Determination of quality of health care offered by clinical officers in Kenya: Patients satisfaction and performance assessment

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

Signature……. Date……

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This thesis has been submitted for examination with our approval as the university supervisors.

DEDICATION

To my parents Teresia Wangechi Karanja and Karanja Njaguara Ngurura.

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LIST OF ABBREVIATIONS AND ACRONYMS

AMGA	American Medical Group Association
AIDS	Acquired Immunodeficiency Syndrome
AMREF	Africa Medical Research Foundation
CAHPS	Consumer Assessment of Health Plans Study
CBHC	Community Based Health Care
CBS	Central Bureau of Statistics
CFA	Common Factor Analysis
CI	Confidence Interval
COC	Clinical Officers Council
COMESA	Common Market for Southern Africa
COs	Clinical Officers
CPD	Continuous Professional Development
CSQ	Consultation Satisfaction Questionnaire
DCMS	Diploma in Clinical Medicine and Surgery
DMOH	District Medical Officer of Health
EAEP	East African Educational Publishers
ENT	Ear, Nose and Throat
EPSS	External Patient Satisfaction Survey
EUROPEP	The European Task force for Patient Evaluation of General Practice
FQE	Final Qualifying Examination
GoK	Government of Kenya
HEDIS	Health Plan Employer Data and Information Set

HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
ICF	Inter City Fund
IOM	Institute of Medicine
KCOA	Kenya Clinical Officers Association
KMTC	Kenya Medical Training College
KNBS	Kenya National Bureau of Statistics
MCH/FP	Maternal Child Health and Family planning
MISS-29	The Medical Interview Satisfaction Survey
MoMS	Ministry of Medical Services
MoH	Ministry of Health
MOPHS	Ministry of Public Health and Sanitation
MOS	Medical Outcomes Study
NGO	Non Government Organizations
NACC	National AIDS Control Council
ORC	Opinion Research Corporation
PHC	Primary Health Care
PSQ	Patients' Satisfaction Questionnaire
PSAT	Patients Satisfaction Assessment Tool
SD	Standard Deviation
SERVQUAL	Service Quality
SPSS	Statistical Package for Social Sciences
SSA	Sub Sahara Africa

USA	United States of America
VSQ-9	Visit Specific Satisfaction Questionnaire 9

ABSTRACT

In Kenya Clinical officers (COs) are important health care providers. However, data on the quality of the services they offer is not readily available. This limitation partly compromises efforts that aim at improving the quality of health care. This study aimed at establishing the quality of health care services that are offered by COs in Kenya from both the provider and patients' perspectives. A descriptive survey approach was adopted in this study. The setting of this study was the consulting rooms of COs in public health facilities across the country. A sample of 18 former districts (now counties) in all the former eight provinces of the country was randomly selected. Lists of all COs working in public health facilities in the selected districts were prepared. A total of 367 COs were randomly selected from the prepared lists. In addition, 2118 adult patient who consulted the selected COs were randomly selected. A Patients Satisfaction Assessment Tool (PSAT) was established using standard scale development procedures. This tool was administered by trained research assistants. The selected COs were also requested to fill a questionnaire on their socio-demographic characteristics and rate their performance in ten general aspects of their practice. The average age of the patients was 31.31 years (SD = 13.64). The patients were mostly females (58%), married (51%) and had secondary level education (38%). Most patients stated that they have middle level income (64%) and the majority lived in urban areas (60%). The PSAT showed good internal consistency with a Cronbach's alpha (α) of 0.92, and was positively correlated with a widely validated global rating of patients' satisfaction (Pearsons correlation coefficient, $r = 0.24$, $\rho < 0.01$). The patients gave the COs an overall score of 67% on the quality of services they received. The quality aspect of 'waiting to see the clinical officer' was given the lowest

score at 56%. Regression analysis showed that patients from rural areas tended to rate satisfaction more favourably ($\beta = 0.09$, $\rho < 0.05$) while sicker patients tended to rate it less favourably ($\beta = -0.03$, $\rho < 0.05$). Both correlates however showed minimal effects on patient satisfaction (Eta squared = 0.01). The average age of the COs was 37.60 years (SD = 9.48). Further results showed that the typical clinical officer is male (73%) and married (78%). Over half of the COs (54%) held administrative positions. Most COs hold diploma level education (54%) while few had published (13%) or were members of voluntary organization (35%). A performance index was calculated by summing ratings of the ten general aspects of COs practice. This index showed some promise ($\alpha = 0.65$). The COs gave themselves an average score of 32.85 (SD = 3.60) on self assessed performance, with a range of 18-40. Most of the COs (33.8 percent) rated their performance at best practice. Noted deficiencies were mainly in generic skills particularly in information technology, management and finance. The number of trainings attended ($\beta = 0.24$, $\rho < 0.05$), having no publications ($\beta = -1.74$, $\rho < 0.05$) and holding no administrative duties ($\beta = -3.26$, $\rho < 0.05$) were statistically associated with self assessed performance. The results suggest that the PSAT is a valid and internally reliable tool for assessing patient satisfaction with their visit to COs. The need to adjust the tool for patients' characteristics is however not supported by the data. Further, the patients rated the quality of their visit to COs at below complete satisfaction. Elsewhere, the COs rated their performance in general aspects of practice at below best practice. The results can be used by COs to improve the quality of health care. The need to train COs in management, client handling and patient centred accountability is suggested.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

The need to improve quality of health care is gaining prominence worldwide. Delivery of quality health care services is crucial since clients tend to seek out high quality services in the first place and are more likely to complete the treatments that they receive (Brook *et al*., 2000). In Kenya, enhancing the quality of care is a priority in health reforms (Ministry of Medical Services (MoMS), 2008).

Performance monitoring is one important area of focus in the proposed reforms. Therein the Government of Kenya (GoK) states that it intends to improve the quality of hospital services by at least 50% when measured technically and by clients (GoK, 2006; MoMS, 2008). However, the included outputs and their indicators indicate a bias towards assessment of quality of services at the level of the health facility. In this direction, emerging reports indicate that patients are satisfied with their hospital visits (Ministry of Health (MoH), 2007; MoMS and Ministry of Public Health and Sanitation (MOPHS), 2010). In such reports however, the assessment of the quality of care offered by different cadres of providers (such as doctors, nurses and Clinical Officers (COs) is neglected or not explicitly emphasized.

The need to appraise the performance of individual health providers is a key health policy agenda in Kenya (MoMS, 2008). Availability of reliable data on the quality of care

offered by different cadres of health care providers is critical in monitoring health reforms and indicating areas where action is required.

This study however, focused only on COs, an important cadre of middle level health providers in the country (GoK, 1990). Focusing on these providers is warranted since they are front line managers of patients in both rural and urban health facilities across the country (MOPHS, 2009).

Quality of care is generally defined as the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge (Institute of Medicine (IOM), 1990). The definition highlights two components that are important to people. The first component is provision of high technical quality. Patients should receive only the procedures, tests, or services for which the desired health outcomes exceed risks by a sufficiently wide margin. The second component underscores the need of patients to be treated in a humane and culturally appropriate manner and be invited to participate fully in deciding about their therapy.

Operationally, the concept of quality in health care systems has at least three aspects: structure (innate characteristics of the clinicians and the health care system), process (what health providers do to people) and outcomes (what happens to people, particularly in terms of their health) (Donabedian, 1980). Debate on which of these three measures of the quality of health care is appropriate is rife in literature (Donaldson, 1999; Brook *et al*., 2000; Campbell, 2010). Overall this debate suggests that quality of health care can be measured and improved. Assessing the quality of health systems in the developing

countries, Kenya included is attractive since health requirements are enormous and resources are always in short supply.

In an era of limited resources and limitless needs, simple and inexpensive ways of improving the quality of the health care system are of the utmost importance. Quality assessment is a vital component of maintaining and improving the quality of care provided by a health system (IOM, 1990). The assessment of the quality of care offered by individual providers is considered an important part of health system assessment (Campbell, 2010). There is an emerging trend where the quality of care offered by health care providers is assessed from both the perspective of the patients and that of the clinicians themselves (Brandley *et al*., 2002). The assessment by patients helps to identify their perceptions about the services they receive while that of clinicians establishes the performance of clinical practice. Reliable data on the productivity of health care providers is rarely assembled in many developing countries and more so in Kenya (Luoma *et al*., 2010). Therefore need exists to assess the quality of care offered by health care providers as a prerequisite of making the delivery of health service to be not only more client-centred but more efficient and effective.

The concept of patients' satisfaction is widely used to assess quality of health care from the clients' perspective (Donabedian, 1980; Parasuraman *et al*., 1985; IOM, 1990; Donaldson, 1999; Vinagre and Neves, 2008). A common approach to defining satisfaction is to relate it to consumers' desires or aims and the extent to which these are fulfilled after the phase of consumption. In its earlier formulation, a service was considered to be of quality whenever perceptions exceeded user's expectations (Parasuraman *et al*., 1985). Current thinking however, considers the judgment process to

be attitudinal and not perceptive (Vinagre and Neves, 2008). Further, patients' satisfaction with health care is based on the summation of the very subjective assessments of the dimensions of the health care experience. These dimensions include among others aspects of access and the interpersonal skills of the health care provider (Brook *et al.*, 2000). Assessing patients' satisfaction has been found to be critical in the implementation of continuous improvements in medical settings (IOM, 1990). Rigorous studies on patients' satisfaction with services offered by individual cadres of health care providers are largely unavailable in Kenya. This study addressed this gap in literature by assessing patients' satisfaction with services offered by COs.

