INFLUENCE OF DIABETIC MANAGEMENT PROGRAM ON RETENTION OF DIABETIC PATIENTS, A CASE OF BURNT FOREST SUB DISTRICT HOSPITAL, KENYA

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DECLARATION

This research is my original work and has not been presented in any other university.

…….. ……..

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L50/76926/2014

This research project report has been presented for examination with my approval as the University Supervisor

…… …….

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DEDICATION

I dedicate this research report to my family, my husband, Nicholas Chebon for his financial support, My children Vincent, Festus and Victor for their moral support.

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ABBREVIATIONS AND ACRONYMS

BP: Blood Pressure

CDA: Canadian Diabetes Association

FBG: Fasting Blood Pressure

HAI: Health Act International

HICS: High Income Countries

IDF: International Diabetes Federation

LAMICS: Low and Middle Income Countries

PPBG: Post Prandial Blood Pressure

SSA: Sub Saharan Africa

SBP: Systolic Blood Pressure

UKPDS: United Kingdom Prospective Diabetes Study

WDF: World Development Federation

ABSTRACT

Diabetic diseases are now the major cause of death worldwide (WHO 2013). The study assessed the influence of diabetic management program on retention of diabetic patients, a case of burnt forest sub district hospital. The study was guided by the following research objectives to: establish how screening program influence retention of diabetic patients; assess how follow up care influence retention of diabetic patients; determine how awareness or sensitization programs influence retention of diabetic patients; examine the influence of the staff training programs on the retention of diabetic patients; assess the extent to which the clinical care programs affect the retention of diabetic patients. The study adopted descriptive research design where diabetic clinic in Burnt Borest Sub District Hospital was studied. The population under the study included clinicians, nurses and diabetic patients. This study employed stratified random sampling method as a technique of probability method, which was done according to the clinic structure. Purposive sampling technique was used to select clinicians and nurses while simple random sampling technique was used to select diabetic patients under diabetic management program. Questionnaire and interview schedule was used as the main instruments of data collection for this study. The data obtained from the research instruments was analyzed using Statistical Package for Social Science (SPSS) version 20. Descriptive and inferential statistics was used in analyzing the data. Descriptively frequencies and percentages was used to analyze demographic data, while testing variables in hypothesis was inferentially analyzed using multiple regression model. The findings of the study were that, 92.4% of the responses were of the opinion that the proper follow up support programs enhances the retention of diabetic patients. The study revealed that educational programs promote the diabetic retentions. The study recommended that educational program in clinical care should be encouraged in order to educate the patients in best self-management service in controlling diabetic.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Diabetic diseases are now the major cause of death worldwide (WHO 2013). Contrary to popular belief, these deaths are not only occurring in the 'affluent countries'. In fact, low- and middle income countries carry the highest burden (Young, 2015). According to WHO, 80% of chronic disease deaths worldwide occur in LAMICs. In 2013, the burden of non-communicable diseases was assessed in 23 low and middle income countries, showing that they accounted for 50% of their total disease burden.

Moreover, in these countries, diabetic disease develops at an earlier age than in high-income countries, often resulting in a prolonged period of disability before death. The death rates from these potentially preventable diseases are also higher in LAMICs than in HICs, especially among adults aged 30-69 years (Strong, 2013). The prevalence of diabetic disease, and the morbidity and mortality associated with them, is only expected to rise in the upcoming decades. By 2020, it is predicted that non-communicable diseases will account for 80 percent of the global burden of disease, causing seven out of every 10 deaths in developing countries (Boutayeb & Boutayeb 2013).

Patients with diabetes are vulnerable to nerve and vascular damage that can result in loss of protective sensation, poor circulation, altered biomechanics of the skin trauma. Insufficient knowledge and improper self-care behavior related to care can increase the risk of ulceration and lower-extremity disease impacts (American Diabetes Association, 2013 & 2010; Canadian Diabetes Association, 2015. Ulceration and subsequent lower extremity amputation are common, serious, and expensive chronic complications for patients with diabetes (Alberti, Zimmet,

DeFronzo, 2013). Thus, several provincial and national (ADA, 2013; CDA, 2015; Registered Nurses Association of Ontario, 2013), as well as international organizations (International Diabetes Federation, 2013, World Health Organization, 2011) have set a goal to decrease the incidence of ulceration and lower-extremity disability by 50% among patients with diabetes because of the high incidence of disabilities, death and health care cost for ulceration (Assal, 2011).

Lower extremity disability among patients with diabetes is associated with high personal, family, social, and economic burden (Boulton, Vileikyte, Ragnarson-Tennvall, &Apelqvist, 2013; Driver, Goodman, Fabbi, French, & Andersen 2010; Vileikyte, 2014). Empirical evidence suggests that the devastating consequences of complications could be prevented in most cases . Educational interventions aimed at reinforcing appropriate care play an important role in preventing ulcerations (CDA, 2015, BASTIAENS, 2013&2013; BASTIAENS (2014), Reiber, Sanders, Janisse, & Pogach, 2011; Singh, 2013). However, during the past two decades, most studies have focused primarily onpatient education to prevent complications among patients with diabetes, who, for the most part, were at high risk for ulceration (Choudhury, 2015).

Results of a systematic review suggests that patients' knowledge and performance of self-care were improved following educational interventions, and that ulceration and amputation in high risk patients were reduced on a long term basis . Little is known about the effects of educational interventions for patients who are at low risk for ulceration. Therefore, it is important to examine the feasibility, acceptability and effects of the educational intervention in adult patients with diabetes at low risk for ulceration. Diabetes is a serious, life-long condition.

In Africa, the prevalence of diabetes is increasing annually. It affects more than 2 million South Africans. Diabetes and its complications are the leading cause of death. Ulceration and subsequent amputation of and expensive chronic complications for patients with diabetes. It represents a major medical, social and economic problem all over Africa and the world (Singh , 2013; Pelt, 2012).The prevalence of ulceration ranges from 4% to 10% among patients with diabetes based on results of recent studies (Beran, Yudkin JS,2014). The lifetime risk of developing an ulcer could be as high as 25% in a patient with diabetes (Boulton, 2013; Singh, 2013). If not treated appropriately, the ulceration contributes to a high rate, up to 85%, of lower extremity amputation (BASTIAENS (2014) , 2011; Pecoraro, Reiber, & Burgess, 2011; Ragnarson-Tennvall & Apelqvist, 2012). ulcerations and subsequent amputation are associated with high diabetes-related hospitalizations, emotional reactions, physical suffering, as well as lossof productivity and quality of life, and huge financial losses both in developed countries and in developing countries especially in Africa (ADA, 2013; Boulton, 2013; CDA, 2015; Meijer, Trip, & Jaegerset, 2012; Driver, 2010; Ragnarson & Apelqvist, 2012; Vileikyte, 2012;Vileikyte&Boulton, 2012).

In Kenya since the International Diabetes Federation declared diabetic a threat to human survival, the government and other stake holders took a step to increase awareness of problems in persons with diabetes (Broom, Whittaker, 2013) in view of the vast personal, social, medical, and economic costs of what should be one of the most preventable long-term complications of diabetes. The high prevalence and serious complications of ulceration demand the development of an educational intervention to raise awareness among patients with diabetes of the risk factors for ulcerations that include decreased sensation, poor circulation, altered biomechanics, a history

of previous ulceration, and poor self-care behavior and limited self-care knowledge (BASTIAENS, 2014). The goal of educational interventions is to assist patients with diabetes to address modifiable risk factors that are amenable to change and prevent the occurrence of ulceration (Beaglehole, 2011).

Despite this studies emphasis still needed to be affirmed in Uasin Gishu County to have its course taken the right way towards zero tolerance and management of this vice to human survival. Furthermore, despite the high incidence of ulceration and lower extremity disease, patients with diabetes lack adequate self-care knowledge. Fewer than 40% of patients with diabetes have received formal education about their condition and its management as exemplified globally (BASTIAENS, 2013 & 2013). Several national and international organizations have emphasized on the importance of enhancing patients' knowledge of self-care. Studies have identified that patient education on self-care plays a significant role in preventing complications in patients with diabetes (Bryant, Greenfield, Chisholm, Campbell2014,; Singh ., 2014). Empirical evidence showed that the risk of diabetes-related complications can be reduced by an estimated 49 to 85 % by proper preventive measures, disseminated through self-care education (Bryant, Greenfield, Chisholm, Campbell, 2014).The screening of diabetic patients, follow up care of diabetic patients, the role awareness and sensitization programs and staff training programs on diabetes management , ought rightly to have closed the gap of non-retention of diabetic patients in the hospitals and gap the threats of diabetic incidences.

1.2 Statement of the Problem

The Kenya National Diabetes Strategy 2010-2015 predicts that the current 3.3% diabetes prevalence rate will increase to 4.5% by 2025 and partly links this to changes in lifestyle dynamics. Although healthy diet and physical activity improves and maintains glycemic levels of people diagnosed with type 2 diabetes mellitus, rates of non-adherence to diet plan and exercise recommendations have been reported at 35 to 75% and 70 to 81% respectively in type 2 diabetes patients .In Kenya, no study has been done on rates and factors associated with non-adherence to diet plan and exercise among type 2 diabetes patients (Dongbo, 2012).

The program therefore addressed such long term and short term challenges through the screening, efficiency, close management/monitoring, and the care education that has to be started at an early stage. The reality thus targeted challenges of retaining diabetic patients in care, it addressed the general practice, close follow up, referrals, and the clinical care (Frank, 1957)

1.3 Purpose of the Study

The purpose of the study was to investigate the influence of diabetic management program on retention of diabetic patients, a case of burnt forest sub district hospital.

1.4 Objectives of the Study

The study was guided by the following research objectives;

1. To establish the influence of screening of patients on retention of diabetic patients in Burnt Forest Sub District Hospital.
2. To assess follow up care on the retention of diabetic patientsin Burnt Forest Sub District Hospital.
3. To determine the extent to which awareness management programs on the retention of diabetic patients Burnt Forest Sub District Hospital.

4. To examine the influence of training participants on the retention of diabetic patients Burnt Forest Sub District Hospital.
5. To assess the extent to which the clinical care of patients assist on the retention of diabetic patients Burnt Forest Sub District Hospital.

1.5Research Hypothesis

The study was guided by the following research hypotheses:

H_{01} There is no significant relationship between screening of patients and retention of diabetic patients in Burnt Forest Sub District Hospital

H_{02} There is no significant relationship between follow up care and the retention of diabetic patients Burnt Forest Sub District Hospital.

H_{03} There is no significant relationship between awareness management programs and the retention of diabetic patients Burnt Forest Sub District Hospital.

H_{04} There is no significant relationship between training programs and the retention of diabetic patients Burnt Forest Sub District Hospital.

H_{05} There is no significant relationship between clinical care programs assist and the retention of diabetic patients Burnt Forest Sub District Hospital.

1.6 Significance of the Study

The study findings was useful to the Ministry of Health as it provided it with the necessary information to help curb the problem of undesirable diabetic health consequences among adults. The study helped in formulating workable strategies for responding to the needs and problems of lack of diabetic management planning among diabetic patients especially in rural and poor urban settlements. For example, the kind of medical services and preventive measures needed, and how

and where the services should be offered. Assessments also helped in monitoring whether services are producing the desired effect and whether there is a need for a change in strategies.

