa, the NCD burden has risen over the past decades. Although countries have set up public health infrastructure in line with the WHO targets to monitor the epidemic, conduct primary prevention, screen and treat patients (WHO, 2015), the burden is still on the rise..

The Kenya National Strategy for NCDs' guiding principles and strategic objectives are anchored on the WHO global action plans (MOH, 2014). The strategy recognizes the need to implement cost effective evidence-based measures to curb the rising burden of NCDs, and the need to anchor screening care and treatment on primary health care facilities. However, finding ways to implement these interventions and incorporate them into policy and practice remain a challenge.

2.2.2: Primary Health Care and NCDs Management

People with, or at risk of developing NCDs, require long-term care that is proactive, patient-centered, community-based and sustainable. Such care can only be delivered equitably through systems that are heavy on primary health care (Maher, Harries, Zachariah, & Enarson, 2009). The primary health care model approach was proposed by WHO in recognition of the need to have an integrated approach, community participation, equity, inter-sectoral participation, cost effective and evidence based affordable solutions for the management of NCDs.

Primary facilities are often patients' first point of contact with health services. This makes them the most appropriate locations for screening and early disease detection, continuous care provision for uncomplicated patients, and, referral of patients to specialists. However, most primary facilities in LMICs are neither structured nor equipped to provide the care necessary to patients with NCDs (Maher et al., 2009).

For years, HIV/AIDS and TB have been managed adequately in LMICs at primary health care level. However, this has resulted in a health system that is poorly-equipped to handle the unique challenges that come with NCDs (Atun & Gale, 2015) . Maher et al and most scholars agree that there is need to leverage and scale up existing primary health care infrastructure to manage NCDs better.

Most low- and middle-income countries (LMICs) suffer similar challenges with respect to healthcare services. In Bangladesh, for instance, a study of 349 primary and secondary facilities revealed that none of the facilities had all four readiness factors for provision of NCDs, namely, trained staff, guidelines, essential medicines and equipment (Biswas, Haider, Gupta, & Uddin, 2018). In India, access to medicines for NCDs was found to be a major challenge at primary health center level, with most patients having to buy medicine at private facilities (Elias et al., 2018).

The WHO Package of Essential Non-communicable (PEN) disease intervention study done in Uganda assessed the capacity of the public health facilities to prevent and control NCDs. The study

found that none of the facilities had essential tools, medicine and human resource required to implement effective NCD interventions (Rogers, Akiteng, Mutungi, Ettinger, & Schwartz, 2018). In Kenya, the STEPS project found that in most LMICs, primary healthcare infrastructure was lacking in human resource, essential medicine and diagnostic equipment to effectively manage NCDs (KNBS, 2015).

In light of the challenges faced by primary health facilities in the bid to curb NCDs, some innovative models have been developed. In Asia for example some of the innovative models include a community-based hypertension management program in Vietnam, tele-health physician interventions for chronic care patients in Singapore and a community diabetes strengthening program in Indonesia (Lim, Chan, Alsagoff, & Ha, 2014). In Ethiopia, a community care model was developed by a university Hospital and its allied primary healthcare facilities (Mamo et al., 2007). The model involved nurses at rural health centers being trained to provide care for chronic disease patients, with regular supervision from the hospital physicians. The program allowed treatment to be provided away from the main hospital so that those who could not afford to travel could access care nearer their homes. Improved access has been found to increase requests for care, and to help address the large unmet need for chronic disease treatment (Walley, Graham, Wei, & Weston, 2012).

2.2.3 NCDs and Essential Medicine Supply

Availability of essential medicines at health facilities is a common challenge in LMICs. The WHO Global Action Plan targets 80% availability and affordability of essential medicines for NCDs. The target is unmet in most LMICs. Availability surveys conducted in most developing countries have found suboptimal quantities of essential medicine supply to manage NCDs (KNBS, 2015) .

Adequate human resources, sustainable financing, comprehensive information systems, and coordinated healthcare partners and institutions are key in ensuring uninterrupted availability of essential medicines (Pastakia, Pekny, Manyara, & Fischer, 2017). In India, for instance, patients

often purchase medicines from private pharmacies due to frequent stock-outs at primary health centers, a problem blamed on poor procurement and distribution of drugs from higher levels (Prashanth et al., 2016). In Kenya, stock outs at primary health centers have been attributed to poor financing. For instance, only 900 million was allocated for primary health care in the 2016/2017 national budget to compensate for user fee removal (WHO, 2017b). Previous records show that counties spend only 20% of county budgetary allocation on health out of which a small proportion is allocated to its primary health facilities (WHO, 2017b)

To improve the supply of essential medicines for NCDs, alternative models have been explored. This is because unlike vertical programs like HIV that have considerable donor funding, most NCD programs in LMICs rely on government funding. In the case of India, efforts to supply cheaper generic equivalents of essential drugs in retail pharmacies showed promise (Prashanth et al., 2016). In Kenya, the Novartis Access Program under the Access Accelerated Initiative, provided access to NCD medicines at highly discounted process (Rockers et al., 2019). The Healthy Heart Africa program by Astra Zeneca in Kenya, Ethiopia and Tanzania not only provided access to low-cost hypertension medicines, but also trained facilities on how to establish secure supply chains (AstraZeneca, 2019)

2.2.4: Community Pharmacies and Access to Medicines

Community pharmacies have been used as a channel to finance essential medicines in LMICs. This is occasioned by the inadequate availability to essential medicine. Studies conducted on revolving drug pharmacies have found that they have helped to improve drug availability. A study conducted on three revolving fund pharmacies in Western Kenya showed a marked improvement on availability of essential medicines by over 50% (I. Manji , Simon M. Manyara , Beatrice Jakait, William Ogallo , Isabel C. Hagedorn , Stephanie Lukas, 2016). Patient numbers in the study also improved by over 300% within a period of three years. Political goodwill, community involvement, reliable source of quality medicines, and monitoring and evaluation have been found to be key determinants of a successful and sustainable drug fund system (Ali, 2009).

In addition to promoting availability, community pharmacies allow for better prices for drugs compared to market prices. In revolving fund pharmacies based in the Philippines, drug prices were found to be 83% less expensive than the average market price, with 51% of drugs having a discount of more than 25%. However, due to the community orientation of the RFPs, credit sales were rampant, limiting resources ploughed back hampering financial sustainability. Management of the RFPs by community health workers also required them to be continuously trained to ensure rational drug use and avoid wastage (Masters TC, Westgard BC, Hendriksen SM, Decanini A, Abel AS & CJ, Walter JW, Linduska J, 2019).