The performance of health care providers may be seen as something that people actually do and which can be observed and is considered crucial in the provision of high quality health care services (Kak *et al*., 2001). By definition, it includes only those actions or behaviours that are relevant to the organization's goals and that can be scaled (measured) in terms of each person's proficiency (that is, level of contribution). Target actions and behaviours are context specific and range from clinical work to general management of health care resources (Campbell, 2010).

Self assessment is emerging as an important tool for measuring the performance of health care providers. It is defined generally as the ability of a health worker to reflect on his or her own performance strengths and weaknesses in order to identify learning needs, conduct a review of his or her performance, and reinforce new skills or behaviours in order to improve performance (Sujata *et al*., 2001). It has been used regularly by clinicians to ensure that they act within their areas of expertise and to help them remain up-to-date with advances in medicine (Campbell, 2010). The use of self assessment in

measuring the performance of health care providers is not common in the Kenya. This study offered COs in Kenya a chance of self reporting on their performance. This was important as it allowed them to participate in the processes and decisions that may ultimately affect their practice.

1.2 Statement of the Problem

Clinical Officers' (CO's) are among the many cadres of providers in the Kenya's health care systems that are entrusted with provision of quality health care services. They are legally recognized as qualified medical practitioners in Kenya (GoK, 1990). CO's are required to among others run health units, examine and treat patients, prepare legal documents such as medical certificates, death notification, P3 forms and present medical evidence in court. They are expected to offer services of the highest standards (MoH, 2005; GoK, 2012). However, there are concerns about the quality of health care services that are offered by COs' in Kenya. Noted areas of concern are on the COs concentration on curative health relative to preventive health (Karanja *et al*., 2012) and on the quality of their interpersonal communication skills (Karanja, 2009). Data that can inform the design of appropriate interventions that can be used to enhance the quality of care offered by COs is limited. This deficiency partly compromises reforms that aim at attaining health equity in the country. This study adds to existing literature by establishing the quality of health care services that are offered by COs in Kenya from both the provider and patients perspectives.

1.3 Justification and Significance of the Study

The need to make health services both more clients-centred and more efficient and effective is a key focus of health reforms in Kenya (GoK, 2007; MoMS, 2008). This however poses special challenges. In an era of limited resources and limitless needs, simple and inexpensive ways of improving the quality of the health care system are of the utmost importance. With a shortage of health care workers, especially in rural areas, helping the existing providers to be as productive as possible and to perform up to standard becomes especially important. Moreover, increasing the productivity of existing providers is almost always more cost-effective than hiring more workers, and in some cases hiring more providers may be impossible (Luoma *et al*., 2010). A prerequisite is the availability of reliable data. However, rigorous studies on productivity of health care providers in Kenya are limited. Assessing the quality of care offered by different cadres of health care providers is therefore necessary. Being frontline managers of patients in both rural and urban health facilities across the country (MOPHS, 2009), focusing on COs as a starting point is justified.

Clinical Officers' have been offering preventive, promotive and curative health care services in Kenya since the 1930s. However, understanding on the quality of health care services that they offer is limited. The assessment of the quality of services offered by COs has the potential to provide data that can be used in the improvement on the training and practice of COs in Kenya. The developed quality assessment tool can be incorporated in current quality of health care assessment system in the country. This tool has the potential of being used in future research in quality assessment of the health system. The presented data helps in furthering the understanding on what clients think about the

services that are offered by COs. Results of this study can be used as baseline data in a framework meant for monitoring and evaluation of health systems. The study further provides feedback on personal strengths and weaknesses of COs. This data has the potential to guide future learning, foster a habit of self-reflection and self remediation and promote access to advanced learning.

1.4 Objectives of the Study

1.4.1 General Objective

The general objective of this study was to determine the quality of health care services offered by COs in Kenya.

1.4.2 Specific Objectives

The specific objectives were to:

1. Develop a tool for measuring the quality of health care services offered by COs in Kenya.

2. Establish patients' satisfaction with services offered by COs in Kenya.

3. Identify the performance of COs in Kenya through self assessment.

1.5 Research Questions

1. What are the key components of an evaluation tool that can be used to establish the quality of health care services offered by COs in Kenya?

2. To what extent are patients satisfied with the services they receive from COs in Kenya?

3. What areas in practice do COs in Kenya feel needs improvement?

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 The Status of Delivery of Health Care Services in Kenya

Health care services refer to efforts provided to individuals or communities by agents of the health services or professions to promote, maintain, monitor, or restore health. Provision of quality health care services remains a challenge to the Government of Kenya. Kenya's human population is approximately 38,610,097 million (Kenya National Bureau of Statistics (KNBS), 2010). Infant mortality rate in the country is among the highest in the world at 79 deaths per 1,000 live births (GoK, 2007). Further, life expectancy has declined from a peak of 60 years in 1989 to 53 years in the year 2007. Malaria, respiratory infections, diarrheal diseases and diseases of the skin are the main causes of outpatient morbidity in the country (Ministry of Public Health and Sanitation (MOPHS), 2009). In addition, human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) poses serious challenges in Kenya (National AIDS Control Council (NACC), 2009). Provision of quality health care services is an important avenue of addressing these challenges.

Several challenges in the current health care system in Kenya have been documented (GoK, 2007). These include: limited access to affordable health care, the negative impacts of preventable diseases such as HIV/AIDS, malaria and tuberculosis as well as road carnage, inefficiency in the overall use of health resources and the unequal distribution of quality health care among the country's income groups, regions and rural versus urban areas. There is also an over emphasis on curative health care in Kenya. For

example in 2006, 51% of public sector expenditures in health went towards curative health and only 5% was dedicated to preventive and promotive health care (GoK, 2007). Key indicators of health such as infant mortality (79 per 1,000 live births) and maternal mortality (410 per100, 000 live births) in Kenya are among the highest in the world Central Bureau of Statistics, (CBS), MoH and Opinion Research Corporation (ORC) Macro, 2004). Concerns have also been raised on the poor work ethic among health care personnel (GoK, 2007). These challenges impact negatively on the quality of health care services that Kenyans access. The reduction of health inequalities and the reversal of the downward trend in health-related outcome and impact indicators is a key aim of GoK.

The Kenya Vision 2030 is the country's long term development blueprint that covers the period 2008 to 2030 (GoK, 2007). Vision 2030 aims at making Kenya a newly industrialized middle income country that provides high quality life for all its citizens by the year 2030. Provision of high quality health services is expected to play an important role in making Kenya an industrialized country. Health reforms are therefore deemed necessary. Among the major reforms are restructuring the health care delivery system and a shift from the overemphasis on curative to promotive health (MoMS, 2008). Priority will be given to decentralizing the health care delivery system, lowering the incidence of preventable diseases, control of environmental threats to health and research that targets the medical needs of communities and households in their specific circumstances (GoK, 2007). Public education programmes will also be initiated to help Kenyans to change their lifestyles in ways that improve their health. These reforms have important implications especially on the quality of services that are offered by different cadres of health care providers. Of immediate concern is that reliable data that can be used to

evaluate the health reform proposals in Kenya Vision 2030 is not readily available. Providing such baseline data has the promise to offer concrete input in future evaluations of the health reform proposals that are stated in Kenya Vision 2030.

At the sectoral level, the delivery of medical services is directed by the Second National Health Sector Strategic Plan 2008-2012 (NHSSP II) (MoMS, 2008). Its overall vision is to have "An efficient and cost-effective medical care system for a healthy nation." This strategic plan recognizes the central role of managing and developing the health workforce. It further appreciates that attention must be paid to the performance of health workers through performance appraisal systems. There are concerns however that the existing health provider performance appraisal systems in Kenya are selective, sporadic and do not necessarily attain their intended purposes (Luoma *et al*., 2010). The quality of care offered by different cadres of health care providers in Kenya is not clear. There is therefore need to provide such data. Documenting the quality of health care services offered by COs is a important since they are among the core health care providers in Kenya.

2.2 Clinical Officers in Sub Sahara Africa

Globally, medical doctors are supposed to offer clinical services. Many countries however experience a shortage of this highly trained cadre of health professionals. Training is expensive and takes long. For instance, it is estimated that the unit training cost of a medical doctor in Malawi is between US $10,000 and 18 000 (Muula and Panulo, 2007). Consequently, a cadre of mid-level health care providers called clinical officers has been introduced in Sub Sahara Africa (SSA) to provide primary health care. Equivalents of COs go by other names such as medical assistants, physician assistants,

clinical associates, assistant medical officers or primary care practitioners. COs are trained and recruited as substitutes or temporary cadres until the number of medical doctors increases. One of the problems associated with COs replacing doctors is that what started hitherto as a temporary solution has become a permanent one.

The training of COs is carried out at several academic levels. COs are trained at either diploma (Malawi, Tanzania, Liberia, Ghana, Mozambique) or degree (Ethiopia and South Africa) level. Currently in Kenya and Uganda, COs are trained at both diploma and degree levels. In Tanzania and Ethiopia, the training undertaken by COs allows one to progress to post graduate training. In other regions, however, the training does not necessarily offer one the option for academic advancement in medicine.

In some countries including Kenya, COs sit for board examination before being allowed to practice. Before being registered, some countries require COs to undertake internship (Kenya, Malawi and Mozambique). Internship is not required for one to be registered in Tanzania and Uganda. COs in countries such as Tanzania, Mozambique, Malawi and Kenya specialize in areas such as paediatrics, reproductive health, anaesthesia, ENT, ophthalmology and cataract surgery, orthopaedics, skin and chest diseases, epidemiology, community health or medical education through post-basic courses.