Results from the assessments were used to create awareness about the diabetic problem as health concern issue to be addressed through proper planning of the strategies. The study was able to unearth the underlying issues concerning the impediments to control diabetic concerns and provided efficient ways to target subsidies that improved performance and reduced inequalities in accessing to diabetic programs and methods. It was also an initiating document for other researchers to further discuss and improve the uptake and use of strategies and methods to have it properly managed.

The study was also of significance to future scholars who were interested in looking at the same area or other related areas since it provided a background that can be used to ground the study and enable them to further research in the same area.

1.7 Delimitations of the Study

The study aimed to look at how the diabetic management program influence the retention of diabetic patients at Burnt Forest Sub District Hospital, in Uasin Gishu County.

The study focused on the role of screening program on retention of diabetic patients, the influence of follow up care on the retention of diabetic patients, role awareness and sensitization programs on the retention of diabetic patients, the role of the staff training programs on the retention of diabetic patients, and the role of the close clinical care programs on the retention of diabetic patients.

The study was conducted through a descriptive research design and utilized both primary and secondary methods of data collection. The study limited itself to Burnt Forest Sub District

Hospital Uasin Gishu County. These is considered the most appropriate place to carry out the study due to high population of patients attending services in the hospital and that is surrounded by an vast region of rural settings without such a facility. The study was further limited to, clinicians, nurses, and diabetic patients coming from diverse backgrounds within and out of the sub county. The study was conducted between the months of May and June, 2016.

1.8 Limitations of the study

The limitations which the researcher faced during the study are that the respondents who were the main source of information were not willing to spent their time and give information. The researcher was however assured that the research is for education purposes only and therefore confidentiality was observed. The anticipated limitations were as well in terms of inadequate time and capital to conduct the research. The researcher however dedicated much time for the study to be conducted.

Since study deals with sensitive issues of the life, it was difficult to convince respondents that the information to be gathered was purely for academic purposes for fear of disclosing their way of life.

1.9 Assumptions of the Study

In order to conduct the study the following assumptions were made;

The study assumed that health care facilities in Burnt Forest Sub County in Uasin Gishu County offer Diabetic programs to their patients as a retention mechanism.

The respondents will cooperate and give honest responses to the questions in the research tools.

The target sample population will have a common understanding on the issues in the tools of data collection.

The sample size to be chosen will adequately enable the researcher to draw a valid conclusion about the study.

1.10 Definition of Significant Terms

Diabetic Management Program

The Diabetes Management Program provides expert care to adults and children of any age to help them learn how to live with and manage diabetes (Diabetes Support Group, 2016). From these programs the patients get to learn to control their blood sugar levels through a combination of good nutrition, exercise and often medication these are key to successfully managing their diabetes.

Retention of Diabetic Patients

This refers to retaining the diabetic patients in the program by knowing patient's role in diabetes treatment, knowledge about how patients with diabetes experience follow up-management intervention programs aimed to promote diabetic-care activities.

1.11 Organization of the study

The study is organized into three chapters. Chapter one encompasses the background of the study, statement of the problem, research objectives, research hypothesis, significance of the study, limitations of the study, delimitations of the study, organization of the study and definitions of key terms. Chapter two on the other hand comprise of: empirical review, theoretical framework, knowledge gap and conceptual framework. Chapter three involves Research Design, Study area, Target population, Sampling procedure and sample size, Data collection instruments, Validity and Reliability of research instruments, Data collection procedures and Data Analysis Procedure

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents an overview of literature related the diabetic management program influence on the retention of diabetic patients. Studies that discuss the role of screening program on retention of diabetic patients, the influence of follow up care on the retention of diabetic patients, the role awareness and sensitization programs on the retention of diabetic patients, the role of the staff training programs on the retention of diabetic patients and the close clinical care programs on the retention of diabetic patients (Frenk, 2014). According to Joubert and Ehrlich (2012) Literature review herein is the process of taking stock of existing knowledge in order to make informed choice about policy, practice, research direction and resource allocation. They further asserts that it is about exploring what has previously been written on a particular subject with a critical examination and synthesis of existing reports and through this review process the outcome conveyed to the reader the current state of knowledge on a given subject along with the strengths and limitations of the underlying research.

2.2 Empirical Literature Review

Researchers have designed and implemented educational interventions programs to prevent complications among patients with diabetes for years. Results of studies that evaluated such interventions showed that educational interventions focusing on diabetic-care improved patients' knowledge and behavior, and reduced complications caused by diabetes. (Pelt, 2012).

2.2.1 Screening of patients and Diabetic Patient Retention

A research that was focused on diabetes patients on neighborhood with or without hypertension within the peer educator's village and be extended over a period of 1 to 2 years to cover an area designated by an agreement with local health authorities dealing with screening. From studies a newly detected diabetics can only become registered members after approval from the health authorities, who oversees all peer educators in the health district. The patient's record in the screening process is then included in a database for follow-up by the peer educator, monthly reporting by the health authorities and entry into the local network's own Khmer Open Source database (Goudge 2015).

Within the screening programs the new patients have to attend six classes at the home of their peer educator. At the moment, the content of the sessions is mostly destined for new screened patients who need to learn the basics about diabetes, and cover information about physiopathology, symptoms, long-term complications, lifestyle and medicines and their side-effects. The sessions are however attended by a mix of old and new patients. Patients are encouraged to stop smoking, become more physically active, and to either change or maintain weight. Peer educators discuss nutrition issues using the food pyramid which is based on a Glycemic Index of locally available food items. Patients are provided with urine glucose strips each month and are encouraged to use these within three hours of eating to detect after meal glucose peaks (Grundy, 2015).

Remote-monitoring technologies are an extension of the screening concept and methodology that allow clinicians to gauge the degree of control of a patient’s diabetes between visits and to modify care plans accordingly. These technologies offer the potential to improve blood glucose,

blood pressure, and cholesterol. These extents to patient participation in remote monitoring that would be low and thus many patients would choose not to enroll or to drop out after enrollment. The care process that when fully implemented, national adoption of remote monitoring technologies would have no statistically significant impact on provider decisions to screen for retinopathy, neuropathy, or micro albuminuria (Hardeman *2013*).Furthermore, the physiology that affirms national adoption of remote-monitoring technologies that would improve average HbA1c by 0.03 percent, SBP by 0.56 mmHg, and total cholesterol by 2.8 mg/dl. The clinical outcomes over the first ten years would impacts on the national adoption of remote-monitoring technologies to cumulatively reduce heart attacks by 12,000, and the diabetes-related mortality by 270,000 (Harries *2015*).

2.2.2 Follow-Up Care of patients and Diabetic Patient Retention

The increase of diseases with a multifactorial etiology including a strong social component in prosperous countries has given rise to follow up mostly in research in health prevention and health promotion. With regard to diabetes, the research in this area has focused mainly on how to encourage people with diabetes to undertake a prolonged regime of program-management.

Previous systematic reviews and meta-analyses sought to find evidence that such management intervention using educational or behavioral strategies stimulates the individual's performance of diabetes care to increase target behavior actions such as blood glucose monitoring, diet care, physical activity and medical care among adults. These studies indicated modest but significant improvements in glycemic control in educational and behavioral interventions in diabetes, although, the improvement on glycemic control seemed to decrease over time (Haynes *2012*).

There was no strong evidence that follow up interventions to improve program-management behaviors were effective in reducing morbidity and mortality among patients with diabetes. Studies to substantiate the effectiveness for such follow up management intervention to affect long-term behavior are therefore needed (Sande,2012). Blood Effects on other outcomes such as lipids, weight and blood pressure varied indicating the need for more follow up studies to establish knowledge in this area. This was also true for research on follow up psychological factors, though there was indication that psychological distress tends to fall among patients with diabetes who receiving follow up psychological therapy (Unwin, 2011). The contact time (time in hours) between healthcare professional and patient, however, seemed to have an influence on the results, and strategies based on case management seemed to be more robust in improving glycemic control compared to other quality improvement strategies (Hill, 2013).

Although importance has been attach to the patient's role in diabetes treatment, knowledge about how patients with diabetes experience follow up-management intervention programs aimed to promote diabetic-care activities has not been well elaborated. We know from previous qualitative research evaluating interventions to improve self-management among patients with diabetes that follow up-management activities consist of a complex and dynamic set of processes that are deeply embedded in the individual's unique life situation (IDF, 2015). This research indicated that support from diabetes specialist nurses and family caregivers are a prerequisite for managing diabetes. A study evaluating patient education found that follow up behaviors rather than physiological outcomes need to be rewarded if self-management changes are to be encouraged and maintained (Joosten , 2015).Joosten argued that there is a lack of support for the program-monitoring practice in the healthcare system.

There was evidence that multiple lifestyle modifications are beneficial in promoting diabetes such program management. Previous research has also suggested that patient follow up involvement; cultural adaptation, family involvement and individualization are important factors in the development of interventions seeking to increase program-management among patients with diabetes (Young, 2015).

Furthermore, a literature review on follow up patient education with emphasis on methods and effects concluded that the existing knowledge in patient education is insufficiently substantiated in comparison to the method and effect measurements (WHO, 2010). Further understanding of how follow up program-management intervention supports the patient in dealing with diabetes in everyday life is also imperative for implementation of diabetes treatment aiming at improving and maintaining program follow up-care activities (WHO and HAI, 2015).

There has been a keen interest in examining the impact of different kinds of patient follow up education programs' on diabetes self-management but the long-term effect of such programs is still unknown. In spite of that it is widely accepted that diabetes education is not only required in the first few months following diagnosis but is an important component of ongoing diabetes care due to the onerous requirements for program-care that demands multiple daily decisions in order to balance diet, physical activity and medications. Critical assessment of the impact of program-management education requires further research based on rigorous methods in high quality studies with a large number of participants, long-term follow-up on the effectiveness and well-defined interventions. A Danish Health Technology Assessment suggested that a long-term effect on progression of diabetes probably requires intensive and lengthy follow up training efforts (Kang, 2011).

2.2.3 Awareness and Sensitization of patients and Diabetic Patient Retention

The patient's own role in diabetes treatment and recognition of the need to educate patients in diabetes program-management has long been considered to be important. The concern about educating patients to take care of their diabetes began more than 100 years ago and was emphasized with the publication of the Diabetic Manual for the Doctor and Patient by Elliot Proctor Joslin in 1918 (Kelley, 2013).

Since then several guidelines for diabetes care including education have been developed, among these The World Health Organization's guideline for a national program for diabetes mellitus, which stressed the importance of developing effective patient education programs to maintain the health and quality of life of individuals with diabetes (King,2013).

Managing the daily care of diabetes seems to be a challenging task for many patients, and a patient's ability to be involved in the daily routine of diabetes care seems to be grounded in psychological, motivational as well as educational factors (UK Prospective Diabetes Study (UKPDS) Group, 2011b). Diabetes self-management intervention has emerged as a resource to assist patients in managing daily diabetes care through dissemination of information and facilitation of program-management behaviors (Damme, 2014).

Knowledge about the disease and specific lifestyle guidelines is necessary but not an adequate factor to facilitate the appropriate behavioral changes. In the development of education intervention there has therefore been an interest in identifying approaches that could strengthen the individuals' beliefs in their own competency to handle their diabetes, and hopefully thus enabling them to control the disease (McCarthy, 2015).