In management of chronic conditions, RFPs have been linked to improved patient outcomes. One study in Cambodia demonstrated this and the improved patient outcomes were partly attributed to the constant availability of quality and affordable medicines (Van Olmen et al., 2016) Sustainability of RFP'S is enhanced by the revolving funds and reduced heavy reliance on donor funding and government (Van Olmen et al., 2016).

The downside to revolving drug funds is equity. The UNICEF funded Bamako pharmacy initiative whose primary aim was to promote access to essential medicine for maternal and child health failed partly because it did not offer financial protection to the poorest (Ebrahim, 1993). The application of user fees to poor households drew a lot of criticism, which led to collapse of most of the pharmacies. Instituting user fees to the poorest instead of a subsidy brings about community disharmony and hampers access to essential medical services (Ebrahim, 1993).

2.3: Sustainability of Community Based Pharmacies

Sustainability has been defined as the capacity to deliver affordable, cost-effective solutions over time. This requires that multiple stakeholders work together in a coordinated manner (Braithwaite et al., 2017). A sustainable community pharmacy will have sufficient resources to meet its main objectives and can adapt to a changing environment (Chambers, Glasgow, & Stange, 2013).

Key attributes of a sustainable revolving fund community pharmacy includes: affordability for patients and families, employers, and the government; acceptability to key constituents, including patients and health professionals; and adaptability, because health and health care needs are dynamic (Fineberg, 2012).

Financial planning for a community pharmacy is critical in regards to financial sustainability. It includes assessment of the potential clients, estimation of operating costs, establishment of cost-recovery objectives and definition of the role of subsidies and surcharges if any. Institution of efficient cost recovery mechanisms is critical (Cross et al, 1986).

In Benin, an assessment of a drug revolving fund implemented in two public health facilities showed that multiple factors including government support ,political commitment, maintaining a separate bank account and use of an excel medicine management tool contributed to the sustainability of the pharmacies (Agodokpessi, G., Aït-Khaled, N., Gninafon, M., Tawo, L., Bekou, W., Perrin, C.,Chiang, C. Y, 2015)

Contextual factors for example a vibrant and growing local economy, supportive political environment play a very big role (Umenai & Narula, 1999). In Sub Saharan Africa, where community pharmacies have been implemented, governments and other donors have for the most part, been lukewarm or antagonistic in their support leading to their downfall as evidenced by the failure of Bamako initiative community pharmacies (Uzochukwu, 2002).

Umenai et.al suggests that community participation and oversight is crucial for community pharmacies. The community pharmacy initiative should be introduced as a channel for strengthening and improving health security at the community level in order to get buy in. This is attainable through the promotion of a partnership between the community and health facility staff in the delivery of responsive, appropriate, integrated and acceptable health care of good quality, including rational drug use (Umenai & Narula, 1999).

2.4: Research Gap:

From the reviewed studies and literature, it is evident that there is limited local literature on revolving fund community-based pharmacy models. Most of the published studies have primarily focused on hospital based revolving fund pharmacies and not community based initiatives (Ali, 2009),(Murakami, 2001),(Agodokpessi et al.,2015). Most studies are also dated and there is limited recent data. The available studies also do not address efficiency and sustainability extensively (Ebrahim, 1993),(Ali, 2009). In addition, most of the pharmacies studied have had initial grant capital injected to start off (Ebrahim, 1993),(Ataelseed et al., 2008). This study seeks to fill the research gap by examining an innovative community pharmacy model that relies on user fees primarily for funding and the role it plays in access to medicines for non-communicable diseases. The study will also explore whether the innovative model is sustainable and efficient.

2.5: Conceptual Framework

Resource based theory postulates that the competitive advantage of any business innovation lies in the strategic orchestration of valuable tangible and intangible resources at its disposal (J. Barney, 1991).The study examined how the resources of the community pharmacy had been orchestrated to create competitive advantage in this case efficiency and sustainability within its contextual environment. The framework postulated that the pharmacy would meet its goal to expand access to non-communicable disease medicines if its model was efficient and sustainable.

The framework was used as a guide in development of variables to be measured in the data collection process of the study.

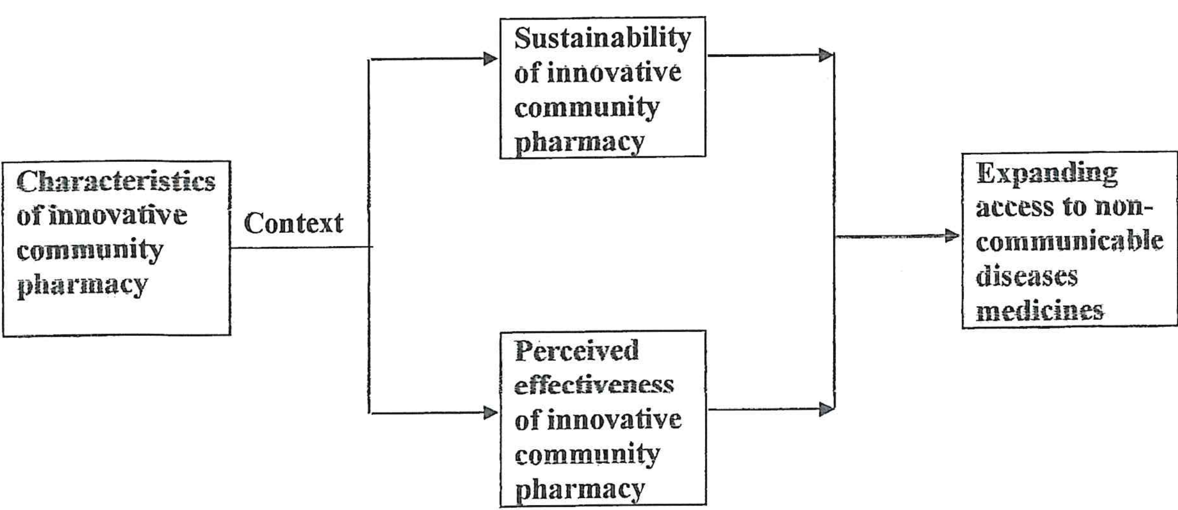

Figure 2.1: Conceptual Framework

CHAPTER 3: RESEARCH METHODOLOGY

3.0: Introduction

This chapter presents the research methodology. The chapter covers the research design, target population, sample size and sampling techniques, data collection instruments, data collection methods, data analysis and presentation and ethical considerations.