Clinical Officers' work either independently or with a medical doctors to provide health care services in rural and urban populations. The basic training is roughly similar. However the scope of practice is as varied as each country trains them according to local needs and situations. For example in Malawi those with a basic diploma are trained to perform routine surgical and obstetric operations such as laparatomy and caeserian

section whereas in Kenya, Tanzania and Mozambique, they must undergo additional training before undertaking such responsibility.

There is emerging literal attention on quality of services offered by COs. Chilopora *et al*. (2007) reported that postoperative outcomes of cesarean sections performed by COs in Malawi either combined with subtotal hysterectomy or with total hysterectomy or repair of uterine rupture, were comparable with those of medical doctors. The problem with this assessment is that it may be interpreted that post-operative outcomes for medical doctors were just as bad. Gul and Sambandam (2007) have expressed concern regarding the assessment of effectiveness of COs' practice. A quarter of the surveyed patients had reservations with the quality of services offered by COs in Nakuru, Kenya (Karanja, 2005). Further, COs in Moi Teaching and Referral Hospital in Eldoret had problems in conducting patient-centred tasks (Karanja, 2009). There is need to conduct further research in order to establish specific areas in the COs practice where improvements can be made.

2.3 The Practice of Clinical Officers in Kenya

It is estimated that there are about 9,000 registered COs in Kenya (COC, 2011). Approximately 2,175 COs work in the public service while others work in universities, parastatals, private sector and in charitable organizations (Non Governmental Organisations (NGOs) and faith based organizations (MOPHS, 2009). COs provide curative, preventive and promotive health care services. In addition they are the managers of rural health facilities in rural Kenya. They are the frontline managers of patients both in rural and urban centers. Most patients are managed by the COs in the rural areas of

Kenya where 80% of the population live. In rural and urban centers, specialized services such as anaesthesia, paediatric, ENT, orthopaedic and dental are mostly provided by COs.

It is estimated that there are 15.7 COs for every 100,000 people in Kenya (MoH, 2005) and currently. COs work either independently or with medical officers to provide health care services in Kenya. They are mainly primary health care providers. They play an important role in the provision of curative, promotive, preventive and rehabilitative services in both public and private health facilities. They provide clinical services mainly through diagnosis and treatment of ailments or by referring cases for further management. COs provide promotive health care through counseling and educating clients. COs usually give patients the first impression of a health facility since they are the first to clinically evaluate the health needs of patients. This study establishes the quality of the work done by COs.

Clinical Officers' are the managers of Kenya's health centers as well as MoH administrators at divisional levels. They act as assistants or substitutes to medical officers in district hospitals and rural health facilities respectively. They therefore, co-ordinate both the curative, preventive and promotive health activities at the divisional level and the health centers. They form the link between the District Medical Officer of Health (DMOH) and the community. There is limited data on the quality of COs practice in Kenya.

2.3.1 The Training of Clinical Officers in Kenya

In Kenya, COs started training and work at Kenyatta National Hospital in 1929. A broad objective of the curriculum is to train COs who are able to provide quality health care

services in all settings, offer leadership, train and engage in research (GoK, 2004). After the training, students sit for the national final qualifying examination (FQE) and then proceed for internship in accredited hospitals. The internship involves supervised rotations by medical consultants in major medical specialties namely internal medicine, surgery, obstetrics and gynecology and pediatrics. After the basic training, COs are allowed to specialize in diverse areas such as pediatrics, ear, nose and throat (ENT), lung and skin, orthopedics, medical education and anaesthesia. Despite the long period COs have been trained in Kenya, improvements in their training curriculum and an increase in opportunities for specializations, the quality of their work is yet to be assessed. This study addresses this issue.

The training of COs has recently expanded. Initially all training of COs in Kenya was offered at Kenya Medical Training College (KMTC). Recently, KMTC has not only increased the intake of students but it has opened new campuses. Several universities, private colleges and faith based organizations have recently started the training of Cos both at Diploma and degree levels. (Table 2.1). The increase in number of training institutions poses additional challenges in determining whether there are variations in the quality of services offered by their graduates.

Table 2.1: Current Institutions Training COs in Kenya

Sponsor	Examples
Kenya Medical Training College	18 Schools of Clinical Medicine across Kenya
Private Colleges	Lake Institute of Tropical Medicine in Kisumu, Outspan Medical Training College in Nyeri, Kings Medical College in Nyeri
Public Universities	Egerton University, Jomo Kenyatta University of Agriculture and Technology, Kisii University College
Private Universities	Mount Kenya University, Kenya Methodist University, Great Lakes University Kisumu, Presbyterian University of East Africa
Faith based organizations	St. Mary's Hospital in Mumias

Source: COC, 2011

The overall goal of the training curriculum for COs (GoK, 2004; KMTC, 1998, Muange *et al*., 1996) is: 'To prepare COs who are able to provide preventive, promotive, curative and rehabilitative health care services in the rural health facilities and manage health services and also participate in teaching of students, health personnel and the community.' The training objectives of COs in Kenya as per the KMTC curriculum are summarized in Table 2.2.

Table 2.2: The Objectives of the KMTC training curriculum for COs in Kenya

Broad Objective: To train clinicians who are able to provide quality health care services, offer leadership and engage in health research.

Specific Objectives:

1. Interview patients and clients.
2. Perform physical examination.
3. Make a clinical diagnosis.
4. Carry out appropriate investigations.
5. Institute appropriate patient management strategies.
6. Institute infection prevention and control measures.
7. Offer Health Education in Health facilities and communities.
8. Use Community Based Health Care (CBHC) Approach to implement primary health care (PHC).
9. Offer rehabilitative services.
10. Develop Project and Research proposals.
11. Collect, process and analyze data.
12. Use available data to guide management decisions.
13. Carry out community diagnosis.
14. Organize continuing medical education for self and others
15. Manage health services.
16. Conduct oneself in an ethical and professional manner

Source: GoK, 2004

Despite the long history and expansion of training of COs in Kenya, the practice of COs has never been evaluated. Lack of appropriate evaluation tools that can be used to establish the quality of health care services offered by COs in Kenya remains a challenge. The aim of this research was to assess the quality of health care services offered by COs in Kenya.

2.3.2 Registration, Licensing and Practice of COs in Kenya

Clinical Officers' are legally recognized as qualified medical practitioners in Kenya. COs wishing to practice in Kenya must comply with the statutory requirements for internship, registration and licensing (GoK, 1990; 2012). A person who has successfully undergone a prescribed training and internship is eligible for registration to practice. Registered COs also qualify to join the Kenya Clinical Officers Association (KCOA). Further every Clinical Officer is expected to obtain a practicing license. COs are also expected to continuously develop their knowledge, skills and professional behavior as per the laid down guidelines (GoK, 2012). Failure to obtain necessary documentation constitutes an offence.

The Clinical Officers Council (COC) is mandated by Kenya law as the regulatory body in respect to service delivery by COs (GoK, 1990). It ensures standardized training, efficient and effective registration and licensing of Clinical Officers for the provision of quality health care services in Kenya. It is also the custodian of the register of COs practicing in the country and is mandated to monitor the practice of all COs. It has disciplinary powers against unbecoming behavior from COs. The COC can also decline to renew a practicing license for failure to undertake continuous professional development (CPD).The monitoring of the practice of COs helps ensure that patients obtain quality health care services from COs. While data from the COC may provide an overview of the performance of COs, it may not avail specific information especially on the patient-clinician interaction.

They are required to among others examine and treat patients, prepare legal documents such as medical certificates, death notification, P3 forms and present medical evidence in court. The legal basis for the practice of COs is The Clinical Officers (Training, Registration and Licensing) Act Cap 260 of the laws of Kenya (GoK, 1990). Before this act there were many sub-cadres within the profession such as hospital assistants, medical assistants, registered clinical officers and certified clinical officers who had different kinds and levels of education. All these were abolished by the 1989 Act in favour of the uniform Clinical Officers cadre. The Act established the COC which oversees the practice of COs. A major function of the COC is to supervise the professional conduct and practice of COs and ensure that standards of practice are maintained and improved. Timely data on the quality of services offered by COs is required in order to establish whether this function is being accomplished. This study provides data on the quality of services offered by COs in Kenya.

There exists a published code of professional conduct for COs in Kenya (GoK, 2012). This highlights that the primary duty of COs to the public is preservation of human life. It then dwells on both professional and interpersonal aspects of the COs practice. The professional issues it addresses include licensure, certification and the type of training to be undertaken by potential COs. On the interpersonal aspects, the document reminds COs to desist from unethical behaviour and it requires them to act professionally, treat patients and their visitors with courtesy and respect, maintain patient information in confidence and give patients necessary advice and treatment. The COC has over the years played an important role in the supervision of the COs practice and training. However not much is

known on the quality of interpersonal care that COs offer in the country. This study addresses this limitation.

2.3.3 The Job Description of COs in Public Service

The need to enhance the productivity of health care providers in Kenya is recognized has been recognized (Luoma *et al*., 2010). In order to help health care providers to be optimally productive, clear performance expectations set forth in an accurate and up-to-date job description is an important prerequisite. It has been reported that health care providers in Kenya have access to a job description (Capacity Project, 2009). Even though providers claim to have seen a job description and could describe its contents, most are unable to produce a written job description when asked (Luoma *et al*., 2010).