This indicates a need for health professionals to focus on the patients, their lives and their health problems, rather than on the disease and disease management in diabetes treatment. The individual's ability to conduct self-care activities and to assume responsibility for daily diabetes care are supposed to be reflected in good outcomes, which make the patients less prone to diabetes-related complications (Labhardt , 2010)

2.2.4 Training of participants and Diabetic Patient Retention

Because of the shortage of human resources for health in many states, more efficient use of healthcare personnel is urgently needed. One option is to use non-physician clinicians, such as nurses or pharmacists. As mentioned previously, more and more examples of care for chronic conditions provided by nurses at primary health care level in low-resource settings are being described being particularly not worthy (Lewin 2014).

Care provided by non-physician clinicians however, is often still provided at health care facilities, potentially leading to problems of low retention because of distance to the facility. The lack of transportation and distance to clinic were the most common reasons for loss to follow-up thus need for training of related field professionals to help the patients. These structural barriers could be removed by providing care, training, and education of the staff in the community, suggests that alternative models to delivering care such as more dispersed satellite clinics or home-based programs are needed to ensure continuous care (Lorig, 2010).

Indeed, making use of community resources by training volunteers or using 'expert patients/peer-educators' is another way to address the shortage of human resources useful in helping diabetic and other disease striven patients (HM , 2011).

Communities can fill crucial gaps in health services that are not provided by organized health care. Besides leveraging the human resource crisis, using patients in the provision of care empowers them and increases patient-centeredness. Strengthening patients and giving them the opportunity to help each other in dealing with their condition, assisted by the formal health-care system, is what patient-centeredness is all about (Holman, 2012)

In addition, care provided by patients has the potential of being of better quality than care provided by trained health professionals, since people living with a chronic condition are those that have the most comprehensive expertise in dealing with that condition (UK Prospective Diabetes Study (UKPDS) Group, 2011a).Peer support can offer the kind of emotional, social and practical assistance for how to achieve and sustain complex behaviors that are critical for managing chronic conditions and staying healthy. Indeed peers, when well trained and given a detailed protocol, teach at least as well as health professionals and possibly better. In fact, the most famous disease-management program, the Chronic Disease Self-Management Programme, is lay-led (Mamo, 2012).

Research to date indicates that peer support could be a promising approach for diabetes management especially upon training but more research is urgently needed. With some notable exceptions, most evidence on trained peer support interventions has been generated from high-income, Anglo-Saxon countries. Some of the intervention focused on migrant populations, generating more culturally acceptable variations of existing programs that evaluated the effect of a culturally sensitive diabetes program-management training education program on glucose control and metabolic parameter. An improved significant training intervention group from

baseline to 10 months training follow-up, while no significant changes were noted in the control group (Meessen, 2014).

Peer educator trained thus aid to provide community members living with diabetes and/or hypertension with reliable information and basic skills. A small salaried staff is employed by the NGO to establish and support the semi-autonomous peer-education networks to identify and train new peer educators. The networks organize themselves under a Diabetes Programme Manager. The peer educators, who receive six weeks formal training, have themselves recently recovered from years of serious illness and gain the trust of their communities because they can relate personal experience of the effects of poor glycemic control (Men, 2012).

Their recovery also leads them to gain credibility. After accreditation, they qualify for basic equipment and supplies, based on reported activities, and are allowed to identify their home as a 'Patient Information Centre' for weekly patient gatherings and education sessions. Newly qualified educators will screen their community for diabetes. Initial screening is based on adult's diabetic programs-testing with urine strips. The educator counsels those with positive strips and confirms their result using a blood glucose meter. The critical levels used by the NGO are: FBG ≥126mg and/or PPBG ≥180mg. Peer educators are also trained to take a simple patient history using a form which records items including the measurements of FBG, PPBG, BP, urine glucose, weight, and height (MoH Kingdom of Cambodia, 2015).

Within the training programs the new patients have to attend six classes at the home of their peer educator. At the moment, the content of the sessions is mostly destined for new patients who need to learn the basics about diabetes, and cover information about physiopathology, symptoms, long-term complications, lifestyle and medicines and their side-effects. The sessions are however

attended by a mix of old and new patients. Patients are encouraged to stop smoking, become more physically active, and to either change or maintain weight. Peer educators discuss nutrition issues using the food pyramid which is based on a Glycemic Index of locally available food items. Every patient receives a copy (Ooms *2015*). Patients are provided with urine glucose strips each month and are encouraged to use these within three hours of eating to detect after meal glucose peaks (MSF, 2015)

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If lifestyle changes produce insufficient results within a few months or sooner if warranted by the patient's condition, peer educators assist patients to obtain an appointment with a specially trained Medical Doctor to hold consultations at the local public hospital once per week to initiate or change medical treatments for diabetics (Price, 2012).

2.2.5 Clinical Care of patients and Diabetic Patient Retention

A study comparing structured lay-led diabetic program-management education programmes for chronic conditions against no intervention or clinician-led programmes depicted ideal clinical scenarios. Seventeen trials involving 7442 participants were involved (Swinnen *2015*). The interventions shared similar structures and components but studies showed heterogeneity in conditions studied, outcomes collected and effects. Only one study provided data on outcomes beyond six months, and only two studies reported clinical outcomes. They concluded that lay-led diabetic-management education programmes may lead to small, short-term improvements in participants' self-efficacy, diabetic-rated health, cognitive symptom management and frequency of aerobic exercise. However, they also stated that there is insufficient evidence to suggest that

these programmes improve psychological health, symptoms or health-related quality of life, or that they significantly alter health-care use (Philis-Tsimikas *2011*).

Though it did not considered especially ideas in low-resource settings with long-term follow up and assessment of clinical outcomes, the outcomes depicts the vital roles of the clinical care in saving life. Thus to help people living with diabetes and hypertension1 to program manage their condition by engaging a clinical care in their own community (WHO, 2012). This aims to create empowered patient networks on clinical grounds, each consisting of 500 to 1000 registered members organized around a team of clinical peer educators. The focus is on diabetic program-measurement of glucose levels and adaptation of life style, including nutrition and daily exercise. Also the clinical decision-support systems on diet and medication are a powerful aid to clinicians at the point of care (Volman, 2015). By combining patient information with the latest medical knowledge, they offer recommendations to clinicians for optimal individualized care (WDF, 2015). Physicians can use these recommendations to improve control of blood sugars and other physiologic parameters as well as to improve compliance with screening and other care-process guidelines (World Bank, 2014).

Patient participation on the clinical care would be relatively high and improves lifestyles, as patients generally do not choose to opt out (Twaddell 2015). The primary source of patient non-participation would be failure by the management program to identify eligible candidates for enrollment. While the care process upon the full implementations, national adoption would improve average retinopathy screens from 14 percent to 24 percent, peripheral neuropathy

screens from 45 percent to 68 percent, and the micro albuminuria screening from 45 percent to 61 percent (Simon 2010).

Physiology too when fully implemented, national adoption would improve average HbA1c by 0.28 percent, increase in SBP by 4.0 mmHg, and total cholesterol by 4.5 mg/dl (Uitewal , 2013). The clinical outcomes over the first ten years, national adoption would cumulatively increase strokes by 12,000 (This result likely reflects the projected increase in blood pressure, reduce kidney failure by 2,600, reduce amputation by 340,000, reduce blindness by 20,000, and educe diabetes-related mortality by 210,000 (Reboldi , 2011).

2.2.6 Retention of Diabetic Patients

A quality or quality assurance plan has been part of the Midlands Health Network for the last 14 years. The measurement was a cross-sectional analysis of practice performance over a financial year. In terms of instigating clinical change, audit and feedback through programmes such as the quality programmes have been effective. However, the use of audit has not been universal and there is little evidence on how to use it effectively. Generally, a longitudinal approach is superior to a cross-sectional one for investigating factors affecting quality (Raguenaud *2015*).

The network of general practice teams is responsible for the primary care of almost450 000 enrolled people in New Zealand. This includes approximately 17 500 patients with diabetes (2015/10), of which 12 756 (71%) had their networks possible and achievable in that single year. A prior study in the Midlands Health Network of a subset of three practices showed that the practice recording of diabetes was complete and reliable (Robionson, 2015).

Previous work investigating retention has focused on the overall health system and patient. It has shown that once a patient with diabetes attends their second or third consecutive review, they are more likely to continue to participate year after year. That study followed the patient cohort

across practices and investigated the effect of patient factors such as age, gender and ethnicity on retention in the programme (Rose 2012). The patient and attributes of the practice can also play an important role. Specifically, an increased or equal practice nurse to general practitioner ratio may improve the rate at which patients attend regularly (Haynes, 2010).

The practices even if captured in another Midlands Health Network practice over the four-year period were removed. Using the above definition of retention, rates of patients having been 'retained' in the programme were calculated to investigate the effect of patient and practice factors on retention. Those factors investigated were patient age, sex and ethnicity, practice rurality, funding type, and ratio (Samb, 2015).

2.3 Theoretical Review

The concept in this was inspired by Orem theory of disease-care and is seen as a health resource in the individual. The Orem theory as a fundamental need in humans is based on the values of autonomy and independence. In Orem's understanding, self-disease-care is a learned and purposeful activity of the individual that requires a certain level of maturity enabling the individual to perform effective, purposeful, controlled and consistent actions (Foster,2012).

The theory also encompasses healthcare providers to help a person with their actual or potential disease -care deficits. In this the proposal thus is seen as context dependent ability. Therefore, the disease-care activity is not only a process directed inwards affected by personal conditions, but the ability to conduct self-care is also affected by interpersonal and external conditions. Thus, the context and the dynamics of available resources determine the conduct of self-care activities (Fox,2014).

Contextually, diabetes is a metabolic disease that is diagnosed on the basis of sustained high concentration of glucose in the blood thus requires a level of understanding hereby posited in this theory. According to the World Health Organization (WHO) the current diagnostic criteria for diabetes are: plasma glucose concentration measured after an overnight fast above7.0mmol/l and/or, plasma glucose concentration measured two hours after a 75g oral glucose load above 11.0mmol/l. Diabetes occurs when the pancreas does not produce enough insulin, or when the body cannot effectively use the insulin it produces.

Over time, diabetes can increase the risk of health-related problems including blindness, kidney damage, nerve damage, amputation of lower limbs and cardio vascular disease eventually is understood better perceptively in this theory. Although diabetes cannot be cured, the disease can be managed by non-pharmacological and pharmacological strategies, where improvements in glycemic control are important factors in delaying the onset and progression of diabetes-related complications (Gelders, 2014).

Therefore theoretically, the treatment of diabetes leading to improved control is a 24-hour-a-day activity and often includes changes in lifestyle, most of which patients with diabetes must provide for themselves on a daily basis (Geng, 2010).The programs in the management of diabetes involve a number of considerations and choices that the patient with diabetes must make on a daily basis. It requires that patients are able to reconcile their resources, values and preferences with a therapeutic regimen of a healthy diet, exercise, nonsmoking, low alcohol intake, glucose monitoring and, for some patients, and medication. The management programs of diabetes is closely connected to the theorem concept, which can be related to the practice of

activities that individuals initiate and perform on their own behalf in maintaining life, health, and well-being guided conceptually by the theorem theory (Gerstein 2015).