3.1: Research Design

This was an exploratory single case study of a revolving community pharmacy in a primary health care center in Nairobi County. A case study is the preferred method when the investigator has little control over events and when the focus is on a contemporary phenomenon within real-life context (Yin, 2003).

The single case method was used since the community pharmacy was a unique case in Nairobi County. Single case method is applicable for studying and understanding of unique and critical phenomena (Yin, 2003) The explorative case study approach was preferred to allow exploration and description of data in real-life environment and at the same time help to explain complexities of real-life experiences that may not be captured adequately through more quantitative research (Zaidah, 2007).

The study approach was primarily qualitative, designed to gain insight into the features and characteristics of the community-pharmacy model, its effectiveness and whether based on sustainability factors adapted from (Alexander et al., 2007), the model could be perceived to be sustainable.

3.2: Study location

The study was carried out at the Westlands Health Centre, a primary healthcare facility under the Nairobi Metropolitan Services in Westlands Sub County, Nairobi County. The Centre mainly serves clients from low-income households in Nairobi and Kiambu counties, most living in the nearby slum areas such as Kangemi. While it focused mainly on providing primary healthcare, the facility recently started providing specialized care through the non-communicable disease (NCD) clinic, driven by a growing demand in the area.

3.3: Population and Sampling

The target population was the management committee of the community pharmacy, patients and providers at the Westlands Health Centre Community Pharmacy. The facility was selected because it was the pilot site selected by Nairobi County for the intervention. Convenience sampling was used to identify patients for inclusion in the study. This method was preferred due to its ease and simplicity. Selection of managers and providers to be interviewed was done purposively, with care being taken to ensure key decision makers were all included, including the management committee leadership and the health facility in-charge.

3.4: Sample Size Calculation

Statistical sample size calculation was not done, as this was a qualitative study. The qualitative paradigm requires that depth and saturation, rather than numbers, determine the sample to be included in the study.

3.5: Data Collection Methods:

Primary data was used to inform the study. The data was collected by use of in-depth interviews. In-depth interviewing is a qualitative research technique that involves conducting intensive individual interviews with a small number of respondents to explore their perspectives on a

particular idea, program, or situation (Cooper & Schindler, 2003). In-depth interviews provide detailed information about a person's thoughts and behaviors or want to explore new issues in depth. In-depth interviews also provide much more detailed information than what is available through other data collection methods. They also may provide a more relaxed atmosphere in which to collect information, people may feel more comfortable having a conversation with you about their program as opposed to filling out a survey. They also allow a researcher to seek clarity if necessary (Yin, 2003). Potential weakness of interviews includes response bias or poor recall leading to inaccuracies. Corroborating information from interview is necessary to address its inaccuracies.

One day was put aside for the patient interviews. On the interview day, patients visiting the facility were selected for the in-depth interviews, after administering informed consent. In total, 10 patients were interviewed, with saturation being attained at that number.

For staff and the health management committee, purposive sampling was used to ensure a representative set of views was captured. In total, five staff were interviewed. These were the facility in charge, two clinicians, one laboratory technician and one pharmaceutical technologist. At the management committee level, the chairperson, treasurer and secretary were interviewed.

3.6: Data Collection instruments

A letter of introduction was obtained from Strathmore University. The researcher conducted the interviews with the help of one research assistant. An in-depth interview guide was used to direct the face-to-face interviews. Interview themes were selected by the researcher from the research questions under study. The interviews were audio recorded (with verbal consent provided) and notes taken to supplement the audio recording.

Audio recordings were transcribed verbatim and translated to English, where necessary. Transcripts were analyzed using the thematic framework approach. The data was coded, charted and categorized into themes derived from the conceptual framework.

3.7: Research Quality

The researcher was keen to ensure that key research elements of validity, reliability and objectivity were maintained. To ensure objectivity, the study ensured the interview research tools met the three stated objectives. This ensured collection of precise and specific information to inform sound data analysis.

To ensure validity and reliability, the researcher corroborated the data from the key research informants. During analysis of the data, systematic coding, transcription and analysis of data was done.

3.8: Study Limitations

The researcher noted ethical dilemma with data collection from staff since they are part of the Sub-County Health Management Team (SCHMT) and thus indirectly viewed as a superior or boss. This was not experienced with data collection from patients and management committee.

The facility health in charge allowed the researcher to collect data from patients during one of the NCD clinic days. This might have introduced selection bias since patients were interviewed on one day.

3.9: Ethical Issues in Research

The study proposal was submitted to Strathmore University Ethics Review Committee to ensure all ethical considerations were met. The respondents were not coerced to provide information; they participated in the study voluntarily. The respondents were assured of confidentiality and privacy of the information provided, to ensure honest and consistent information. In order to ensure anonymity, the respondent's names were not captured in the interview process.

CHAPTER 4: RESULTS

4.0: Introduction

The study sought to examine the role of a community pharmacy model in provision of NCD medicines. Three objectives guided the study: understanding the features and characteristics of community pharmacy model; assessing the model's perceived effectiveness; and assessing its perceived sustainability. This chapter presents findings based on the three objectives.

4.1: Demographic Information of the interviewees

The following table summarizes the demographic information of the respondents

Table 1: Demographic information of the respondents

Respondents	Number	Age	Working/Member period
Patients	10	41-87 years	6 months -7 years
Staff	5	34-41 years	3 years -7 years
Management committee	3	26-45 years	3 years -7years

Table 1 shows the number of patients, staff and management committee interviewed. All the respondents had at least six months experience with the community pharmacy. The respondents were aged between 26 to 87 years. The staff interviewed included the facility in charge, two clinicians, laboratory technologist and pharmaceutical technologist. The management committee interviewed included the chairlady, treasurer and secretary.