The job description of COs in public service in Kenya includes:

a) Plan, implement, supervise and evaluate integrated Maternal Child Health and Family planning (MCH/FP) activities;

b) Organize supervise and evaluate Health Education programs in Rural Heath facilities and communities;

c) Provide basic mental, Ear Nose and Throat (ENT), eye and dental services in the institutions and communities;

d) Organize and carry out community health preventive services in order to identify community health needs and problems;

e) Participate in control of common endemic communicable diseases;

f) Make diagnosis, treat and/or refer patients and clients to bigger health institutions as necessary;

g) Manage physical facilities, finances, personnel and time;

h) Collect, analyze, compile and utilize health information;

i) Teach students, health personnel and community members;

j) Conduct operational research in health related areas;

k) Take responsibility in evaluating his/her own performance in continuing education (GOK, 2004).

The job description of COs gives insights into the nature of health care services they are expected to deliver. This job description also shows that COs are expected to perform a wide range of functions while in public service. This expansive list of targeted behaviours offers insights it to the possible areas of focus when assessing the performance of COs. The targeted behaviours are however spelt out in general terms, are fragmented and lack an accompanying implementation framework and relevant indicators. These limitations pose challenges in any attempts at assessing the performance of the practise of COs.

2.4 The Nature of Quality of Health Care Services

A widely accepted definition suggests that "quality of care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge" (IOM, 1990). This

definition is considered a useful reference in the formulation of practical approaches to quality assessment and improvement (Donaldson, 1999).

A comprehensive approach to measuring the quality of care requires attention to three different kinds of quality problems: too much care (overuse), too little care (underuse), and misuse (flaws and errors in technical and interpersonal aspects of care) (Donaldson, 1999). Examples of overuse include excessive use of X-ray and other diagnostic tests, unnecessary surgical procedures and over prescription of antibiotics and some mood altering drugs. Underuse is manifest when patients actually receive anything less than what is known to be effective care, regardless of their ability to pay. For instance it has been observed that childhood immunizations are not widely provided as is appropriate (KNBS and Inter City Fund (ICF) Macro, 2010). Misuse is apparent when the performance of health care professionals or support systems is inadequate or if practitioners lack mastery of their clinical-practice fields, do not adequately explain key aspects of care, or cannot communicate well with their patients. Misuse also occurs through failure to include patients as appropriate in decision-making or by disregarding patient preferences in the choice of care options. Cases in point include neglect of appropriate education and information for patients and insensitivity to the ethnic and cultural characteristics of patients (Barr, 2004).

In a classic formulation, Donabedian (1980) suggests that quality includes three dimensions: structure, process and outcomes. Structural measures are the presumed capacity of the practitioner or provider to deliver quality health care. Typically they include the characteristics of the resources in the health care system, including individual practitioners, groups of practitioners, organizations and systems of care, geographic

location, and accessibility of services. For health care professionals, this may include licensure, specialty board certification, and type of training. For facilities, Quality include government certification and private accreditation, physical attributes including safety, and policies and procedures. Structural standards may provide a baseline in terms of capacity but compliance does not assure that high quality care is being provided (Donaldson, 1999). On the other hand, use of high structural standards does not clearly mean that high quality care cannot be provided unless these standards are met. Continuing attention has however, been given to the importance of governance, financial structures, the health care workforce, and the capacity to provide accessible and coordinated care.

Process measures of performance often focus on the diagnosis and management of disease and may also address preventive care such as screening for disease. Process measures also referred to as performance measurement. The results of such measurement are sometimes used to create consumer "report cards" that allow comparisons among health plans. Measures of performance may include both technical and interpersonal aspects of care (Brook *et al.,* 2000; Butler *et al*., 1996). Technical aspects of care include the timeliness and accuracy of diagnosis, the appropriateness of therapy, complications, and mishaps during treatment, and coordination of care across delivery settings, episodes of care, and professional disciplines. Interpersonal aspects include topics such as providing patients with information and answering their questions and encouraging patients to share in decision-making if at all possible (Taylor, 1999). Some frequently cited problems in the process dimension of quality include unsanitary environments, unnecessary use of restraints and failure to maintain the dignity and respect of patients

(Donaldson, 1999). Process measures are therefore good only if they can be linked to outcomes that are important to patients.

Outcome measurement includes the traditional measures of survival (expressed as risk-adjusted mortality), unintended effects of treatment (such as an infection), and the relief of symptoms (Brook *et al.*, 2000; Donaldson, 1999). These measures may be specific to a given health problem or may focus on more comprehensive assessments of the effect of an intervention. Outcome measures also include patient reports about their health using either a global scale (such as an individual's health is "excellent, very good, good, fair or poor") or detailed measures of function. Functional outcomes usually centre on limitations in performing daily activities such as going to work, as well as physical, social and mental functioning (O'Connor, 2004). Outcome measures have been broadened to include patient satisfaction with various aspects of their experience in comparison to their expectations (Brook *et al*., 2000). This usually involves asking patients to judge the quality of care, using well developed tools. Evidence from literature in both sociology and psychology demonstrates that patient judgment can be measured reliably and accurately (Rubin *et al*., 1993). Such judgments can be used to compare how patients evaluate different practice styles, administrative arrangements, treatment modalities and the quality of care in different settings or providers.

There are reports of quality problems throughout the health care system-whether from overuse, underuse, or misuse (Donaldson, 1999). Millions of people worldwide do not receive proven effective interventions that treat illness, save lives and prevent disability. Perhaps an equal number suffer needlessly because they are exposed to the harms of unneeded health care services. Large numbers are injured because of preventable harm

from medical treatment. These problems exist in both public and private health systems and in all parts of the world. Need therefore exists to assess quality of health care services. The object of quality measurement should not be to fix blame on organizations or individuals but to find opportunities to improve health and prevent harm (Berwick, 1996).

2.4.1 Patients Satisfaction

Patients' satisfaction is a concept that is closely related to quality. The term has been defined from at least two perspectives. One, patients' satisfaction is seen as a measure of how health care products and services supplied by health systems meet or surpass the expectations of patients (Parasuraman *et al*., 1985). Second, the patient satisfaction theory (Tucker III and Adams, 2001) suggests that patient satisfaction with health care, as an attitude, is based on the summation of the very subjective assessments of the dimensions of the care experience. These dimensions can include interactions with providers, the ease of access, the burden of costs, and environmental issues such as cleanliness of the health care facility (Taylor, 1999). Regardless of the definition, patients' satisfaction is seen as a key indicator of quality within health systems.

Vinagre and Venes (2008) offer a distinction between the terms quality and satisfaction. They suggest that quality is a judgment or evaluation that concerns performance pattern, which involves several service dimensions specific to the service delivered. Quality is believed to be determined more by external cues such as price and reputation. Satisfaction, however, is a global consumer response in which consumers reflect on their pleasure level. Satisfaction is based on service delivery predictions or norms that depend

on past experiences, driven by conceptual cues such as equity or regret. Satisfaction is understood as being transitory and reflects a specific service experience. This distinction has however faced credible challenge.

Tucker III and Adams (2001) demonstrate that several of the variables in the concepts satisfaction and quality are cross-referenced by their operational definitions (Table 2.3). These cross-referenced variables challenge the notion that the two concepts are distinct and separate. An integrative model of access, communication, outcomes, caring, empathy, reliability and responsiveness therefore suffices to explain the concepts of quality and satisfaction. However, empirical evidence has not always supported these dimensions (Vinagre and Neves, 2008). When testing the integrative model of health quality and satisfaction, Tucker III and Adams (2001) found that the performance of a physician and issues related to access of a health facility predict 74% of variation in the delivery of quality health care services. Studies evaluating the quality of services offered by health providers in other parts of the world and especially Kenya are not readily available.

Table 2.3: Cross-referenced Quality and Satisfaction Models Showing Duplication

Quality Models	Overall Satisfaction Models
Caring Personal interest in Outcome Attention from Provider Reassurance/Support given **Empathy** Convenient Location Convenient Hours Access to care when needed **Reliability** Thoroughness of examination Ability to diagnose problem Skills of provider Thoroughness of treatment **Responsiveness** Wait time in office Time between appointment and visit	**Access** Convenient location Convenient hours Access to care when needed Wait time in office Time between appointment and visit **Communication** Explanation of procedures Explanations of tests Attention provider gives you Reassurance/Support given **Outcomes** Satisfaction

Source: Tucker III and Adams (2001)

The above reviewed literature demonstrates that there is no universally accepted definition of the term quality of health care. The literature indicates that the concept of quality may vary from one individual to another but it is multidimensional. The literature also demonstrates that it is possible to measure quality from the perspective of the patient. The current study examined satisfaction levels of patients who are seen by COs in Kenya from a multidimensional perspective.

2.4.1.1 Theories of Patients' Satisfaction

Two approaches namely marketing and patient satisfaction have dominated the discourse on customer satisfaction as a measure of quality of health care. In the marketing perspective the loyalty of a patient, as expressed by his or her ongoing preference to a

certain health care organization, is related to a successful entity that sustains its clientele (Cole, 2008). This approach treats a patient as a client and offers him an augmented product. The product includes the core medical or health service and add-ons such as assurance (effectiveness of care), superior communication (interaction with health professionals) and responsiveness (punctuality) of the health organization.