2.4 Knowledge Gap

An assessment on the screening program emphasized on the aspects of learning and classroom work, peers roles, care and the remote sensing technology. This offered little concerns on the matters of the dynamism in the learning abilities, and the changes in all institutions that affect the lifestyles and screening costs. The organization of program-management follow up intervention including methodological strategies was not well expounded. Also knowledge about how patients with diabetes experience follow up-management intervention programs aimed to promote diabetic-care activities has not been well elaborated. Thus follow reviews opens critic on grounds of timely concerns, electronic monitoring, and the personal relations other than the centered cases of etiology, social aspects, behavior, knowledge and kinds of follow up alone.

Awareness and sensitization concentrates on the educative aspects, lifestyles, and the imparting of new perspectives neglecting the cultural aspects, spiritual, economic, and the ecological roles in such consequences. Staff training on the other hand focuses on the human resource, communities, patients, and peers thus implicitly lacks the aspect of professionalism, privatization and centered aspects of autonomous perspective of a professional concerns. Clinical aspect lays little emphasis on the diet, exercise and the manners of the foodstuffs thus opening means to have the concentric approach to partnership and the resource utilities roles.

This study thus will seek to unfold the factors in thediabetic management programs that influence patient’s retentions implicitly centering on the objective and majorly on the gaps herein highlighted.

2.5 Conceptual framework

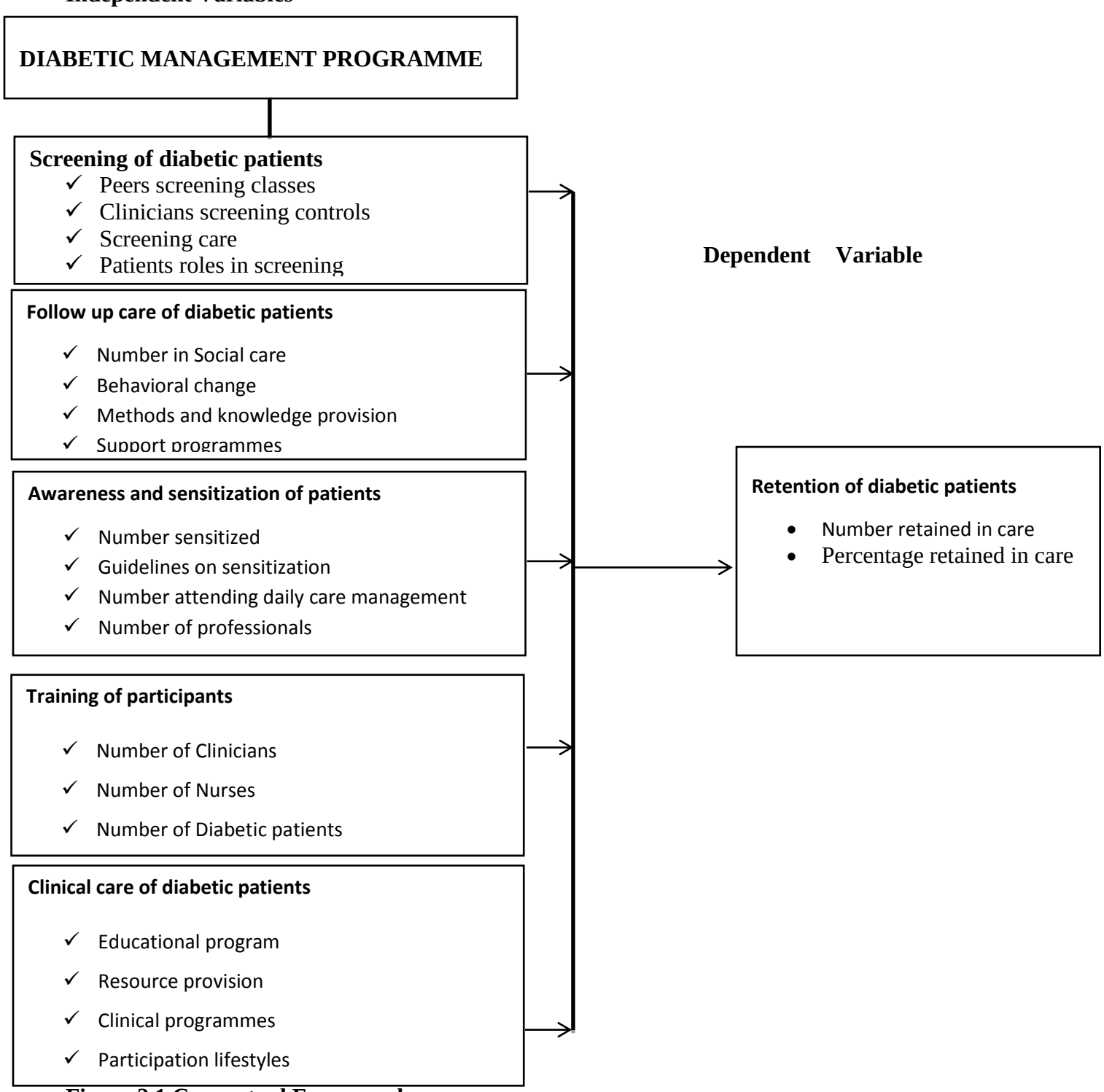

Figure 2.1 Conceptual Framework
Source: Research Data, (2016)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Kothari (2011) defines research methodology as a way to systematically solving the research problems. He describes methodology in as much details as necessary, how the research was, what methods were used to achieve the research objectives. This chapter is therefore aimed at transmitting the details procedures that is showing the steps to be taken by the researcher in collecting data, the methodological foundations and the reasons behind the researcher's choice of the research methods used.

3.2 Research Design

Research design was considered as an outline for research, dealing with at least four problems namely: which questions to study, which data are relevant, what data to collect, and how to analyze the results (Kumssa, 2011). The best research design depends on the research question as well as the orientation of the researcher. While carrying out the study, the researcher adopted a descriptive research design. This design investigated the current status and nature of the phenomena. Kothari (2012) defines descriptive as a method of collecting information by interviewing or administering a questionnaire to a sample of individuals. Descriptive research, describes data and characteristics about the population or phenomenon being studied. According to Coopers and Schindler (2013) descriptive studies are more formalized and typically structured with clearly stated hypotheses or investigative questions. The descriptive analysis approach was chosen for the present study, because it seeks to gain insight into a phenomenon as a means of providing basic information in an area of study (Koul, 2011). The descriptive research design

was adopted in this study based on the conceptual relationship between the independent variable and the dependent variable.

3.3 Target population

Target population is the individuals the study selects as respondents within the study and is significant in achieving the set objectives (Mbendi, 2012). The target populations was picked from consenting adults (18 years and above) diagnosed with diabetic on clinic care for one or more months, clinicians and nurses at Burnt Forest diabetes clinic. Therefore, the target population will be 203 respondents.

Table 3.1 Target Population

Category	**Target population**
Clinicians	3
Nurses	10
Diabetic patients	190
Total	**203**

Source: Research (2016)

3.4 Sample Size and Sampling Techniques

Sample size refers to the number of observations or replicates to include in a statistical sample Kothari (2012). The sample size is an important feature of any empirical study in which the goal is to make inferences about a population from a sample. Sampling technique refers to a procedure of selecting a part of population on which research can be conducted, which ensures that conclusions from the study can be generalized to the entire population.

3.4.1 Sample size

The researcher obtained sample size using the Fishers formulae for a target population of less than 10,000. The sample size of the study was calculated using the formula below as recommended by Fishers (2003):

$$nf = \frac{n}{1 + \frac{n}{N}}$$

Where;

nf = Sample size (when the population is less than 10,000).384

n = Sample size (when the population is more than 10,000);

N = Estimate of the population size; 203

Therefore the sample size for this study will be calculated as follows;

$$nf = \frac{384}{1 + \frac{384}{203}}$$

$$= 133$$

This study will therefore sample 133 respondents

The sample size is represented in table 3.2:

Table 3.2 Sample size

Category	Target population	Sample size	Sampling procedure
Clinicians	3	3	Purposive sampling
Nurses	10	10	Purposive sampling
Diabetic patients	190	120	Simple random sampling
Total	**203**	**133**	

Source: Researcher (2016)

The estimated sample size was 133. However with over 100 patients on diabetic management program every month and with the time frame of 3 months in which to carry out this study, 38 patients were selected every month for three successive months hence the total sample size of 133 participants will be used as sample size. The number of clinicians and nurses was constant in the 3 months.

3.4.2 Sampling procedure

The principal investigator with the help of clinicians, nurses and the research assistant recruited participants from patients attending the diabetic clinic at Burnt Forest Hospital. Clinical criteria like the age of onset, relative weight, and time between initial diagnosis and initiation of diabetic drugs was used to single out diabetic patients.

Random sampling technique was used to select individual participants. A sample of diabetic patients were randomly selected from the register of patients booked on appointment days using a table of random numbers generated SPSS.

On the clinic day, sample participants will be approached to participate in the study sequentially. Screening was conducted to ensure language comprehension. Those who do not understand either Kiswahili or English were not included in the study. Information related to the study including importance and objectives were availed to the participants and after signing the informed consent form, they were recruited into the study.

3.5 Research Instrument

The researcher used a questionnaire and Interview schedule as research instrument.

3.5.1 Pilot Study

In order to ascertain validity and reliability of the research instruments, the researcher piloted the instruments by distributing 12 questionnaires to respondents in AMPATH center Eldoret, which is not part of the area sampled. The pilot respondents represented 10% of the sample size. The purpose of piloting the instruments was to establish the clarity of meaning and comprehensibility of each item in the research instruments, and also to determine the time needed to complete and get the necessary information from them.

3.5.2 Validity of Instruments

Kasomo (2014) defines validity as the quality that a procedure or an instrument used in the research is accurate, correct, true, meaningful, and right. The study applied content validity as a measure of the degree to which data to be obtained from research instruments meaningfully and accurately reflect or represent a theoretical concept. The researcher used expert judgment method to determine validity of the instruments. The researcher gave a copy of the questionnaire to the supervisor to check if it represents all the questions of the study. The study employed the use of pilot study to test the validity of the research instruments.

3.5.3 Reliability of Instruments

Reliability is the consistency with which research instrument measure what it purports to measure. The questionnaire was tested for reliability by using cronbach coefficient alpha to determine the internal consistency of the items. This is a method of estimating reliability of test scores by the use of single administration of a test. Consequently, it provide good measures of reliability because holding other factors constant, the more similar the test content and conditions of administration are, the greater the internal consistency reliability (Kombo, 2014). In this study, the items were considered reliable if they yield a reliability coefficient of 0.70 and above. According to Katou (2015), research instruments are considered to be reliable when the value of the cronbach alpha is greater than 0.70.

However, the cronbach's coefficient alpha that is less than 0.70 imply that the research instruments are not reliable and the researcher would make necessary corrections before using the instruments to collect data.

The reliability results were as presented in table

Table 3.3 Reliability Statistics

Cronbach's Alpha	N of Items
.867	5

The questionnaire was issued to all the respondents' choices for the study so as to seek for their responses, and basing on the research questions.

A structured, pilot-tested questionnaire was used to collect data. The questionnaire was formulated according to a model established during literature review and also, from related studies (modified to suit study locality). The questionnaire comprised of close-ended and

multiple-choice questions. The principal investigator and research assistant read out the question as it is from the questionnaire to the participant and then document the findings. Each questionnaire was coded using participant's initials and this was used for cross-checking with initials on the signed informed consent form in order to ensure that the same participant is not selected more than once. Participants' responses was reviewed and verified on completion.