4.2: Features and characteristics of the community pharmacy

Based on the interviews done, the community pharmacy model can be characterized as having the following key features and characteristics. These are discussed using the health systems building blocks approach, to ensure all key aspects of the model are considered. The findings are presented below, with selected quotes from interviews. The quotes are presented using the following codes to hide the identity of those interviewed:

Respondents	Number interviewed	Codes
Patients	10	P1-P10
Management committee	3	MC1-MC3
Staff	5	S1-S5

4.2.2: Membership

The community pharmacy membership was limited to patients with diabetes or hypertension or both. Access to medicines was limited to registered patients who paid a monthly fee.

> *MC 1: "...Anyone from anywhere as long they agree with our payments. We have people from everywhere even Nanyuki, Kangundo, Athi river, Machakos (other counties) ...*

Majority of the patients interviewed were by other patients, friends, relatives or by facility staff. Both the management committee and the facility staff agreed that word of mouth was the main channel used to create awareness of the community pharmacy.

> *MC 1: "Since we are not profit-making organization. We rely on word of mouth to create awareness"*

4.2.1: Description of the model

The community pharmacy was founded in 2015.

All the respondents concurred that it's nonprofit in model and relies heavily on monthly user fees to procure and replenish commodities.

> *MC 1: "It was the initiative of the sub- county clinical officer after free medical screening in Sarit Centre. They identified those who had diabetes/hypertension. At that time, there were drugs in the facility but they ran out. They encouraged us to form a support group to manage the condition and to complement what we were not getting in the facilities. We started with 200 Shillings contribution but drugs got expensive. We continued adding until the current 500 Shillings. There are those who are taking more and others less but we support each other."*

All the respondents described the pharmacy differently. Some saw it as a support group initiative, while others perceived it to be a 'chama' (term refers broadly to informal community-based or self-help groups)' or a club of sorts. Some just termed it a clinic or a pharmacy.

The staff were more likely to refer to the model as a clinic or community pharmacy whereas the patients and management committee saw it more as a support group or 'chama'. Regardless of the description, all agreed that the purpose was to support each other to access NCD medicines.

> S1: *"It's a support group where the clients come together and help each other out. There are those who cannot afford the medicine. They give out 500 Shillings each month. There are those who need only one medicine, others 10 but all pay 500 Shillings so that they support each other. Those who cannot afford the 500 Shillings, get the medicine free as long as they are in the system. It is the community versus the facility.*

4.2.3: Financing

The community pharmacy was financed through monthly user fees. Majority of patients interviewed were comfortable with monthly fees, noting that they appreciated the value proposition offered and the fact that costs were lower compared to private hospitals, pharmacies and even some public hospitals like the Kenyatta National Hospital.

P 4: "...Only 500 Shillings for one month. We do not pay more for other services like doctors' consultation, lab or nutritional services

The fee for service model used in public and private hospitals was cited as costly by patients as overall, the total cost is much more than they can afford. Majority argued that since they rely on out of pocket spending, a fee for service model was unsustainable. Most patients interviewed did not have an active medical insurance cover. They argued that the hospitals that covered them under the national NHIF scheme rarely had sufficient commodities, hence their opting to not enroll. Private insurance was generally perceived to be too costly.

A small percentage of the patients are exempt from monthly user fees. Of the 10 interviewed, two said they were exempted from paying the fees. The management committee decides on full or partial waivers on a case-by-case basis.

P7: "For now the group supports me, I don't pay. They did a follow up after I missed clinic for a year. I told them of my situation and they requested that I pay the transport costs and they would cater for the drugs"

A smaller number of interviewees expressed dissatisfaction with the fees. They felt sidelined by the government, noting that patients with other chronic illness like tuberculosis and HIV/AIDS were not forced to make any payments. Both the management committee and the facility concurred that patient satisfaction would be higher if user fees were waived.

The management committee reported that partial waivers were given to all patients in cases where some commodities were available at the facility pharmacy. For instance, a patient could pay 200 shillings instead of 500 shillings. However, none of the patients interviewed had received the partial waivers based on commodity availability at the facility. Staff interviewed had differing views on partial waivers, noting that the 500 Shillings was not even enough and that the partial waivers would affect monthly collections and eventually reduce their ability to purchase commodities, affecting availability.

4.2.4: Regulation

Both the facility staff and management committee were not aware of any regulatory policies governing the operation of community pharmacies in Kenya. As such, it was reported that the community pharmacy is not registered with the Pharmacy and Poisons Board (PPB). The facility staff did not see any need for registration since the pharmacy runs under the oversight of the facility. On the other hand, the management committee saw the community pharmacy as an informal establishment, and had had it registered as a self-help group under the ministry responsible for culture and social services since 2015, with renewal done annually.

4.2.5: Operations and services provided

The community pharmacy operated under the premises that housed the diabetes and hypertension clinics, which were run twice each week. All patients were registered and seen by the clinical officer/medical doctor at the health centre. Apart from consultation and commodities, patients had access to all other services, including triage, consultation, lab, nutrition and pharmacy services.

> P1.... "*We have cards for the clinic. You wait in the waiting area and service is provided on a first come basis. Once inside, blood pressure, blood and height taken. Then you are asked questions concerning how you are feeling. From there, you are given the drugs you need. All the drugs even if three, four, or five types for 500 Shillings a month*

4.2.6: Supply chain

The community pharmacy purchased supplies from the Mission for Essential Drugs and Supplies (MEDS), a faith based pharmaceutical supplier. MEDS supplied commodities directly to the facility. It was preferred to other suppliers for cost reasons, but also because it was reliable and delivered at no extra charge.

MC 2: "*We buy our drugs from MEDS since they are very affordable. It was through this facility that we got an account at MEDS because we needed prescribing doctors for essential medicines*".

The drugs were received, recorded into bin cards and stored. To avoid conflict of interest, the facility and community management had agreed in the formative stages that commodities would be stored and managed separately from other facility commodities provided by the county. There was a feeling by some staff that the facility should be involved actively in commodity management especially in the ordering and dispensing steps. Some staff described scenarios where the community pharmacy has procured commodities already in the facility or dispensed commodities available in the facility. The respondents argued that if the concept is to complement what is not available at facility level, information flow between the two parties would need to be synergized for efficiency and sustainability purposes.

4.2.7: Human resource

A number of staff were involved in management of the community pharmacy patients. The health centre provided the staff. They included clinicians, lab technologists, pharmaceutical technologists, records officers and nutritional officers. The management committee managed the financial component and commodities (records and storage).