Patients however differ in three important ways from customers (Priporas *et al*., 2008). First, patients use different criteria in assessing a health service depending on whether it is a routine visit or an emergency. Judgments are relative to severity of illness. Second patients' judgments are founded on among others, facilities, politeness and delays in service delivery. Moreover, patients consider health outcomes as a quality factor which in many cases is ambiguous. In contrast customers are more likely to work on the assessment of a product's technical quality based on specification, reliability, post-sales services and punctuality. Third, a patient's expectations and perceptions are not simply related since a medical or health service is not technically comprehensive. Patients usually do not have a clear idea of their expectations in a clinical setting, a desire that is ceded to the health provider (Taylor, 1999). The perspective of patient satisfaction surmounts these challenges.

Numerous theories and constructs have been advanced to help explain patients' satisfaction and factors that may influence the level of satisfaction a patient may have with a medical encounter. Despite the extensive research into patient satisfaction, no single theory or other explanation is universally accepted (Merkouris *et al*., 1999). Further, existing theories are advanced from myriad academic persuasions and trying to fit them in any logical order is not easy. Broadly, there are two approaches of examining

patients' satisfaction. One theory suggests that patients have the ability to understand their health care experience and thus judge its quality (Parasuraman *et al*., 1985). The second theory holds that patients' satisfaction as an attitude is the summation of the very subjective assessments of the dimensions of the care experience (Tucker III, 2002; Linder-Pelz, 1982). This theory views patients' satisfaction as a patterned way of thinking and behavior.

The first approach examines patients' satisfaction as perceptual. Theories that suggest that patients understand the quality of their health care experience can be organized into two groups: those that focus on individuals' expectations and actual experiences and those whose focus is the comparative process between individuals (Cole, 2008). The underlying themes in theories that focus on individuals' expectations and actual experiences are the patient's desires and the actual occurrences of the encounter. These theories further assume that differences in either variable affect the resulting level of satisfaction. Two of the widely discussed models in this approach are the fulfillment and discrepancy theories (Jaipaul and Rosenthal, 2003).

The fulfillment theory suggests that an individual's perception concerning the discrepancy between what is wanted and what is eventually obtained is responsible for the level of satisfaction that is ultimately achieved. Discrepancy theory differs from fulfillment theory in that, while considering the desires and what is obtained, the comparison takes into consideration the quantity of the goods or services that are desired by the individual. In each situation, key determining factors relate to an individual's perceptions of his or her unique situation. (Jaipaul and Rosenthal, 2003).

The equity and social comparison theories focus mainly on the comparative process between individual. The equity theory argues that individuals evaluate their unique situation in comparison to the situation of others. It is further defined as having individual perception as a component, such that individuals make their satisfaction evaluations based on the perceived degree of equity between themselves and others. In contrast, the individual's need to evaluate one's own situation serves as the basis of social comparison theory. Individuals undertake comparisons to others in similar situations to evaluate for discrepancies involving something of great importance. The goal is to reduce the degree of a recognized discrepancy rather than to achieve equity, although discrepancies are addressed (Linder-Pelz, 1982).

The gap model (Parasuraman *et al*., 1985) is commonly used to assess the quality of the patient experience. In this model patients assess their expectation of what quality service is, and their perception of the service they receive. It is fundamentally a model of service quality analysis and evaluation. In this model, a service is considered to be of quality whenever perceptions exceed user's expectations. This model assumes that consumers create expectations prior to their service experience against which performance is evaluated. Perception can disconfirm expectation (either for "worse" or "better") or confirm it, which is neutral comparison. Vinagre and Neves (2008) suggest that expectations cause assimilation effect while discrepancy causes a contrast effect. Assimilation effect corresponds to a narrowing of the gap (leading to an assimilation of expectations with perceptions) while the contrast effect is the opposite. When the consumer acknowledges a gap, he or she attempts to reduce this space. However if disconfirmation is too strong then the consumer may strengthen his or her negative

perception thus widening the gap. In this latter case, the contrast effect occurs. According to the assimilation theory, individuals tend to respond according to their expectations because they are reluctant to admit wide discrepancies. Consequently, if the discrepancy between the consumer's expectations and perception is small then perceptual judgment will reduce this difference. However, if the discrepancy is too large then a contrasting perception is obtained. The role of expectations as an assimilation agent provides, therefore, the mechanism by which expectations may influence satisfaction directly (Vinagre and Venes, 2008).

The second approach in examining patients' satisfaction recognizes that the concept is attitudinal (Tucker III, 2002; Linder-Pelz, 1982). This approach holds that the evaluative process by an individual is affective. This approach is credited with the promotion of the individualized nature of patient satisfaction (Vinagre and Venes, 2008). It is however criticized for failure to account adequately for the influences that may be driving the individual perceptions (Cole, 2008). These theories address many of the social psychological determinants of patient satisfaction, but do not necessarily address other aspects, such as the socio-demographic variables that permeate past and present research.

2.4.1.2 Measures of Patients Satisfaction

Much effort has been taken to create reliable and valid ways of assessing the quality of health care for a wide range of diagnostic and therapeutic services and for a broad array of health and medical problems. Examples of these measures include risk-adjusted mortality, clinical practice guidelines, measurements of errors that occur in organizations, automated ways of reminding physicians about appropriate use of antibiotics and patient-reported measures of quality (Brook *et al.*, 2000; Donaldson, 1999). It is now

increasingly possible to measure systematically a variety of outcomes, including patient-centered measures of health status, ratings, and reports about their care. Both single-item instrument and multi-item instruments are used. Single-item instruments are usually bedeviled by the threat of reliability (Cole, 2008). The use of multi-item instruments provides the ability to evaluate specific points of interest as well as a broad spectrum of the various attributes cited as affecting patient satisfaction (Tucker III and Adams, 2001). The use of a multiple-item instrument does not however, preclude the use of a single-item measure to assess the respondent's satisfaction in total or to evaluate an intervention that is being tested.

The commonly known measures can be categorized according to their orientation (Table 2.4). The commonly used scales are service quality (SERVQUAL), the Consumer Assessment of Health Plans Study (CAHPS) administered as part of the Health Plan Employer Data and Information Set (HEDIS) (Agency for Health Care Research and Quality, 2011) and the 9-Item Visit Satisfaction Questionnaire (VSQ-9), developed for the Medical Outcomes Study (MOS) (American Medical Group Association (AMGA), 2009). SERVQUAL is based on the gap model and measures quality as the difference between customer perception and expectation (Parasuraman *et al*., 1985). SERVQUAL has been criticized for using a disconfirmation paradigm rather than an attitudinal paradigm.

Table 2.4: Common Measures of Patients' Satisfaction

Orientation	Examples
Generic Use	The Patient Satisfaction Questionnaires (PSQ) and its shorter versions PSQ-III and PSQ-18
	External Patient Satisfaction Survey (EPSS)
	Service Quality (SERVQUAL)
Primary Care	The General Practice Assessment Survey
	The Visit Specific Satisfaction Survey (VSQ-9)
	Consumer Assessment of Health Plans Study (CAHPS)
	The European Task force for Patient Evaluation of General Practice (EUROPEP)
	Press Ganey
Restricted	The Medical Interview Satisfaction Survey (MISS-29)
Use	Consultation Satisfaction Questionnaire (CSQ)

Adapted from Priporas *et al*., 2008

While CAHPS is often used to measure the quality of care received from a health plan, the VSQ-9 provides a measurement specifically of a patient's perception of the quality of a single office visit with a physician or other provider. The reliability (Ware and Hays, 1988) and relative ease of administration of the VSQ-9 has led to it being adopted by a number of medical groups and health service researchers to measure patient satisfaction with care (Barr, 2004). AMGA, a national association of large medical groups that provides care to more than 50 million patients in the USA, has adapted the VSQ-9 as its recommended patient satisfaction instrument (Barr *et al*., 2000). The full 9-item survey is often used to compare patient satisfaction rates among clinicians, even in large medical groups in which factors such as telephone access and geographic convenience may be beyond the control of the clinician. Consequently, the VSQ-9 may require adaptation to

the organization under evaluation, which implies subsequent refinement of quality dimensions relevant to each service.

Most of the measures of health care quality are developed in the western world and may not necessarily be appropriate in the developing world which has different health systems. A large gap remains in understanding what quality of care data the consumers would find useful and a major challenge remains in educating patients about these issues and presenting them with information in ways that will help them make decisions. This study offers data on the quality of services offered by COs in Kenya.

2.4.1.3 The Socio-demographic Correlates of Patients' Satisfaction

Empirical literature on patient satisfaction has largely examined the effects of socio-demographic variables such as level of education, age, gender, marital status, family size, health status and ethnicity on patient satisfaction (Cole, 2008; Barr, 2004). The relationship between level of education and patient satisfaction is ambiguous. For instance, some studies report that the level of education is positively associated with patient satisfaction (Mattson *et al*., 2005; Tucker III, 2002). In contrast, other research indicates that individuals with lower educational levels are likely to have increased levels of patient satisfaction (Barr, 2004, Barr *et al.,* 2000). Some literature has also demonstrated that there is no relationship between educational attainment and patient satisfaction (Rubin *et al*., 1993). The education variable is used both as a control and as an independent variable in previous research. Its influence is multifactorial largely due to the various influences that are manifest in other aspects of the patient satisfaction process.

Previous literature also shows that relationship between age and patient satisfaction is ambiguous. Some literature demonstrates that older patients tend to be more satisfied with clinicians (Barr, 2004; Barr *et al*., 2000; Tucker III, 2002). Rahmqvist (2001) reported a non linear relationship between age and patient satisfaction levels. In contrast, Rubin *et al*. (1993) concluded that age did not affect the level of patient satisfaction. Therefore, no specific defining relationship between age and patient satisfaction permeates the literature.