3.5.4 Interview schedule

Interview schedule refers to a data collection tool in which one person (interviewer) questions the (interviewee) respondent (Babbie, 2011) and this develops into a conversation. The interview was used to collect information from the clinicians and nurses because of the position in the hospital and by extension their role, duty and function which enabled them to provide the required information on the subject. This also allowed the researcher to clarify the questions that the respondent has not understood.

3.6 Data Collection Procedures

This refers to the series of events to be followed during the data collecting process. In this research study, the researcher first collected an introductory letter from the University and book appointments with Burnt Forest Sub District Hospital before making a formal visit on the respective day of the appointment. The researcher requested to be allowed to conduct the study in the organization. The researcher had to provide an introductory letter to the management to be granted permission. Upon visiting the research site on the day of study, the researcher picked samples of respondents and issued them with the questionnaires after which the questionnaires were collected. Any problems resulting from filling the questionnaires; the researcher assisted them before taking away the collected data. The researcher then conducted interviews on the

clinicians and nurses to provide the needed information. The researcher assembled all the information collected for analysis.

3.7 Data Analysis Techniques

The structured questionnaires were coded in respect to questions for ease of electronic data processing prior to the commencement of the fieldwork. After tabulation, the data was coded to facilitate statistical analysis. The data obtained from the research instruments was analyzed using Statistical Package for Social Science (SPSS) version 20. Quantitatively data was analyzed using descriptive and inferential statistics. Quantitative analysis involves the use of means, relative frequencies, mode, median and standard deviation Kothari (2015). Descriptive data was analyzed using frequencies and percentages while in inferential statistics ANOVA and multiple regression model was employed because it provide the most accurate interpretation of the independent variables. ANOVA was used to show the goodness of the fit of the model. The hypotheses of the study were tested using multiple regression analysis. ANOVA and multipleregression analysis involves finding the best straight line relationship to explain how the variation in an outcome (or dependent) variable, Y, depends on the variation in a predictor (or independent or explanatory) variable, X. Once the relationship is estimated it is possible to use the equation:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \varepsilon$$

Where:

x= The independent variables - x_1 = Role of screening program

x_2=Follow up care

x_3=Awareness and sensitization program

x_4 =Staff training programs

x_5 =Clinical care program

Y = The dependent variable (Retention of diabetic patients)

β_0 is a constant implying the retention of diabetic patients that does not depend on the four variables investigated.

β_1, β_2, β_3 and β_4 are the coefficients of proportionality for role of screening program, follow up care, awareness and sensitization program, staff training programs and clinical care program respectively

ε = Error of margin

3.8 Ethical consideration

In any research, ethical protocols should be considered by the researcher so as not to violate the rights and freedom of the respondents. The researcher ensured that all the respondents are aware of the objectives of the research and their contribution to its completion. Also, the researcher will sort to solicit explicit consent from the respondents so as to ensure that their participation in the study is out of their own will. One other ethical measure exercised by the researcher is treating the respondents with respect and courtesy (Cooper and Schindler 2014). This was done so that the respondents are at ease making them more likely to give candid responses to the questionnaire. To ensure the integrity of data, the researcher checked the accuracy of encoding of the responses. This was carried to ensure that the statistics generated from the study are verifiable (Cooper and schindler 2014).

Ethical approval to perform the study was obtained from University of Nairobi and Burnt Forest Sub district Hospital.

Authorization to carry out the study was obtained from the head of the facility in Burnt Forest sub district Hospital.

3.9 Operational Definition of Variables

To achieve the objectives of the study the researcher will investigate influence of diabetic management program on retention of diabetic patients, a case of burnt forest sub district hospital; the objectives of the study will include; to find out the role of screening program on retention of on retention of diabetic patients, to find out the influence of follow up care on the retention of diabetic patients, to investigate the influence of the awareness and sensitization programs on the retention of diabetic patients, to examine the role of the staff training programs on the retention of diabetic patients, to assess the role of the clinical care programs on the retention of diabetic patients, to achieve these objectives questionnaires and interview schedule will be used each with specific questions for each objective.

Table 3.4 Operationalization of Variables

Objective	**Variables**	**Indicators**	**Measure ment**	**Tools analysis**	**Types of tools**
To establish the influence of screening program on retention of diabetic	**Independent** Screening Factors	• Neighborhood roles • Peers screening classes • Clinicians screening controls	Ordinal	Descriptive statistics. tables and charts	Frequency distribution tables

To assess follow up care on the retention of diabetic patients	**Independent** Follow Up Factors inside.	• Social aspects • Behavioral aspects • Methods knowledge • Support programs • Kinds of follow up	Ordinal	Descriptive statistics Tables and pictures	Frequency distribution tables
To determine the extent to which awareness management programs on	**Independent** Awareness and Sensitization	• Education • Guidelines • Daily care management • Disease knowledge Professionalism	Ordinal	Descriptive statistics. tables and pictures	Frequency distribution tables
To examine the influence of training programs on the retention of diabetic	**Independent** Staff Training	• Human resource • Non-physicians • Volunteers • Communities Peers and	Ordinal	Descriptive statistics. tables and pictures	Frequency distribution tables
to assess the extent to which the clinical care programs	**Independent** Clinical care	• Education program • Resource setting	Ordinal	Descriptive statistics. tables and pictures	Frequency distribution tables

	Dependent Retention of Diabetic Patients	• Quality • Network • Health systems • Attributes • Practice on personal characteristics	Nominal	Statistics Tables and pictures	Frequency distribution tables

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

The study sought to find out influence of diabetic management program on retention of diabetic patients, a case of burnt forest sub-district hospital. This chapter presents data analysis, presentation and discussion. The sample of the study was 120 respondents but data was collected from 117 respondents.

4.2 Response Rate

The researcher sought to find out the response rate of the respondents. The researcher managed a response rate of 100% since a provision had been made for loss of some questionnaires or failed interviews.

4.3 General information

The study sought to establish the general information of the respondents targeted for the study. The study sought to find out the gender, age, educational level and diabetes duration of the participants. The findings were analyzed in the table 4.1;

Table 4.1 Analysis of the General information of the Respondents

Gender of the Respondents	Frequency	Percent
Male	57	48.7
Female	60	51.3
Total	117	100
Age bracket of respondents		
18 – 29	25	21.4
30 – 39	37	31.6
40 – 49	41	35.0
50 and Above	14	12.0
Total	117	100
Educational level		
Certificate	40	34.2

Diploma	7	6
Graduate	4	3.4
Maters	2	1.7
Other specifics	64	54.7
Total	117	100
Years suffering from diabetes		
Below 5 yrs.	32	27.4
5 - 10 yrs.	75	64.1
10 and Above	10	8.5
Total	117	100

Source: Research Data (2016)

The study findings on gender indicated that 51.3% were female as opposed to 48.7% male. This implies despite majority of the respondents were female, the gender was well represented and there were no biasness.

As regards the age bracket of the respondents, the study results revealed that majority of the respondents 31.6% were of age bracket 30-39 years, 35.0% of the respondents were of age 40-49 years, 21.4% of the respondents were of age 18-29 years and only 12.0% of the respondents were of age 50 and above years. This could be interpreted to mean that all age brackets were represented during the study to get reliable information; the study was not biased towards age brackets.

The study results on education level of the respondents revealed that majority of the respondents 54.7% had other level of education, 34.2% had certificate level, 6.0% had diploma level, 3.4% had degree level and only 1.7% of respondents had masters. This implies that all education levels were represented to get reliable information.

As regards the year's diagnosis from diabetes, the study results revealed that 64.1% had suffered from diabetes for 5-10 years, 27.4% for less than years while 8.5% for over 10 years. This

implies that majority of the respondents had known about the service and suffering of the disease.

4.4 Analysis of the specific Objectives

In this section, the study analyzes the specific objectives of the study diabetic management program on retention of diabetic patients. These specific objectives were to establish the influence of screening program on retention of on retention of diabetic patients, to assess of follow up care of diabetic patient on the retention, to determine the extent to which awareness management programs affect the retention of diabetic patients, to examine the influence of training programs on the retention of diabetic patients and to assess the extent to which the clinical care programs on the retention of diabetic patients.

4.4.1 The screening programs and retention of diabetic patients

The study sought to establish the influence of screening programs on retention of diabetic patients. The findings were analyzed as shown in the table;

Table 4.2 The screening programs and retention of diabetic patients

Statements		**SD**	**D**	**U**	**A**	**SA**	**TOTAL**	**MEAN**	**%MEAN**	**SD**
The extensive neighborhood screening service promotes the	F	2	0	2	65	48	117	4.34	86.8	0.684
	%	1.7	0	1.7	55.6	41.0	100			
The peers screening classes and mobilization enhance the retention of	F	2	0	1	58	56	117	4.41	88.2	0.709
	%	1.7	0	0.9	49.6	47.9	100			
The clinicians screening	F	2	1	1	52	61	117	4.45	89	0.725

efforts have greatly promoted the retention of	%	1.7	0.9	0.9	44.4	52.1	100			
The proper screening care systems enhances the retention of diabetic	F	1	2	1	55	58	117	4.43	88.6	0.686
	%	0.9	1.7	0.9	47.0	49.6	100			
The patient's roles in the screening process have implicitly promoted the	F	0	2	3	54	58	117	4.44	88.8	0.635
	%	0	1.7	2.6	46.2	49.6	100			

Source: Research Data (2016)

The study results revealed that 86.8% (mean=4.34) were of the view that The extensive neighborhood screening service promotes the diabetic retention, 88.2% (mean=4.41) were of the opinion that The peers screening classes and mobilization enhances the retention of diabetic patients, 89% (mean=4.45) were of the opinion that The clinicians screening efforts have greatly promoted the retention of diabetic patients, 88.6% (mean=4.43) were of the view that The proper screening care systems enhances the retention of diabetic patients while 88.8% (mean=4.44) were of the view that The patients roles in the screening process have implicitly promoted the retention of diabetic patients.

The study results revealed that majority of the respondents were of the opinion that the clinicians screening efforts have greatly promoted the retention of diabetic patients. This implies that the screening efforts which the clinicians have adopted in remote-monitoring had helped them to gauge the degree of control of a patient's diabetes between visits and to modify care plans accordingly. These clinician's efforts has enhance the retentions of diabetic patients.

The study findings from interview schedule from health care workers indicated that the role of screening program is to monitor patient's progress and help in early diagnosis of diabetes and early treatments therefore retaining more patients in the care.

Study findings by Hardeman *(*2013) agree with the findings that remote-monitoring technologies are an extension of the screening concept and methodology that allow clinicians to gauge the degree of control of a patient's diabetes between visits and to modify care plans accordingly. These technologies offer the potential to improve blood glucose, blood pressure, and cholesterol. These extents to patient participation in remote monitoring that would be low and thus many patients would choose not to enroll or to drop out after enrollment. The care process that when fully implemented, national adoption of remote monitoring technologies would have no statistically significant impact on provider decisions to screen for retinopathy, neuropathy, or micro albuminuria.