The majority of those interviewed noted that human resource was a critical part of the clinic. However, they also observed that high staff turnover presented a major challenge. Most patients expressed their preference to having consistent clinicians for follow up.

4.3: Perceived effectiveness of the community pharmacy

Effectiveness was explored by asking questions on the stock-out rates for commodities, retention rate of clients and inclusivity/equity.

4.3.1: Stock-outs

All respondents agreed that stock-outs were not a major issue, except in circumstances where the suppliers did not have the commodities. The management committee reported that they have had to adjust the monthly contribution over time to cover inflation and increased cost of drugs to ensure that patients receive what is needed.

To ensure patients received what they needed, the clinicians reported that they had at times adjusted patient treatment regimen to what was available at the community pharmacy. However, they observed that this was an exception rather than the norm.

> *P1: "There's a drug I missed. When I came here, I was taking Glucomet, which is not available here. They changed the drug. I have not missed any since".*

There were instances where clients insisted on particular brands, which were too costly to stock. These clients paid an extra amount on top of the monthly contribution to cater for their needs, which allowed that pharmacy to stock the products.

> P4: *"There are drugs that don't go well with me. I have to use the original Glucophage. I add extra 200 Shillings to get the original if it's not available."*

The community pharmacy was limited to diabetes and hypertension medicines, yet some patients had other comorbidities. They felt that the range of medicines stocked should be expanded.

4.3.2: Retention of clients

At the time of the study, the community pharmacy had roughly 500 registered clients, with about 450 being reported as active. Both the management committee and facility felt the retention rate was fairly good. This was attributed to the value and benefits provided.

4.3.3: Equity and inclusivity

The management committee discussed waivers and exemptions on a case-by-case basis for clients who could not afford the user fees. At the time of the study, five patients were on the exemption list, meaning they did not pay for the commodities. All five were disabled persons. In some instances, one-off waivers were given, and at times, commodities issued on credit.

> P3 -"*We have some old, disabled members who can't afford. The 500 Shillings contribution helps to buy medicines for us all"*

4.4: Sustainability of the community pharmacy

Sustainability was evaluated through criteria adapted from a sustainability framework by (Alexander et al., 2007). Five broad sustainability factors, which are outcomes-based advocacy, vision focus balance, systems orientation, community involvement, infrastructure development and context were evaluated as follows:

4.4.1: Outcomes based advocacy

4.4.1.1: Documentation of value-created and value-added

There was strong awareness and recognition of measuring value created and added by both the facility and the management committee. However, there was little consensus on how to assess value-addition. While some facility staff and committee members felt that the health information system used by the pharmacy captured data that demonstrated value, the system did not have an analytic component that would have made it effective in tracking the value added.

The management committee also used photographic evidence to demonstrate value. The photos were mainly taken during events such as the annual general meetings and training forums. They used these for advocacy purposes with stakeholders like county and sub county health management teams and potential partners like non-governmental organizations.

4.4.1.2: Communication of value added

The management committee and facility/sub-county/county health management teams shared success stories with partners/stakeholders, emphasizing the value added by the community pharmacy. However, there were no structured communication mechanisms. Partners reported to have collaborated with the community pharmacy include Afya Pap, AAR and Malteser International.

> *MC 1: "Afya pap gave us glucometers for free. They also gave us strips for more than 3 months. They is also an app they provided to track blood pressures and sugars daily. KDDA-Kenya Diabetes Association introduced us to Afya pap. They selected us from a number of support groups".*

4.4.2: Vision focus balance

This was no clear consensus on the vision and long-term goals of the community pharmacy. Respondents gave differing views.

> *P2: "I have not seen any vision. I can only say it's for you to heal".*

> *S2: "They (management committee) have their own plan. We are not involved."*

The short and long-term goals of the community pharmacy were not clearly defined either. Majority of the respondents had differing/conflicting ideas on these goals.

> *MC 1: "Somebody to support us with a container, somewhere separate from the facility with the support of ministry of health with a dedicated 'daktari' (doctor) and pharmaceutical technologist"*

> *MC 3: "We are tied down by our finances. We can't think long term"*

4.4.3: Systems orientation

4.4.3.1: Leadership structure

A good percentage of the respondents had a clear understanding of the leadership structure, which was described as consisting of a management committee composed of a chairperson, vice chairperson, secretary, treasurer and two representatives from the health facility. Leaders were selected through voting by the members during an annual general meeting. The term of office for elected leaders was two years. Officials from the Ministry of labour and social protection oversaw the elections as returning officers.

Some newer members had incomplete information on the management committee/structure.

> *P9: "We don't know. She told me she is the one who had been sent here to run. She organizes with doctors to see us".*

Some reported that although the election process was democratic, some officials had been in office since the start of the pharmacy. They proposed that the constitution be reviewed to define the number of times a person can vie.

On leadership and management training, the management committee members noted that they had not received any training. In addition, there was no structured mechanism to induct and train new managers into the respective positions.

4.4.3.2: Financial management

The pharmacy operated a basic system, where the treasurer would collect user fees from the patients on every visit. The money collected would be used to pay operational costs such as transport reimbursements for officials and then the difference would be deposited in the bank. Financial records were shared during the annual general meetings. However, some members admitted they had little awareness on how finances were managed. None of the officials had been trained on financial management and accounting.

MC 1: *"We just use the mathematics we did in school. I'm a treasurer in other chamas. I had gone for a training by Kenya women finance trust, the government one. I use that 'ka-knowledge' (implies scanty knowledge) in our bookkeeping. During the annual general meeting, we print our records for one whole year".*

4.4.4: Community involvement and linkage

The role of the pharmacy in the community was well defined. However, there was no documented strategy to generate broader community participation and linkage to the community pharmacy. There had been no documented activities or collaborations with other organizations/partners geared towards increasing community capacity and improving community visibility.

MC 2: "Since we are a nonprofit making organization, we rely on word of mouth."

There were efforts by the community pharmacy to better include disenfranchised groups in the community. Two of the patients interviewed were disabled (one blind and another with a limb anomaly). The two reported that their monthly user fees had been waived.