Literature also reports contradictory effects of sex on patients' satisfaction. Otani *et al*. (2005) report that female patients are more likely to report higher levels of satisfaction than male patients. Tucker III (2002) contends that sex of the patients has no impact on the reported levels of satisfaction. Thus literature does not offer any definitive effects of sex on patient satisfaction.

The overall health condition of individual patients appears to have varied impacts on the level of patient satisfaction. One theory posts a direct relationship between patients' health status and satisfaction, with sicker patients tending to be more satisfied (Jaipaul and Rosenthal, 2003; Barr, 2004; Tucker III, 2002; Barr *et al*., 2000). Rubin *et al*., (1993) however, did not find any differences in reporting on patient satisfaction by health status. Consequently literature fails to provide definite directional information as to the net effect resulting from a specified health status.

Previous studies have examined level of satisfaction at rural locations (Olden *et al*., 2004; Cole, 2008). Other studies indicate that patients residing in rural areas report higher levels of satisfaction with care from health care providers when compared to their

counterparts in urban areas (Wallace *et al*., 2008; Harutyunyan *et al*., 2010). Individuals residing in rural areas tend to be more stoical and forgiving. Further, rural areas are relatively neglected when compared to urban areas and thus rural based patients may have limited formal health care options. It is therefore expected that patients in rural areas rate their experience with clinicians more favourably.

Patients' surveys are an inexpensive way of learning what clients think about services offered by clinicians. They offer a chance to gauge clients' knowledge of and perception about the services they receive and have the added advantage of allowing the assessment of a wide range of the dimensions of performance. Survey data however has the potential to lack detail or depth of the topic under investigation (Kelly *et al*., 2003). Often triangulation of survey data with other data sources is advised (Mugenda and Mugenda, 2003).

Generally the reviewed literature tends to indicate that the influence exerted by personal attributes on an individual's satisfaction is minimal. In this direction, Barr *et al*., (2000) for instance, lament that patients' personal attributes explain a paltry 9 percent of the variance in patient satisfaction. Further, the findings on the effects of socio-demographic variables on patient satisfaction are controversial. Differences in the findings largely occur due to the use of different study settings, methods, populations and measurement of variables. Patient satisfaction with quality of health care has been examined in a multitude of settings such as inpatient facilities, outpatient clinics, family physician offices, homes and emergency departments (Otani *et al*. 2005). Further, patient satisfaction surveys generally inquire about satisfaction over an extended time period. Studies reporting satisfaction with a single visit have not been the focus of many studies

(Cole, 2008). Studies have also been undertaken to evaluate the satisfaction of patients with a specified demographic characteristic, such as age or with a particular medical diagnosis, such as cancer. It is therefore quite difficult to identify unambiguously from the literature the key socio-demographic factors that are associated with patient satisfaction. Although previous studies used diverse study settings and patient populations, no studies were identified that examined the satisfaction levels of individuals from Kenya and more so those who are treated by COs. This study addressed this gap.

2.4.2 The Performance of the Health Care Providers in Kenya

There is much interest in the assessment of the performance of health care providers globally (Campbell, 2010, Carr, 2004, Epsein and Hundert, 2002). This is especially important in developing countries where there are shortages of health care providers (Sujata *et al*., 2001). Helping existing health care providers to be as productive as possible and to perform up to standard is critical especially in situations with staff shortages. While rigorous studies of productivity in Kenya are limited, existing data from other parts of SSA suggest that providers spend less time in patient care (Health Systems 20/20, 2010). Further, there are indications that absenteeism may be high among health care providers (Luoma *et al.*, 2010; Muthama *et al*., 2008). A nationwide study of Maternal Child Health (MCH) skills concluded that health providers performance of basic, life-saving skills was quite low (Mutungi *et al.* 2008). These studies point on the need to enhance the performance of health care providers in Kenya. Increasing the productivity of existing workers is almost always more cost-effective than hiring more workers, and in some cases hiring more providers may be impossible. Reliable data on

the performance of existing health care providers including COs is a prerequisite to improving quality of healthcare.

In Kenya the assessments of the performance of health providers is limited (Luoma *et al*., 2010). Monitoring and evaluation in the Kenya health system is essentially based on reports from the routine Health Management Information Systems (HMIS) and supervisory (field) visits and periodic reviews. The information is not performance based or output oriented (MoH, 2005). Further, accreditation and audits appear to be the only type of quality assessments that are conducted to health personnel in Kenya (Luoma *et al*., 2010). There is no other nationwide system for monitoring the quality of health care provided. According to the GoK, one of the strategies of achieving the objectives of Monitoring and Evaluation by government is through stimulating the operational research which provides answers to service and management related questions by collaborating with research institutions in areas that relate to relevant policy related questions to improve service delivery and management.

A case study conducted in Nakuru (Karanja, 2005) established that a majority of the surveyed COs do not provide preventive and promotive health care services, are not involved in community health activities and do not carry out research as is expected of them by their job description and training. Further, most of COs experienced some difficulties in management functions especially in finance, personnel and stores and supplies management. This research recommended that a large scale study be conducted to assess whether COs offer quality health care services as is expected of them. This study attempted to address this concern.

2.4.2.1 Methods of Assessing the Performance of Clinicians

It is widely recognized that the performance of the practice of clinicians can be measured and improved (Kak *et al*., 2001; Rethans *et al.,* 2002; Carr, 2004; Hensen *et al*., 2008). The assessments of the performance of clinicians can be conducted from a variety of information sources (Sujata *et al*., 2001). Health statistics may appear an attractive option, it has the advantage of providing an overview of the performance of a health system but may not avail qualitative information such as the interpersonal aspects inherent in health systems. Assessments by supervisors, peers, independent external raters or self are considered more appropriate in the assessment of individual provider performance (Kak *et al*., 2001).

Supervisor assessment is the most traditional method, but is generally costly and sometimes impractical especially in developing countries where supervisors often lack necessary resources (such as access to official vehicles, travel allowances, or service delivery guidelines) and their clinical and administrative responsibilities often take precedence over the supervision role. For example in Kenya, providers working in urban based health facilities receive higher supervisory visits relative to their rural based counterparts (Luoma *et al*., 2010). Even though peer review is an interesting alternative that is receiving attention, it is labor intensive and has been shown to create problems between staff members (Sujata *et al*., 2001). Independent raters are widely used for research, but they tend to be costly and at times unavailable (Campbell, 2010). Self-assessment is a low-cost approach to monitoring the quality of health care providers, and is therefore potentially important in developing countries (Sujata *et al*, 2001).

The assessment of the performance of the practice of clinicians can be conducted through simulations, observations, chart reviews, patient surveys or self assessments (Campbell, 2010). Different assessment methods have different strengths and weaknesses. Simulation generally refers to a person, device or set of conditions which attempts to present and evaluate problems authentically. Even though simulations help in the assessment of a wide range of skills, they are quite involving to construct. Further simulations limit the circumstances and the needs of clinicians and require both observation and evaluation. Observation offers a special challenge. The fear about being evaluated can cause poorer performance, and awareness of being evaluated can contribute to greater care and attention to a patient. Chart reviews may be seen as offering objective results but they often omit important information on performance (Kak *et al.,* 2001). Together these three methods may not be appropriate in situations where trained assessors are not readily available. Self assessment is considered a viable alternative in such cases (Sujata *et al.,* 2001).

Self assessment is used to describe an ability to reflect and make an overall judgement on performance (Campbell, 2010). It is conceptually viewed as an entry step in the CPD cycle. Performance improvement modules are important tools in self assessments. Literature identifies learning from experience, functioning more effectively, strengthening commitment to competent performance, and fostering self-agency and authority as important benefits of self assessment.

There are reservations with the use of self-assessment as literature shows that it has low to moderate validity when compared to external measures of capability and performance (Davies *et al.,* 2006). This claim has been questioned on the basis that self and external

ratings may not necessarily stem from the same frames of reference (Sujata *et al*., 2001). It is further suggested that self ratings accurately reflect the rank ordering of the performance dimensions within individuals and the rank ordering of overall performance across individuals (Cheung, 1999). There is also an increasing need for self-assessment in health care settings as health systems change (Campbell, 2010). This is especially relevant in developing countries where significant numbers of health care workers particularly at Rural Health Centres function without supervision. Because regular supervision is not possible in these dispersed systems, a mechanism by which providers could assess themselves between supervisory visits could prove an effective means of improving the quality of care.

There are numerous dimensions that can be considered when assessing the performance of clinicians. Literature suggests that an appropriate tool should be able to elicit responses on preventive care, screening behaviours, prescribing and general management of a wide array of problems including some areas beyond the medical skills such as referral practice, communication skills, managing health resources and public health are potential areas for consideration (Epstein and Hundert, 2002; Rethans *et al*., 2002; Carr, 2004; Campbell, 2010). Such a tool should not only help attain the purposes of the assessment but should also be sensitive to the cultural and other local conditions of the settings in which it is applied (Kak *et al*., 2001). Where appropriate tools are unavailable, the help of experts in the operationalization of concepts and ideas is considered appropriate (Sitzia and Wood, 1997; Gordis, 2004; Kothari, 2008).