Another study by (Harries, *2015*) agrees with the findings that the physiology that affirms national adoption of remote-monitoring technologies that would improve average HbA1c by 0.03 percent, SBP by 0.56 mmHg, and total cholesterol by 2.8 mg/dl. The clinical outcomes over the first ten years would impacts on the national adoption of remote-monitoring technologies to cumulatively reduce heart attacks by 12,000, and the diabetes-related mortality by 270,000.

4.4.2 The Follow up Care of patients and retention of diabetic patients

The study sought to investigate the assessment of the Follow up Care on retention of diabetic patients. The results were analyzed in the table below;

Table 4.3 The Follow up Care of patients and retention of diabetic patients

Statements		SD	D	U	A	SA	TOTAL	MEAN	%MEAN	SD
Role of the social service promotes the diabetic patients retentions	F	1	1	3	60	52	117	4.38	87.6	0.666
	%	0.9	0.9	2.6	51.3	44.4	100			
The behavioral interventions greatly enhances the retention of	F	2	1	1	61	52	117	4.37	87.4	0.666
	%	1.7	0.9	0.9	52.1	44.4	100			
The knowledge and methods of follow up have greatly promoted the	F	1	1	2	64	49	117	4.36	87.2	0.649
	%	0.9	0.9	1.7	54.7	41.9	100			
The proper follow up support programs enhances the retention of	F	4	1	1	66	45	117	4.62	92.4	0.822
	%	3.4	0.9	0.9	56.4	38.5	100			
The kinds of follow up methods engaged have implicitly promoted the	F	0	3	4	82	28	117	4.15	83	0.596
	%	0	2.6	3.4	70.1	23.9	100			

Source: Research Data (2016)

The study results revealed that 87.6% (mean=4.38) of the responses were of the opinion role of the social service promotes the diabetic patients retentions, 87.4% (mean=4.37) of the respondents were of the view that the behavioral interventions greatly enhances the retention of diabetic patients, 87.2% (mean=4.36) were of the opinion that their the knowledge and methods of follow up have greatly promoted the retention of diabetic patients, 92.4% (mean=4.62) of the responses were of the opinion that the proper follow up support programs enhances the retention

of diabetic patients while 83.0% (mean=4.15) were of the opinion that the kinds of follow up methods engaged have implicitly promoted the retention of diabetic patients.

The findings of the study revealed that majority of the respondents were of the opinion that proper follow up support programs enhance the retention of diabetic patients. This implies that proper follow up support programs improve self-management and retentions among patients with diabetes. The proper follow up support from diabetes specialist nurses, clinicians and family caregivers are important managing diabetes and enhancing retentions of patients. Proper follow is important component of ongoing diabetes care due to the onerous requirements for program-care that demands multiple daily decisions in order to balance diet, physical activity and medications.

The study findings from interview schedule from health care workers indicated that follow up care of patients improves adherence to clinic visits and adherence to drugs.

The study findings by (WHO & HAI, 2015) are in consonance with these findings that understanding of how follow up program-management intervention supports the patient in dealing with diabetes in everyday life is also imperative for implementation of diabetes treatment aiming at improving and maintaining program follows up-care activities. There has been a keen interest in examining the impact of different kinds of patient follow up education programs' on diabetes self-management but the long-term effect of such programs is still unknown. In spite of that it is widely accepted that diabetes education is not only required in the first few months following diagnosis but is an important component of ongoing diabetes care due to the onerous requirements for program-care that demands multiple daily decisions in order to balance diet, physical activity and medications. Critical assessment of the impact of program-management education requires further research based on rigorous methods in high quality studies with a large

number of participants, long-term follow-up on the effectiveness and well-defined interventions25. A Danish Health Technology Assessment suggested that a long-term effect on progression of diabetes probably requires intensive and lengthy follow up training efforts (Kang, 2011).

These study findings also agrees with study done by Joosten *(*2015) who found out that follow up behaviors rather than physiological outcomes need to be rewarded if self-management changes are to be encouraged and maintained. The study further argued that there is a lack of support for the program-monitoring practice in the healthcare system which could be used to improve the retention of diabetic patients. There was some evidence that multiple lifestyle modifications are beneficial in promoting diabetes program management. Previous research has also suggested that patient follow up involvement; cultural adaptation, family involvement and individualization are important factors in the development of interventions seeking to increase program-management among patients with diabetes (Young, 2015).

4.4.3 The extent of Awareness on retention of diabetic patients

The study sought to establish the extent of Awareness on retention of diabetic patients. The results were analyzed in the table below;

Table 4.4 The extent of Awareness on retention of diabetic patients

Statements		SD	D	U	A	SA	TOTAL	MEAN	% MEAN	SD
The educational programs promotes the diabetic retentions	F	3	8	2	75	29	117	4.28	85.6	0.881
	%	2.6	6.8	1.7	64.1	24.8	100			

The set guidelines greatly enhances the retention of diabetic patients	F	2	4	2	81	28	117	4.10	82	0.736
	%	1.7	3.4	1.7	69.2	23.9	100			
The daily care management methods have greatly promoted the	F	2	4	1	79	31	117	4.15	83	0.742
	%	1.7	3.4	1.7	62.4	29.9	100			
The proper disease knowledge enhances the retention of diabetic	F	3	4	2	73	35	117	4.14	82.8	0.819
	%	2.6	3.4	1.7	62.4	29.9	100			
The professionalism portrayed has implicitly promoted the retention of	F		1	3	75	38	117	4.02	80.4	0.555
	%		9	2.6	64.1	32.5	100			

Source: Research Data (2016)

The study findings revealed that 85.6% (mean=4.28) of the responses were of the opinion that the educational programs promotes the diabetic retentions, 82% (mean=4.10) of the responses were of the opinion that the set guidelines greatly enhances the retention of diabetic patients, 83% (mean=4.15) of the responses were of the opinion that the daily care management methods have greatly promoted the retention of diabetic patients, 82.8% (mean=4.14) of the responses were of the opinion that The proper disease knowledge enhances the retention of diabetic patients, 80.4% (mean=4.02) of the responses were of the opinion that the professionalism portrayed have implicitly promoted the retention of diabetic patients.

The results of the study revealed that majority of the respondents were of the opinion that that the educational programs promotes the diabetic retentions. This gives the implication that it's

important to educate the patient on own role in diabetes treatment diabetes program-management which will enhance retentions of patients. Managing the daily care of diabetes needs education in order for patients to do daily routine of diabetes care and control.

The study findings from the interview schedule from health workers indicated that awareness and sensitization program helps improve community knowledge on diabetes hence improving health seeking behavior.

Study findings by Kelley (2013) are in line with these findings that The patient's own role in diabetes treatment and recognition of the need to educate patients in diabetes program-management has long been considered to be important. The concern about educating patients to take care of their diabetes began more than 100 years ago and was emphasized with the publication of the Diabetic Manual for the Doctor and Patient by Elliot Proctor Joslin in 1918.

Damme (2014) study agrees with this study that managing the daily care of diabetes seems to be a challenging task for many patients, and a patient's ability to be involved in the daily routine of diabetes care seems to be grounded in psychological, motivational as well as educational factors (UK Prospective Diabetes Study (UKPDS) Group, 2011b). Diabetes self-management intervention has emerged as a resource to assist patients in managing daily diabetes care through dissemination of information and facilitation of program-management behaviors

4.4.4 The influence of Training on retention of diabetic patients

The study sought to establish the influence of training on retention of diabetic patients. The results were analyzed in the table below;

Table 4.5 The influence of Training on retention of diabetic patients

Statements		SD	D	U	A	SA	TOTA	MEAN	%MEA	SD
The trained human resource personnel promotes the diabetic patient retentions	F	1	1	4	61	50	117	4.35	87	0.674
	%	0.9	0.9	3.4	52.1	42.7	100			
The role of non-physicians don't greatly enhance the retention of diabetic patients	F	0	0	3	66	48	117	4.38	87.6	0.539
	%	0	0	2.6	56.4	41.0	100			
The volunteers in the system have greatly promoted the retention of diabetic patients.	F	1	1	2	62	51	117	4.39	87.8	0.653
	%	0.9	0.9	1.7	53	43.6	100			
The proper reintegration of the program to the communities to enhance the	F	1	2	3	46	65	117	4.48	89.6	0.714
	%	0.9	1.7	2.6	39.3	55.6	100			
The peers and patients themselves have implicitly promoted the retention of	F	0	0	4	54	59	117	4.47	89.4	0.566
	%	0	0	3.4	46.2	50.4	100			

Source: Research Data (2016)

The study findings revealed that 87% (mean=4.35) of the responses were of the opinion that The trained human resource personnel promotes the diabetic patient retentions, 87.6% (mean=4.38) of the responses were of the opinion that The role of non-physicians don't greatly enhance the retention of diabetic patients, 87.8% (mean=4.39) of the responses were of the view that The volunteers in the system have greatly promoted the retention of diabetic patients, 89.6% (mean=4.48) of the responses were of the view that The proper reintegration of the program to

the communities to enhance the retention of diabetic patients while 89.4% (mean=4.47) of the responses were of the opinion that The peers and patients themselves have implicitly promoted the retention of diabetic patients.

The study findings revealed that majority of the respondents were of the opinion that The proper reintegration of the program to the communities enhances the retention of diabetic patients. This implies if the retention program is reintegrated well to the communities through training people can't fill gaps in health services that are not provided by organized health care. This community training enhances patient's self-care empowerment which in turns increases patient-centeredness. This help in strengthening patients and giving them the opportunity to help each other in dealing with their condition, assisted by the formal health-care system.

The study findings from interview schedule from health care workers indicated that staffs acquired new skills on management of diabetes hence more patients are retain the patients.

Study findings by (2012) agree with these findings that communities can fill crucial gaps in health services that are not provided by organized health care. Besides leveraging the human resource crisis, using patients in the provision of care empowers them and increases patient-centeredness. Strengthening patients and giving them the opportunity to help each other in dealing with their condition, assisted by the formal health-care system, is what patient-centeredness is all about. care provided by patients has the potential of being of better quality than care provided by trained health professionals, since people living with a chronic condition are those that have the most comprehensive expertise in dealing with that condition (UK Prospective Diabetes Study (UKPDS) Group, 2011). Peer support can offer the kind of emotional, social and practical assistance for how to achieve and sustain complex behaviors that are critical for managing chronic conditions and staying healthy (Lorig, 2010).

A study done by Mamo (2012) also agree with our findings that indeed peers, when well trained and given a detailed protocol, teach at least as well as health professionals and possibly better. In fact, the most famous disease-management program, the Chronic Disease Self-Management Programme, is lay-led. With some notable exceptions, most evidence on trained peer support interventions has been generated from high-income, Anglo-Saxon countries. Some of the intervention focused on migrant populations, generating more culturally acceptable variations of existing programs that evaluated the effect of a culturally sensitive diabetes program-management training education program on glucose control and metabolic parameter. An improved significant training intervention group from baseline to 10 months training follow-up, while no significant changes were noted in the control group (Meessen, 2014).