The health facility management expressed concern that excessive emphasis on community leadership and participation could put partnership sustainability at risk. In addition, both staff and the management committee cited conflict of interest

S2: "It also comes with the monthly user fees on occasions where the commodities are available at the facility pharmacy. Why should the clients pay when we have the commodities available in our pharmacy? Sometimes, we have noticed the patients or the clinicians do not know that the commodities are available in the pharmacy"

4.4.5: Infrastructure development

There was deliberate effort directed towards planning for, and, addressing the short-term needs in the areas of staffing, leadership and financing by both the facility and community pharmacy

management committee. However, little long-term planning was done. In addition, there were no defined/written responsibilities between the facility and the management committee on infrastructure development.

4.4.6: Context and sustainability

The context was evaluated in terms of history, culture, economic, physical and political environment. Most respondents did not see a relationship between context and the sustainability of the pharmacy.

Cultural factors (for instance, beliefs about diabetes/hypertension) were reported to have an effect on attracting and retention of clients. For instance, there were some beliefs about the diseases being a curse, while others could not reconcile taking medicines for the rest of their lives. Value based advocacy through patient education and counselling was cited as an effective mechanism of dealing with some of these cultural-related factors.

Political factors were reported to have some effect on the pharmacy. As the community pharmacy was run in partnership with the facility, some staff and committee members identified some unique challenges like conflict of interest. For example, some staff felt they should not pay monthly user fees if they needed community pharmacy services.

The physical environment was reported to affect the community pharmacy in terms of space and autonomy since the clinic and pharmacy was housed within the medical facility. The long-term plan was to have the community pharmacy operate independently with its own staff and space.

The monthly user fee mainly affected the economic environment. Some patients suggested that they would be happier if they did not have to pay, as was the case for HIV and TB services. The COVID-19 pandemic was reported to have made matters worse.

P2: "I have not been working since March 2015, so sometimes it's difficult. Remember, there is transport costs too

P7: "If the government can assist, with buying drugs/subsidy, we'd be more comfortable.

CHAPTER 5: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.0: Introduction

This chapter presents discussion of the findings based on the study objectives and broader literature, linking findings to previous studies in similar areas. The chapter ends with conclusion of key aspects and recommendations for policy and future research.

5.1: Discussion of findings

The study sought to understand the community pharmacy model in Westlands Health Centre, its features, efficiency and sustainability through eliciting opinions and perceptions of patients, staff and management committee. Data was primarily collected through in-depth interviews.

On operations and features of the community pharmacy, there was clear understanding by majority of the respondents on how it works that is why it exists, who can join, user fees and the medicines available. This could be partly attributed to the onboarding protocols (though not documented) for patients into the community pharmacy and the communication mechanisms within the health centre. Onboarding has been found to be a useful tool for nurturing client relationships as it helps to manage expectations (Gill, McCarthy, & Grimmett, 2019). Through onboarding, a client is able to understand the value proposition, what to expect and what not to. It is also a good avenue for clients to ask questions and clarify any misconceptions. It ensures that concerned parties are on the same page (Gill et al., 2019).

However, some newer patients did not have a clear understanding of the composition and roles of the management committee. They were poorly oriented, which often happens whenever programs operate over a long period. The phenomenon of ignoring client needs has in the past been cited as a contributor to program ventures failing at their peak (Berry, 1999) .

An efficient drug system should expand access and promote consistent availability of quality NCD medicines at an affordable cost (Umenai & Narula, 1999). This study demonstrated success in promoting consistent supply of NCD medicines. Similar findings have been reported in studies looking at community pharmacies across different countries in sub-Saharan Africa (I. Manji et al.,2016) (Murakami, 2001), (Ebrahim, 1993) . In addition to expanding access and availability of NCD medicines, the affordable cost was a great incentive to the clients. This was similar to study findings on revolving fund pharmacies in the Philippines (Ii & Iii, 2012).

Patient satisfaction has been linked to various causes, including patient expectation, perceived service quality, product quality, perceived value, and price, among others (Zhang, Yu, Yan, & Ton A M Spil, 2015). Patient satisfaction was relatively high among the community pharmacy users, who attributed this to the medicines and additional value brought by the community pharmacy. The benefit included free consultation, laboratory services, nutritional services, support group and a welfare/communication forum (coordinated through a WhatsApp group for members). This is a shift from studies on community pharmacies as most are not well integrated with the local healthcare system and operate independently contributing to their failure in the long term (Cross et al), (Ataelseed et al., 2008), (Agodokpessi et al., 2015).

Providing waivers and discounts to vulnerable groups increased buy-in from the community. This contrasts with the UNICEF-funded Bamako Initiative community pharmacy programs in Africa in the 1990s, which were reported to have failed partly because they did not offer financial risk protection to the poorest (Ebrahim, 1993).

Based on the sustainability factors analyzed (outcome-based advocacy, systems orientation, community linkages, vision focus balance and infrastructure development), the community pharmacy model studied appeared to be sustainable. This is partly due to a conscious recognition of the gaps by both the facility and management committees. Consensus building between the community and facility on how to strategically address the gaps in the sustainability factors is thus critical (Alexander et al., 2007). However, it would be misleading to suggest that if the community

pharmacy simply just focused on developing capacity in these five areas, the community pharmacy would be sustainable. Other factors for example contextual factors would come into play (Fineberg, 2012)

The context within which the community pharmacy operates provides more or less salience to each of the sustainability factors as they affect value creation (Alexander et al., 2007). Knowledge and understanding of contextual factors and how to respond and adapt to them is very critical (Brathwaite et al). Overall, the management committee has clear understanding of the context and how to adapt to it. For example, emphasis on patient education and outcome-based advocacy to mitigate cultural beliefs regarding hypertension and diabetes and providing waivers/discounts for clients who cannot afford medicines. In response to the COVID situation, the pharmacy collaborated with Afya-Pap (a non-governmental organization) for home delivery of medicines to cater for the elderly population who were more vulnerable to the infection.

In an effort to create value, the community pharmacy faced a challenge in balancing between being reliant on the health center and operating as an independent entity. This is a common challenge among community pharmacies (Murakami, 2001). The community pharmacy relies heavily on the facility for staff, physical space and regulation/oversight. If the community pharmacy is to exist independently as envisioned by some management committee members, it would have to reconsider its financing needs and options for sustainability as user fees alone would not suffice. More funds would be needed to cater for needs such as rental space and staff wages/salaries. The added value through operating independently would also need to be reevaluated (Alexander et al., 2007).