CHAPTER THREE

3.0 MATERIALS AND METHODS

3.1 The Study Area

This study was conducted in the Republic of Kenya. The Republic of Kenya is approximately 582,646 square kilometers and lies across the equator on the East coast of Africa between latitudes 34°E-42°E and longitudes 5°S-5°N. In addition, Kenya has a 536 kilometers coastline along the Indian Ocean. Kenya's territorial sea extends 12 nautical miles. The exclusive economic (fishing) zone is 200 nautical miles, and the continental shelf extends to a 200-meter depth or to the depth of exploitation. Being on the equator, the country has no marked seasonal changes. For most parts there are two rainy seasons that is the long rains-March to May and the short rains-November to December.

Kenya is currently divided into 47 counties. However, during the data collection phase of this study the country was made up of eight (8) administrative provinces namely; Coast, Central, Rift Valley, Nyanza, Western, North Eastern, Eastern and Nairobi area which is also the capital city. The provinces were further subdivided into smaller administrative units such as Districts, Divisions, Locations and Sub-locations all headed by administrative officers (GoK, 2007). Different types of public health facilities are located in these administrative divisions (MOPHS, 2009).

The setting of this study was the consultation rooms of COs in selected public health facilities across the country. By the year 2005, there were about 4,500 registered COs in Kenya. Further, there were 2,158 health facilities, which included 1,536 dispensaries, 440

health centres, 132 district hospitals and 7 provincial hospitals in the country (Muchiri and James, 2006). The distribution of COs in public health facilities as of the year 2009 is shown in Table 3.1. Also included in the table are COs working in the two national referral hospitals in Kenya namely Kenyatta National Hospital and Moi Referral Hospital. Both institutions are relatively well equipped when compared to other health facilities in Kenya. Workload is also a complex issue as both institutions offer specialist clinical work and teaching. COs in the two institutions were therefore excluded from being part of the study.

Table 3.1: The Distribution of COs in Health Facilities in Kenya

Level	Type of facility	Number of COs (%)
L6	Referral Hospitals	185 (8.5)
L5	Provincial hospitals	232 (10.7)
L4	District/sub-district hospitals	1353 (62.4)
L3	Health centres	300 (13.8)
L2	Dispensaries	105 (4.5)
L1	Community Based	0 (0)
	Total	2175 (100)

Source MOPHS, 2009

3.2 Study Design

This was a descriptive survey that aimed at assessing the quality of health care services that are offered by COs in Kenya. The study examined quality of care from the perspectives of both patients and COs. The survey of patients was aimed at establishing patients' satisfaction with the services they receive from COs. It was conducted immediately after the sampled patients left COs consulting rooms in selected public

health facilities across the country. The survey of the COs was conducted in order to gain insights into their performance by using the method of self assessment.

3.3 Study Population

There were two populations in this study. The first was patients who consult COs in public health facilities in Kenya. Data on the number of patients who consult COs in the country is not available and hence it is difficult to have an estimate of their number. The first target population of this study was therefore taken to be all patients who consult COs in Kenya. The accessible population included all patients who made a consultation visit to COs in the sampled districts in the country during the study period.

The second target population of this study included COs working in public health facilities in the country. The second accessible population was therefore all COs working in public health facilities in the sampled districts.

3.3.1 Inclusion Criteria

For, inclusion, the sampled patients were supposed to be making a consulting visit to a selected public health facility in Kenya during the study period. For the purposes of this study, a consulting visit was defined as any visit to a Clinical Officer for any professional service. A patient had to be:

- Above 18 years;
- Give informed consent;
- Seen by a Clinical Officer;

- Mentally stable;
- Legal competent.

The sampled COs were supposed to be:-

- Registered by COC;
- Working in the Public Service in Kenya;
- Engaged primarily in patient care;
- Consent to the study.

3.3.2 Exclusion Criteria

Patients were excluded if:-

- Too sick to respond to questions;
- Under 18 years;
- Seen by other health workers;
- Did not consent to the study;
- Mentally sick;
- Legally incompetent.

Clinical Officers were excluded from the study if they were:-

- Working in the private sector;
- Not primarily engaged in patient care;

- Not registered by COC
- Absent from duty for any reason during the study period;
- Operating outside Kenya.

3.4 Sampling Techniques

All the eight provinces that existed in Kenya before the promulgation of the new constitution in 2010 were included. The 47 large districts (now counties) were the point of reference. A sample of 18 districts was selected from all the 8 provinces using simpla random sampling method (Appendix 1).

A human resource mapping strategy was then conducted. This involved visits to the eight provincial headquarters where the provincial directors of medical services and the provincial directors of public health and sanitation assisted in identifying COs in the selected districts. A list of practicing COs in the sampled districts was then prepared. This list was cross checked to ensure that only registered COs practicing in the public service in the selected districts were considered. This revised list of registered COs formed the sampling frame. Simple random sampling was then used to select a sample of COs.

Patients making a consulting visit to the sampled COs were randomly selected. In order to avoid possible bias in patient selection, the research assistants were instructed to look away from patients leaving the COs office for a period of five minutes, and then to look back and approach the first patient in their vision exiting from the COs consultation room.

3.4.1 Sample Size Determination

The variable quality of health care services offered by COs played a key role in this study. Its analysis required comparison between "excellent" and "not excellent" quality of services. Consequently, the Fishers's sample size formula for categorical data (Mugenda and Mugenda, 2003) was deemed appropriate.

$n = z^2pq/d^2$

Where, n = the sample size

Z = the standard normal deviate (1.96)

p = the proportion of the target population estimated to be competent. This is taken as 0.75, the proportion of patients reporting overall satisfaction with services offered by COs as reported in Karanja (2005).

q = 1 – p = 1 - 0.75 = 0.25

d = margin of error, taken to be 2 % in this study

Thus, $n = (1.96)^2(0.75)\ (0.25)/\ 0.02^2 = 1{,}801$ patients

Identifying patients who visit COs and not other health care providers required selecting the COs as well. Using the above formula and assuming p = 0.5 (since not much is known about the attributes of COs in Kenya) and accepting a margin of error of (d = 0.05) the minimum number of COs was obtained as:

$n = 1.96^2(0.5)\ (0.5)/\ (0.05)^2 = 384$

Since the study population is less than 10,000, a correction for finite population was obtained by applying the formula (Bartlet *et al.*, 2001):

$$n_f = \frac{n}{1+n/N} = 384 / (1 + 384/2150) = 326$$

where, n_f is the desired population size and N is the estimated population size. Consequently, the minimum sample size for this study was 326.

Previous studies indicates that at least six to ten patients are required in order to achieve a generalisability of 0.70 which is the level required for formative purposes (Tucker III and Adams, 2001). Taking the lower limit of six patients per clinical officer, 1956 patients was then required minimum sample size for this purpose.

3.5 Procedure of the Development of the Quality Assessment Tool

Standard procedures for developing measurement tools (Sitzia and Wood, 1997; Mugenda and Mugenda, 2004; Kothari, 2008) were adopted. The first step involved a systematic review of literature. Manual and electronic searches of databases such as MEDLINE and EMBASE were conducted and literature on quality of health care offered by providers retrieved. This literature was reviewed and a summary of the major concepts pertaining to quality of health care was written. This summary included the definitions of quality of care, theoretical frameworks of quality, methods of assessing quality and available measurement tools.

The second step involved the specification of the dimensions of quality of care. Since literature on quality of care offered by COs was limited, a panel of experts (Gordis, 2004) was constituted and requested to discuss and identify the major issues in the assessment of quality of health care by COs. This panel included nine experts in clinical training and practice and social research. A written summary of the quality of health care was

provided to each panelist two weeks before they were invited in a workshop. In the workshop each panelist was requested to give a summary of his or her views. Brief phrases of the ideas that best captured the panelist views were recorded. The panelist then reviewed these ideas and arranged them into clusters. The panel was allowed to add, remove or reclassify the ideas. The entire workshop was video-recorded. A transcription of the experts' discussion was done and content analyzed. This exercise helped separate issues that can be generated by patients from those that can be obtained directly from the COs. The direct interaction of the patients with COs, access to care, observation of privacy, time taken with COs and overall satisfaction were considered as major dimensions of patients' satisfaction. Five dimensions of COs performance namely clinical/procedural skills, critical appraisal skills, interpersonal relations, basic skills in running health institutions and community mobilization were also obtained.

The third step involved development of indicators for each dimension of quality of care. The panel of experts was reconstituted and asked to help develop the operational definitions of each dimension of quality of care. The panelists were initially briefed on the dimensions of quality that emerged in the first meeting. They were also requested to deliberate on the appropriateness of adapting items from existing and validated quality assessment scales such as the VSQ-9 (Rubin *et al*., 1993; Cole, 2008; Ware and Hays, 1988). Three indicators for each element of quality of care were generated. Items found in the literature and those from the panel discussion were collated.

Finally a pilot study was conducted on 12 COs and 75 out-patients from different public health facilities in Nakuru County. Two preliminary questionnaires, one for the COs and the other for patients were used. The pilot study was designed to narrow down on the

select items and check on the comprehensibility and acceptability of items and response patterns. The items in the questionnaires were adjusted appropriately based on the results of the pilot study. Draft copies of the piloted questionnaires were circulated to the panelists and comments obtained from them individually. These comments were used to construct two questionnaires, one for patients (Appendix 2) and the other for COs (Appendix 3) which were used in this study.