4.4.5 The extent of Clinical Care on retention of diabetic patients

The study sought to find out the extent of Clinical Care on retention of diabetic patients. The results were analyzed in the table below;

Table 4.6 The extent of Clinical Care on retention of diabetic patients

Statements		**SD**	**D**	**U**	**A**	**SA**	**TOTAL**	**MEAN**	**%MEA**	**SD**
The educational program promotes the diabetic patients retentions.	F	3	1	2	49	62	117	4.42	88.4	0.801
	%	2.6	0.9	1.7	41.9	53	100			
The resource setting doesn't greatly enhance the retention of diabetic	F	1	2	1	46	67	117	4.50	90	0.690
	%	0.9	1.7	0.9	39.3	57.3	100			
The clinical decisions in	F	1	2	2	45	67	117	4.51	90.2	0.703

the system have promoted the retention of	%	0.9	1.7	1.7	38.5	57.3	100			
The proper participatory lifestyles enhance the retention of diabetic	F	1	0	1	43	72	117	4.58	91.6	0.605
	%	0.9	0	0.9	36.8	61.5	100			
	F		3	5	41	68	117	4.49	89.8	0.702
The physiological exercise has implicitly promoted the retention of	%		2.6	4.3	35	8.1	100			

Source: Research Data (2016)

The study results revealed that 88.4% (mean=4.42) of the responses were of the opinion that The educational program promotes the diabetic patients retentions, 90% (mean=4.50) of the responses were of the opinion that The resource setting don't greatly enhances the retention of diabetic patients, 90.2% (mean=4.51) of the responses were of the opinion that The clinical decisions in the system have promoted the retention of diabetic patients, 91.6% (mean=4.58) of the responses were of the opinion that The proper participatory lifestyles enhances the retention of diabetic patients while 89.8% (mean=4.49) of the responses were of the opinion that The physiological exercise have implicitly promoted the retention of diabetic patients.

The study results revealed that majority of the respondents were of the opinion that the proper participatory lifestyles enhance the retention of diabetic patients. This implies that clinical decision-support systems on diet and medication enhance the care of patients by improving control of blood sugars and other physiologic parameters. This will improve patient participation on the clinical care and improves lifestyles, as patients generally do not choose to opt out.

Findings of a study by Volman (2015) agree with the findings that the clinical decision-support systems on diet and medication are a powerful aid to clinicians at the point of care By combining patient information with the latest medical knowledge, they offer recommendations to clinicians for optimal individualized care (WDF, 2015). Physicians can use these recommendations to improve control of blood sugars and other physiologic parameters as well as to improve compliance with screening and other care-process guidelines (World Bank, 2014).

These findings are also consistent with the findings of Twaddell, (2015) who found out that patient participation on the clinical care would be relatively high and improves lifestyles, as patients generally do not choose to opt out. The primary source of patient non-participation would be failure by the management program to identify eligible candidates for enrollment. While the care process upon the full implementations, national adoption would improve average retinopathy screens from 14 percent to 24 percent, peripheral neuropathy screens from 45 percent to 68 percent, and the micro albuminuria screening from 45 percent to 61 percent (Simon, 2010). Physiology too when fully implemented, national adoption would improve average HbA1c by 0.28 percent, increase in SBP by 4.0 mmHg, and total cholesterol by 4.5 mg/dl (Uitewal, 2013). The clinical outcomes over the first ten years, national adoption would cumulatively increase strokes by 12,000 (This result likely reflects the projected increase in blood pressure, reduce kidney failure by 2,600, reduce amputation by 340,000, reduce blindness by 20,000, and educe diabetes-related mortality by 210,000 (Reboldi, 2011).

4.4.6 The assessment of retention of diabetic patients

The study sought to find out the assessment of retention of diabetic patients. The results were analyzed in the table below;

Table 4.7 The assessment of retention of diabetic patients

Statement		SD	D	U	A	SA	TOTAL	MEAN	%MEAN	SD
The quality programs	F	2	0	2	65	48	117	4.46	89.2	0.815
promote the diabetic patient	%	1.7	0	1.7	55.6	41.0	100			
retentions.										
The proper network setting	F	2	0	1	58	56	117	4.26	85.2	0.712
doesn't greatly enhance the	%	1.7	0	0.9	49.6	47.9	100			
retention of diabetic										
The general health system	F	2	1	1	52	61	117	4.27	85.4	0.712
has greatly promoted the	%	1.7	0.9	0.9	44.4	52.1	100			
retention of diabetic										
The proper attributes of the	F	1	2	1	55	58	117	4.21	84.2	0.741
programs enhances the	%	0.9	1.7	0.9	47.0	49.6	100			
retention of diabetic										
The decentralized practices	F	0	2	3	54	58	117	4.37	87.4	0.702
focusing on the personal	%	0	1.7	2.6	46.2	49.6	100			
characteristics have										

Source: Research Data (2016)

The study results revealed that 89.2% (mean=4.46) of the responses were of the opinion that The quality programs promotes the diabetic patient retentions, 85.2% (mean=4.26) of the responses were of the opinion that The proper network setting don't greatly enhances the retention of diabetic patients, 85.4% (mean=4.27) of the responses were of the opinion that The general health system have greatly promoted the retention of diabetic patients, 84.2% (mean=4.21) of the responses were of the opinion that The proper attributes of the programs enhances the retention of diabetic patients while 87.4% (mean=4.37) of the responses were of the opinion that

The decentralized practices focusing on the personal characteristics have implicitly promoted the retention of diabetic patients.

The study results revealed that majority of the respondents were of the opinion that The quality programs promote the diabetic patient retentions. This implies that when diabetic program is good the patients are more likely to be retaining in the program. once the patients with diabetes attends the program and fount it good in their second or third consecutive review, they are more likely to continue to participate year after year.

The study findings of interview schedule from health care workers indicated that close clinical care program ensures proper management of diabetic patients hence minimizing lost to follow up.

Findings of a study by Rose (2012) agree with the findings that once a patient with diabetes attends their second or third consecutive review, they are more likely to continue to participate year after year. That study followed the patient cohort across practices and investigated the effect of patient factors such as age, gender and ethnicity on retention in the programme. The patient and attributes of the practice can also play an important role. Specifically, an increased or equal practice nurse to general practitioner ratio may improve the rate at which patients attend regularly (Haynes, 2010).

The practices even if captured in another Midlands Health Network practice over the four-year period were removed. Using the above definition of retention, rates of patients having been 'retained' in the programme were calculated to investigate the effect of patient and practice factors on retention. Those factors investigated were patient age, sex and ethnicity, practice rurality, funding type, and ratio (Samb, 2015).

4.5 Inferential Statistics

4.5.1 Regression Analysis

The study sought to determine the relationship between the independent and dependent variables. The study used a multiple regression model.

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \varepsilon$$

Where:

x= The independent variables - x_1 = Role of screening program

x_2=Follow up care

x_3=Awareness and sensitization program

x_4 =Staff training programs

x_5 =Clinical care program

Y = The dependent variable (Retention of diabetic patients)

β- Scalar or a vector

The findings are represented in (Table 4. 8)

Table 4.8 Regression Analysis without moderating variable

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.661[a]	.437	.412	.42273		
ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	15.395	5	3.079	17.229	.000[b]
	Residual	19.836	111	.179		
	Total	35.231	116			
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.515	.432		3.509	.001
	Role of screening program	.090	.124	.185	2.723	.041
	Follow up care	.230	.149	.209	2.551	.012
	Awareness and sensitization program	.273	.111	.285	2.461	.015
	Staff training programs	-.282	.130	-.237	-2.179	.031
	Clinical care program	.340	.097	.384	3.519	.001
a. Dependent Variable: F						

The model summary from the regression model indicated that about 43.7% of the data could be accounted for in the regression while it indicated a significant relation (p= 0.000) to imply that the data that had been employed in the regression model had not been computed by chance.

The ANOVA (table 4.8) for the regression indicated that the results computed using the regression model were significant (F= 17.229, p=0.000) meaning that the regression model was significant. It can be used to predict the dependent variable.

From the coefficients, the study was able to illustrate the completion of projects as indicated in the equation below:

Retention of diabetic patients = 1.515 + 0. 185 (role of screening program) + 0.209 (Follow up care) + 0.285 (Awareness and sensitization program) – 0.237 (Staff training programs) + 0.384 (Clinical care program)

These results were interpreted to mean clinical care program was the most important variable in retention of diabetic patients contributing about 38.4% awareness and sensitization program was also important in retention of diabetic patients contributing 28.5% staff training programs contributed 23.7% to the retention of diabetic patients, follow up care contributed 20.9% and role of screening program contributed 18.5% to the retention of diabetic patients.

These findings could be interpreted to mean that clinical care program determines the retention of diabetic patients. This may suggest that a good clinical care program enhance retentions of diabetic patients in that they encourage them to participate in the program to control the diabetic disease.

These findings agree with a study by (Swinnen, 2015) which found that comparing structured lay-led diabetic program-management education programmes for chronic conditions against no

intervention or clinician-led programmes depicted ideal clinical scenarios. Seventeen trials involving 7442 participants were involved the interventions shared similar structures and components but studies showed heterogeneity in conditions studied, outcomes collected and effects. Only one study provided data on outcomes beyond six months, and only two studies reported clinical outcomes. They concluded that lay-led diabetic-management education programmes may lead to small, short-term improvements in participants' self-efficacy, diabetic-rated health, cognitive symptom management and frequency of aerobic exercise. However, they also stated that there is insufficient evidence to suggest that these programmes improve psychological health, symptoms or health-related quality of life, or that they significantly alter health-care use (Philis-Tsimikas, 2011).

4.6 Hypotheses Testing

Hypothesis was tested at 5% alpha level of significance.

H_{01} There is no significant relationship between screening program and retention of diabetic patients in Burnt Forest Sub District Hospital

The findings from regression model shows that there was a significant relationship between screening program and retention of diabetic patients in Burnt Forest Sub District Hospital (p=0.041), hence the finding rejected the null hypothesis.

H_{02} There is no significant relationship between follow up care and the retention of diabetic patients Burnt Forest Sub District Hospital.

The finding from regression model shows that there is significant relationship between follow up care and the retention of diabetic patients Burnt Forest Sub District Hospital (p=0.012), hence the finding reject the null hypothesis.

H_{o3} There is no significant relationship between awareness management programs and the retention of diabetic patients Burnt Forest Sub District Hospital.

The finding from regression model shows that there was no significant relationship between awareness management programs and the retention of diabetic patients Burnt Forest Sub District Hospital (p=0.015) hence the study rejected the null hypothesis

H_{04} There is no significant relationship between training programs and the retention of diabetic patients Burnt Forest Sub District Hospital.

The finding from regression model shows that there was a significant relationship between training programs and the retention of diabetic patients Burnt Forest Sub District Hospital (p=0.031), hence the study reject the null hypothesis.

H_{05} There is no significant relationship between clinical care programs assist and the retention of diabetic patients Burnt Forest Sub District Hospital.

The finding from regression model shows that there was a significant relationship between clinical care programs assist and the retention of diabetic patients Burnt Forest Sub District Hospital (p=0.001), hence the study reject the null hypothesis.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

It helps the researcher to summarize the findings of the study undertaken, discuss and to conclude and make recommendations based on the findings of the study. It therefore, presents a summary of findings from the data analysis and generates conclusions from questions that were answered by the respondents and presents the way forward on the improvement of the problem under investigation.

5.2 Summary of the findings

Based on the responses of the study, the researcher summarized the findings below.