If the community pharmacy were to continue the partnership with the health centre, an effective and detailed engagement tool for example a memorandum of understanding (MOU) would need to be formulated to show clear terms, roles and responsibilities of the two partners. It would also be prudent to agree on a roadmap, develop a theory of action and periodically reassess the

partnership and its activities to ensure it is directed towards agreed goals and lasting value for the community (Fineberg, 2012).

Conflict resolution mechanisms are critical for the success and sustainability of any joint venture/partnership (Fineberg, 2012). There were areas of conflict of interest noted between the facility and community pharmacy. These include staff payment of user fees to access medicines from the community pharmacy, the facility not having dedicated clinicians to attend to patients on clinic days and the payment of user fees by patients on occasions where commodities are available in the facility pharmacy. The conflict areas have been not effectively addressed over time, as they keep recurring. This could contribute to failure of the community pharmacy in the end as was seen in the Bamako community pharmacies.

5.3: Conclusion

Based on the study findings, the following conclusion were drawn from the study. The features of the community pharmacy from financing, leadership, human resources, services and commodities provided, were well understood by most patients, members of the management committee and the health facility staff. The onboarding protocols (where new members are oriented) played a great role in ensuring everyone is on the same page. However, some patients particularly the new ones were not clear on areas like the current management committee structure. The terms of engagement between the two founding partners, (health facility and community pharmacy) were also not clearly defined.

Secondly, the study revealed the community pharmacy had met its goal to promote access and availability of NCD medicines. It was deduced based on the study findings that patient satisfaction was high due to the access and affordability of the medicines and the added benefits the community pharmacy came with. In addition, it was deduced that equitable access by providing waivers/discounts to the vulnerable has contributed largely to inclusivity and community buy in.

Thirdly, it was concluded that the community pharmacy had high potential for sustainability with focus and strengthening of the five sustainability factors. It was clear that a foundation had been set for sustainability but the impediment was everyone was not on the same page .There was need for instance to agree on how to measure, document and communicate value created and added by the community pharmacy, to establish vision and long term goals of the community pharmacy, to formulate a clear and documented strategy to generate broader community participation and linkage to the community pharmacy, to develop leadership skills and strengthen financial management .

Finally, it was deduced that the awareness and adaption to the contextual environment by the community pharmacy was a positive indicator to the potential for sustainability of the community pharmacy. However, the unresolved conflict of interests between the management committee and the facility management on some issues was a limiting factor to the sustainability of the community pharmacy.

5.4: Recommendations

5.4.1: Implications for policy

Based on the study findings, it was evident onboarding protocols with specific role definitions play a critical role in defining operations as well as manage patient expectations. It is therefore important to have clear and documented onboarding protocols with specific role definitions before operationalization of any community pharmacy. For partnerships, as was the case in the study, it should also be clear on whose role it is to orient the new clients to the community pharmacy-whether the facility or the management committee.

Secondly, the need for clear and documented terms of engagement between the community pharmacy and the facility emerged as crucial. An MOU would be an effective tool that can be used to define the responsibilities of each party, provide the scope and clarify terms. Failure to have an MOU can lead to role duplication, misconception and disharmony among partners. In this regard, an MOU should be mandatory at the formative stages of any community pharmacy model.

Thirdly, the need to agree on how to measure, document and communicate value created and added by the community pharmacy was evident. This is very critical to build on outcomes-based advocacy to the patients, community as well as other stakeholders. The other stakeholders here could be non-governmental organizations, Ministry of Health, and the County Government amongst others. A robust management information system with an analytic component would need to be considered to capture as well as track the data on defined indicators. On stakeholders, proper stakeholder mapping based on needs, interests, power and legitimacy should be considered for effective engagement.

Fourthly, there is need to create shared vision and long-term goals of the community pharmacy. These will need to be clear to all stakeholders including patients and facility staff. The scope of the pharmacy in the long term should be defined, for instance, in the long term is there room to expand to other essential medicines or the community pharmacy is limited to NCD medicines. An implementation matrix towards the vision and long-term goals will be crucial as well as a monitoring and evaluation plan.

Moreover, there is need to formulate a clear and documented strategy to generate broader community participation and linkage to the community pharmacy. This is important for the visibility of the pharmacy in the community. The community pharmacy could have activities or collaborations with other organizations/partners geared at increasing community capacity and improving its visibility. The activities could include diabetes and hypertension screening, patient education on prevention and management of diabetes and hypertension among others.

On systems and infrastructure development, there is need for a long-term needs assessment on financing, human resource and leadership. With growing numbers day by day, the community pharmacy needs elaborate financial, human resource and leadership plans in line with the vision and long-term goals. Resource mobilization through engagement of stakeholders for example ministry of health, donors and non-governmental organizations will be necessary to operationalize the plans. Outcome/value-based advocacy based on measured and documented data will be an effective strategy to engage targeted stakeholders. Capacity building in leadership and management as well as financial management for the management committee should also be prioritized.

To deal with conflict of interest, there is need to develop a documented conflict resolution protocol. In instances where conflict resolution is difficult, a win-win situation between parties should be sought instead of escalating the process.

On a national level, the role of the Pharmacy and Poisons board (PPB) on registration and regulation of this innovative and emerging community pharmacy model should be considered and defined.

5.4.2: Implications for further research

The study focused on qualitative methods to understand features, efficiency and sustainability of the innovative community pharmacy model. In future, dependent on implementation of other community pharmacies, quantitative methods can be used to quantify efficiency and sustainability of several community pharmacies. The quantification would help to clearly identify what is working (best practices) versus what is not working.

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APPENDICES

Appendix I: Consent Form

Title of Study: Examining the role played by an innovative community pharmacy model in expanding access to non-communicable disease medicines in Nairobi, Kenya

Description of the study

You are invited to participate in a study conducted by Rebecca Musyoki, an MBA in Healthcare Management student at Strathmore University Business School. The study aims to understand the role played by Westlands Health Centre Community Pharmacy in expanding access to non-communicable disease medicines in Nairobi, Kenya Your participation is voluntary and it will involve being interviewed. The interview may be audio-recorded for study purposes only.

Risks

There are no anticipated risks associated with taking part in this study.

Perceived benefits

The findings of this study will contribute to the existing body of knowledge in health systems research. The findings will also be used to give feedback to the respective institutions for service improvement. The results will also be useful in planning for quality and patient-centered health service delivery in Kenya.