The study results revealed that 86.8% were of the view that The extensive neighborhood screening service promotes the diabetic retention, 88.2% were of the opinion that The peers screening classes and mobilization enhances the retention of diabetic patients, 89% were of the opinion that The clinicians screening efforts have greatly promoted the retention of diabetic patients, 88.6% were of the view that The proper screening care systems enhances the retention of diabetic patients while 88.8% were of the view that The patients roles in the screening process have implicitly promoted the retention of diabetic patients

The study results revealed that 87.6% of the responses were of the opinion role of the social service promotes the diabetic patients retentions, 87.4% of the respondents were of the view that the behavioral interventions greatly enhances the retention of diabetic patients, 87.2% were of the opinion that their the knowledge and methods of follow up have greatly promoted the retention of diabetic patients, 92.4% of the responses were of the opinion that the proper follow

up support programs enhances the retention of diabetic patients while 83.0% were of the opinion that the kinds of follow up methods engaged have implicitly promoted the retention of diabetic patients.

The study findings revealed that 85.6% of the responses were of the opinion that the educational programs promotes the diabetic retentions, 82% of the responses were of the opinion that the set guidelines greatly enhances the retention of diabetic patients, 83% of the responses were of the opinion that the daily care management methods have greatly promoted the retention of diabetic patients, 82.8% of the responses were of the opinion that The proper disease knowledge enhances the retention of diabetic patients, 80.4% of the responses were of the opinion that the professionalism portrayed have implicitly promoted the retention of diabetic patients.

The study findings revealed that 87% of the responses were of the opinion that The trained human resource personnel promotes the diabetic patient retentions, 87.6% of the responses were of the opinion that The role of non-physicians don't greatly enhance the retention of diabetic patients, 87.8% of the responses were of the view that The volunteers in the system have greatly promoted the retention of diabetic patients, 89.6% of the responses were of the view that The proper reintegration of the program to the communities to enhance the retention of diabetic patients while 89.4% of the responses were of the opinion that The peers and patients themselves have implicitly promoted the retention of diabetic patients.

The study results revealed that 89.2% of the responses were of the opinion that The quality programs promotes the diabetic patient retentions, 85.2% of the responses were of the opinion that The proper network setting don't greatly enhances the retention of diabetic patients, 85.4% of the responses were of the opinion that The general health system have greatly promoted the retention of diabetic patients, 84.2% of the responses were of the opinion that The proper

attributes of the programs enhances the retention of diabetic patients while 87.4% of the responses were of the opinion that The decentralized practices focusing on the personal characteristics have implicitly promoted the retention of diabetic patients.

From the coefficients, the study was able to illustrate the completion of projects as indicated in the equation below:

Retention of diabetic patients = 1.515 + 0. 185 (role of screening program) + 0.209 (Follow up care) + 0.285 (Awareness and sensitization program) – 0.237 (Staff training programs) + 0.384 (Clinical care program)

These results were interpreted to mean clinical care program was the most important variable in retention of diabetic patients contributing about 38.4% awareness and sensitization program was also important in retention of diabetic patients contributing 28.5% staff training programs contributed 23.7% to the retention of diabetic patients, follow up care contributed 20.9% and role of screening program contributed 18.5% to the retention of diabetic patients.

5.3 Conclusions

The study concluded that the clinicians screening efforts have greatly promoted the retention of diabetic patients. This implies that the screening efforts which the clinicians have adopted in remote-monitoring had helped them to gauge the degree of control of a patient's diabetes between visits and to modify care plans accordingly.

The study concluded that proper follow up support programs enhance the retention of diabetic patients. This implies that proper follow up support programs improve self-management and retentions among patients with diabetes. The proper follow up support from diabetes specialist nurses, clinicians and family caregivers are important managing diabetes and enhancing retentions of patients.

The study concluded that the educational programs promote the diabetic retentions. This gives the implication that it's important to educate the patient on own role in diabetes treatment diabetes program-management which will enhance retentions of patients. Managing the daily care of diabetes needs education in order for patients to do daily routine of diabetes care and control.

The study concluded the proper reintegration of the program to the communities enhance the retention of diabetic patients. This implies if the retention program is reintegrated well to the communities through training people can't fill gaps in health services that are not provided by organized health care. This community training enhances patient's self-care empowerment which in turns increases patient-centeredness.

The study concluded that the quality programs promote the diabetic patient retentions. This implies that when diabetic program is good the patients are more likely to be retaining in the program. Once the patients with diabetes attends the program and fount it good in their second or third consecutive review, they are more likely to continue to participate year after year.

The study concluded that clinical care program determines the retention of diabetic patients. This may suggest that a good clinical care program enhance retentions of diabetic patients in that they encourage them to participate in the program to control the diabetic disease.

5.4 Recommendation

The researcher recommends that:

Awareness of diabetic management program should be extensively carried out in neighborhood by health care workers through community leaders to promote the diabetic retention of patients.

Diabetic management program managers should encourage interventions in their service in order to improve the patient's role in diabetes treatment and knowledge about how patients with diabetes experience this should be done routinely during patients clinic visit.

Diabetic management program managers should train health care professionals through mentorship programmes quarterly to focus on the patients, their lives and their health problems, rather than on the disease and disease management in diabetes treatment in order to improve the retentions of the diabetic patients in the program.

Diabetic management program managers should increase the number of human resources through recruitment process for health in their service especially when the number of diabetic cases rise, in order to help health care personnel in delivering the service to enhance the retention of diabetic patients in the program.

5.5 Suggestions for Further Research

The researcher recommends for a similar study to be done at a wider scope say in Uasin Gishu as a whole. This will enable the researchers consider the problems from a broad perspective which will benefit all diabetic patients in Uasin Gishu county.

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APPENDIES

APPENDIX I: INTRODUCTORY LETTER

Dear sir/ madam/Respondent

Re; Research questionnaire

I am a student at University of Nairobi undertaking a Masters degree in Project planning and management. I am conducting a study on **INFLUENCE OF DIABETIC MANAGEMENT PROGRAM ON RETENTION OF DIABETIC PATIENTS, A CASE OF BURNT FOREST SUBDISTRICT HOSPITAL**.

The study is conducted purely for academic purposes. It is not meant to evaluate your opinion or demean your Hospital in any way whatsoever. Your response will be strictly confidential to provide insight into the issues under study and thereby suggest possible solution to them. Your responses will be treated with uttermost confidentiality.

In view of this therefore, I wish to kindly request you to fill the questionnaire attached. Please respond to the items in the questionnaire completely and as truthful as possible.

Thank you.

Yours faithful

……

Name…….

Client consent……..

APPENDIX II: QUESTIONNAIRE

SECTION A: BACKGROUND INFORMATION

Gender; Male { } Female { }

Age bracket; 18-29 years { } 30-39 years { } 40-49 years { } Over 51 years{ }

For how long have you been in contact with the diabetes?

Below 5years { } between 5 – 10 Years { } 10 years and above { }

Education level; Certificate { } Diploma { } Undergraduate { } Masters { }

Other specify……

SECTION B: SPECIFIC INFORMATION

Q1. **The role of screening services on retention of diabetic patients.**

In your own opinion do you agree to the following statements on the effects of screening services on retention of diabetic patients?

(SA: Strongly Agree**; A:** Agree**; UD:** Undecided**; D:** Disagree **and SD:** Strongly Disagree**)**

Statements	**SA**	**A**	**UD**	**D**	**SD**
The extensive neighborhood screening services promotes the diabetic patients retentions					
The peers screening classes and mobilization enhances the retention of diabetic patients					

The clinicians screening efforts have greatly promoted the retention of diabetic patients					
The proper screening care system enhances the retention of diabetic patients					
The patients roles in the screening process have implicitly promoted the retention of diabetic patients					

Other specify……

Q2. **The role of Follow up Care on retention of diabetic patients.**

In your own opinion do you agree to the following statements on the follow up care on retention of diabetic patients?

(SA: Strongly Agree**; A:** Agree**; UD:** Undecided**; D:** Disagree **and SD:** Strongly Disagree**)**

Statements	**SA**	**A**	**UD**	**D**	**SD**
The role of the social services promotes the diabetic patients retentions					
The behavioral interventions greatly enhances the retention of diabetic patients					
The knowledge and methods of follow up have greatly promoted the retention of diabetic patients					
The proper follow up support programs enhances the retention of					

diabetic patients					
The kinds of follow up methods engaged have implicitly promoted the retention of diabetic patients					

Other specify……

Q3. **The role of Awareness and Sensitization on retention of diabetic patients.**

In your own opinion do you agree to the following statements on the Awareness and Sensitization on retention of diabetic patients?

(SA: Strongly Agree**; A:** Agree**; UD:** Undecided**; D:** Disagree **and SD:** Strongly Disagree

Statements	**SA**	**A**	**UD**	**D**	**SD**
The educational programs promotes the diabetic patients retentions					
The set guidelines greatly enhances the retention of diabetic patients					
The daily care management methods have greatly promoted the retention of diabetic patients					
The proper the proper disease knowledge enhances the retention of diabetic patients					
The professionalism portrayed have implicitly promoted the retention of diabetic patients					

Other specify……

Q4. **The role of Training on retention of diabetic patients.**

In your own opinion do you agree to the following statements on the training on retention of diabetic patients?

(SA: Strongly Agree**; A:** Agree**; UD:** Undecided**; D:** Disagree **and SD:** Strongly Disagree

Statements	**SA**	**A**	**UD**	**D**	**SD**
The trained human resource personnel promotes the diabetic patients retentions					
The role of non-physicians don't greatly enhances the retention of diabetic patients					
The volunteers in the system have greatly promoted the retention of diabetic patients					
The proper reintegration of the program to the communities too enhances the retention of diabetic patients					
The peers and patients themselves have implicitly promoted the retention of diabetic patients					

Other specify……

Q5. **The role of Clinical Care on retention of diabetic patients.**

In your own opinion do you agree to the following statements on the clinical care services on retention of diabetic patients?

(SA: Strongly Agree**; A:** Agree**; UD:** Undecided**; D:** Disagree **and SD:** Strongly Disagree

Statements	**SA**	**A**	**UD**	**D**	**SD**
The educational programs promotes the diabetic patients retentions					
The resource setting don't greatly enhances the retention of diabetic patients					
The clinical decisions in the system have greatly promoted the retention of diabetic patients					
The proper participatory lifestyles enhances the retention of diabetic patients					
The physiological exercise have implicitly promoted the retention of diabetic patients					

Other specify……

Q6. **The assessment of retention of diabetic patients.**

In your own opinion do you agree to the following statements on the retention of diabetic patients?

(SA: Strongly Agree**; A:** Agree**; UD:** Undecided**; D:** Disagree **and SD:** Strongly Disagree

Statements	**SA**	**A**	**UD**	**D**	**SD**
The quality programs promotes the diabetic patients retentions					
The proper network setting don't greatly enhances the retention of diabetic patients					
The general health system have greatly promoted the retention of diabetic patients					
The proper attributes of the programs enhances the retention of diabetic patients					
The decentralized practices focusing on the personal characteristics have implicitly promoted the retention of diabetic patients					

Other specify……

APPENDIX III: INTERVIEW SCHEDULE FOR MANAGEMENT

i. What is the role of routine screening program on retention of diabetic patients?.....

.....

.....

ii. What is the influence of follow up care on the retention of diabetic patients?.....

.....

.....

iii. What is the role of awareness and sensitization program on the retention of diabetic

patients?.....

.....

.....

iv. What is the role of the staff training programs on the retention of diabetic patients?.....

.....

.....

v. What are the roles of the close clinical care programs on the retention of diabetic patients?.....

.....

.....