Confidentiality

The information collected will be treated with utmost confidentiality and anonymity of the participants will be maintained at all times, during and after the study. The primary data collected will be kept securely and will only be used for this research.

Voluntary participation

Your participation in this study is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time. You will not be penalized in any way should you decide not to participate or to withdraw from this study. No monetary compensation or otherwise is expected.

Contact information

For clarifications and inquiries on the consent, please contact:

Rebecca Musyoki
0725 417600
Institute of Healthcare Management.
Strathmore University Business School.

Alternatively, if you would like to contact someone independent anything about this research please contact:

The Secretary–Strathmore University Institutional Ethics Review Board,
P. O. BOX 59857, 00200, Nairobi,
Email ethicsreview@strathmore.edu
Tel number: +254 703 034 375

Consent

I have read/been read to this consent and have been allowed to ask questions. I give my consent to participate in this study.

- ☐ I AGREE TO TAKE PART IN THIS RESEARCH
- ☐ I DO NOT AGREE TO TAKE PART IN THIS RESEARCH

Section 2: Features and characteristics of the community pharmacy

1. How does the community pharmacy work? ....
2. Who can benefit from the community pharmacy? ....
3. How did you find out about the community pharmacy? ....
4. How do you pay for the medicines available at the community pharmacy? ....

Section 3: Sustainability of the community pharmacy (adopted from a sustainability framework)

1. Is the value added/created through the community pharmacy documented? If not, do you think it is necessary?

....

2. Is the value added communicated to internal and external stakeholders for example patients, partners and staff?

....

3. If so, what are the communication channels used?

....

4. Do you know the vision of the community pharmacy?

....

If yes, what is it? ....

5. Do you know of any strategy to foster community linkages and generate broader community participation? If so, elaborate

....

6. Do you know of any plans to address the short- and long-term needs such as human resource, leadership development and financing. If so, elaborate?...

7. How does the historical context/culture, political, physical, and economical environment affect the community pharmacy?

....

Section 4: Effectiveness of the community pharmacy

1. Have you missed any NCD medicines at the community pharmacy? ....

2. Have you had challenges paying for the medication? ....

Section 5: Recommendations

What would you recommend to be done differently to improve the services of the community pharmacy? ....

Appendix III: In-depth Interview for Staff

Section 1: Respondent Information

1. Name:
   ....
2. Age:
   ....
3. Gender:
   ....
4. Occupation:
   ....
5. How long have you been a staff at Westlands Health Centre?
   ....
   ..
6. What role do you play in regards to community pharmacy?
   ....

Section 2: Features and characteristics of the community pharmacy

1. Describe briefly the supply chain cycle from ordering of commodities, receipt, storage and distribution? .
2. Who is the supplier of the commodities and why?
3. Who can benefit from the community pharmacy? How is market awareness created to a potential client of the community pharmacy?
4. How do clients for the medicines available at the community pharmacy? For example, monthly fee or itemized cost per drug?
5. Describe the services a client can access from the community pharmacy?
6. Describe the financial and human resource management aspects of the community pharmacy?

Section 3: Sustainability of the community pharmacy (adopted from a sustainability framework)

1. Is the value added/created through the community pharmacy documented? If not, do you think it is necessary?

....

2. Is the value added communicated to internal and external stakeholders for example patients, partners and staff?

....

3. If so, what are the communication channels used?

....

...

4. Do you know the vision of the community pharmacy?

....

If yes, what is it? ....

5. Do you know of any strategy to foster community linkages and generate broader community participation? If so, elaborate

....

6. Do you think there is focus to systems thinking in that the leadership recognizes that community health problems are because of multiple interacting forces that need to be dealt with in a coordinated way? For example, through strategic planning, community capacity building and leadership development

7. Do you know of any plans to address the short and long term infrastructure needs such as human resource, leadership development and financing. If so, elaborate?...

8. How the historical context/culture, political, physical, and economical environments affect the community pharmacy?

....

....

Section 4: Effectiveness of the community pharmacy

1. Has there been stock outs of NCD medicines at the community pharmacy?

....

2. How does the community pharmacy respond to clients who cannot afford the medicines?

....

3. How many clients have been enrolled in the community pharmacy?

4. What is the current retention rate of clients in the community pharmacy?

Section 5: Recommendations

What would you recommend to be done differently to improve the services of the community pharmacy? ....

If yes, what is it?

5. Do you know of any strategy to foster community linkages and generate broader community participation? If so, elaborate

....

6. Do you know of any plans to address the short and long term infrastructure needs such as human resource, leadership development and financing. If so, elaborate?..

7. How the historical context/culture, political, physical, and economical environment affects the community pharmacy?

....

Section 4: Effectiveness of the community pharmacy

1. Has the community pharmacy had stock-outs of NCD medicines?

2. How does the community pharmacy deal with clients who cannot afford the medicines?

Section 5: Recommendations

1. What would you recommend to be done differently to improve the services of the community pharmacy?

   ....

APPENDIX V: Ethical Clearance Letter

12th May 2020

Mrs Musyoki, Rebecca
rebecca.musyoki@strathmore.edu

Dear Mrs Musyoki,

RE: Examining the Role Played by An Innovative Community Pharmacy Model in Expanding Access to Non-Communicable Disease Medicines in Nairobi, Kenya

This is to inform you that SU-IERC has reviewed and approved your above research proposal. Your application approval number is **SU-IERC0695/20**. The approval period is **12th May 2020 to 11th May 2021.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-IERC.
iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-IERC within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-IERC within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to SU-IERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://oris.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely,

for. Dr Virginia Gichuru,
Secretary; SU-IERC

STRATHMORE UNIVERSITY INSTITUTIONAL ETHICS REVIEW COMMITTEE (SU-IERC)
12 MAY 2020
TEL: +254 (0)703 034 000
P. O. Box 59857 - 00200
NAIROBI - KENYA

Cc: Prof Fred Were,
Chairperson; SU-IERC

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APPENDIX V1: NACOSTI Approval Letter

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 181044

Date of Issue: 11/June/2020

RESEARCH LICENSE

This is to Certify that Ms.. Rebecca Ndungwa Musyoki of Strathmore University, has been licensed to conduct research in Nairobi on the topic: Examining an innovative community pharmacy model in expanding access to non-communicable disease medicines in Nairobi, Kenya for the period ending : 11/June/2021.

License No: **NACOSTI/P/20/5284**

181044

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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