3.6 Measurement of Variables

A 9-item quality assessment tool PSAT was used to measures patients' satisfaction with their visit to COs. This tool measured patients' satisfaction with access to care (questions 1 to 4), direct interaction with COs (questions 5 to 8), and with the visit overall (question 9) on a scale ranging from 1 (poor) to 5 (excellent). The evaluative responses in this scale were deemed attractive since literature demonstrates that they are more related to important outcomes such as intention to follow a health provider's advice or refer another patient, than are patients' satisfaction ratings (Barr *et al.*, 2000; Taylor, 1999; Rubin *et al.*, 1993). Patient demographic data was also gathered. These variables included the age, sex, marital status, educational attainment and socio-economic class. Socio-economic status was measured from the expenditure perspective. A global question on the patient's status of health was also included. In this question, the patients were required to indicate their perceived status of health on a scale ranging from 1 (poor) to 5 (excellent). Another global question on patients' satisfaction with their outpatients visit to health care providers was also included. This was rated on a five likert scale ranging from strongly disagree to strongly agree. The PSAT items and patient variables were combined into a Patient's Satisfaction Questionnaire (Appendix 2).

The second questionnaire was administered to COs. The main questions involved asking COs to rate their frequency of undertaking community health activities, health education, following treatment guidelines, mentoring junior staff, supervision of students, surfing the internet, patient history taking and physical examinations. These were rated on a four likert scale ranging from 'never' to 'always'. The COs were also asked to judge their proficiency in managerial and financial skills on a four likert scale ranging from 'poor' to 'excellent'. Such evaluative responses were deemed attractive since literature on competence highlights the key role of self assessment, self accreditation and reflection. These ten items were used to form a self assessment performance index for COs. Other data that was collected from the COs included their age, sex, marital status, educational attainment, work experience, other courses undertaken since qualifying to practice, membership into voluntary organizations, attendance to seminars and workshops, number of publications, patient load, administrative positions held and usage of computers. These questions were consolidated to form a COs Questionnaire (Appendix 3).

The validity of these research tools was ensured through extracting variables from existing literature and using a panel of experts in social research and clinical practice and training to operationalize pertinent issues in the assessment of quality of health care. The research tools were then pre-tested with a sample of COs and their patients in Nakuru.

The reliability of the research tools was tested using the internal consistency technique (Mugenda and Mugenda, 2003). In this approach, scores obtained using evaluative responses (poor to excellent) were correlated with items on patients' responses.

3.6 Data Collection Procedures

The Patient's Satisfaction Questionnaire was administered by trained research assistants who waited at the exit of a COs office. Questions pertaining to events that took place during the visit were asked as soon as possible after the visit from the COs consultation room. The COs Questionnaire was self-administered.

Data was collected from September 2009 to May 2010. It involved 18 trained research assistants. For eligibility, the research assistants had to be 18 years and above with at least form four level of education. Fluency in Kiswahili language and at least one of the dominant local languages in the selected districts was also a requirement. The research assistants were trained on the topic under study, contents of the research tools for this study, methods of conducting surveys, questioning techniques and on interpersonal skills. A manual was developed to guide the training of the research assistants. Care was taken to ensure that the training of the research assistants was uniform in order to enhance the credibility of data.

Data was collected from provincial hospitals, district and sub-district hospitals, health centres and dispensaries in the sampled districts. The research assistants initially approached the head of health institutions where the sampled COs worked and then obtained permission to conduct the survey after making the necessary introductions. They then approached the target COs, introduced themselves and purpose of study and provided a copy of the study questionnaire to the COs for self-administration after obtaining requisite consent.

The research assistants identified potential study subjects as patients were leaving COs consultation room and approached them. After exchanging greetings, the research assistants then introduced themselves and the purpose of the study. Informed consent was then sought from identified patients before they were recruited in the study. The research assistants then enquired from the patient their purpose for visiting the clinical officer. If the response was a consultation visit, the patient satisfaction survey was administered to the patients by asking the survey questions and noting down their responses. This process was repeated until six patients were recruited for each surveyed clinical officer.

3.7 Data Analysis and Interpretation

Descriptive statistics were used to summarize and present data. Comparisons of sample characteristics were done using t-tests (for numerical data) and chi square (for categorical data). The global question on the patients' status of health is reported using the top box score method (Tucker III and Adams, 2001). This involved dichotomizing responses as "excellent" and "not excellent". This is in line with the need to have the best possible health rather than minimal standards.

Correlation analysis was used to examine the relationships among the different aspects of quality of health care. Reliability analysis was then conducted to gauge how well the series of questions on quality could be combined to create a single measurement using the Cronbach's coefficient alpha (α). The closer the statistic is to 1.0, the more reliable the combined measure is. Psychometric validation of the health care quality assessment tool followed the recommended procedures (Kothari, 2008). First, internal consistency analysis (Cronbach's alpha) for the items was performed. Then factorial structure

identification with Common Factor Analysis (CFA) was performed on the items in the scale. Decisions were made by adopting theoretical criteria for retaining factors with Eigenvalues higher than 1, applying Varimax Rotation and deleting items not satisfying the following criteria: loadings equal or above 0.6 in the dominant factor and cross-loadings below 0.4 in the remaining factors. Finally, an internal consistency analysis of the factor structure found was done.

The evaluative responses on patients' satisfaction were summarized using an average score. This involved the calculation of the mean across all the response categories. This method treats the response options as points on a linear or interval scale. The mean scores were transformed linearly to a 0 to 100 scale, with 100 corresponding to "excellent" and 0 to "poor". The converted mean scores were presented using horizontal bar graphs. The quality of care offered by the COs was interpreted in light of current theories of quality management and improvement which recommend comparisons to best practices rather than to minimal standards.

Generalized linear regression models were used to test for the association between patients' characteristics and patients' satisfaction. The dependent variables were the PSAT scales and two subscales that were extracted from this tool using CFA. The independent variables were patients' characteristics. Age and number of previous visit to hospital in the last twelve months were used as numerical variables. Categorical variables were separated into dummy variables with the omitted categories for sex, marital status, education, location and socio-economic class being "female," "not married," "some college or university education," "urban" and "high income" respectively. The partial eta squared statistic was also calculated in the regression analysis. This statistic is used to

assess the practical significance of each independent variable. It is based upon the ratio of the variation accounted for by the term, to the sum of the variation accounted for by the term and the variation left to error. Larger values of partial eta squared indicate a greater amount of variation accounted for by the model term, to a maximum of 1.

Self assessed performance responses of the COs were summarized using the top box method. This involved reporting the percentage of COs whose responses indicated the most favourable outcome for a given measure using a horizontal bar graph. The results were interpreted in the light of current theories of quality improvement which recommend comparisons to best practices rather than to minimal standards.

A self assessed performance index was created by summing up responses to the ten evaluative questions. The psychometric properties of this index were established using reliability and factor analyses. A generalized linear regression model was then used to identify the correlates of COs performance. The created performance index was used as the dependent variable. Independent variables included socio-demographic variables and other characteristics related to the COs practice.

In all the analyses in this study a ρ value of less than 0.05 was taken as proof of statistical significance. Data was analyzed using the Statistical Package for Social Sciences (SPSS) Version 13.0.

3.8 Ethical Considerations

Permission to was sought from Jomo Kenyatta University of Agriculture and Technology (Appendix 4). The Ministry of Higher Education, Science and Technology authorized the

study to be conducted through a letter referenced NCST/5/002/R/1002 (Appendix 5-6). Provincial Directors of Medical Services and/or Provincial Directors of Public Health and Sanitation in the eight provinces gave permission to collect data from public health facilities (Appendix 7-11). Further permission was sought from heads of health institutions where the sampled COs operate from.

Informed consent was sought from the sampled COs and their patients (Appendix 12). Confidentiality of data was maintained throughout the study. The sampled COs and their patients were only identified by codes. No information was sought from the patients on the nature of their illness, investigations conducted or treatment offered. The survey was only concerned with the patients' perceptions of their experience with COs.

CHAPTER FOUR

4.0 RESULTS

4.1.1 Socio-demographic Characteristics of Patients

A total of 2118 patients were sampled across the country. The response rate was 100%. Of these patients, one or more variables were missing from 157 cases or 7%. Results however showed that the proportion of missing responses per item was low. The most frequent missing variable was the number of previous visits in the last 12 months in the health facility (n = 157). To test for the effect of missing data, the missing variables were replaced with mean values (continuous) or mode values (discrete) and data reanalyzed. The overall results of the analysis were not significantly changed by using these imputed data for the missing cases.

The average age of the respondents was 31.3 years (SD = 13.64). The majority of the surveyed patients were female (58%) and married (51%) (Table 4.1).

Of the surveyed patients, 38% had secondary school level of education. Most of the patients considered themselves to be in the middle income group (64%) and a majority of them indicated that they lived in urban areas (60%). There were no differences in age, education attainment and income group across the sexes. However, the proportion of married males (53%) was significantly higher than that of married females (46%) (χ^2 = 9.50, $\rho < 0.05$).

Table 4.1: Socio-demographic Characteristics of the Patients

Characteristic		Frequency	Percentage
Sex	Female	1236	58
	Male	882	42
Marital Status	Married	1078	49
	"Not" Married	1040	51
Education	No formal education	196	9
	Primary	739	35
	Secondary	806	38
	College	329	16
	University	48	2
Socio-economic class	Low	597	28
	Middle	1344	64
	High	177	8
Location	Rural	813	40
	Urban	1205	60

The surveyed patients considered their health status to be below excellent, with only one percent rating it as excellent (Figure 4.1). The patients indicated that they had visited the health facility on average 2.89 times (SD = 2.18) in the last one year. The global rating of health status was significantly correlated with the number of visits to a health facility in the previous year ($r = -0.09$, $\rho < 0.01$).

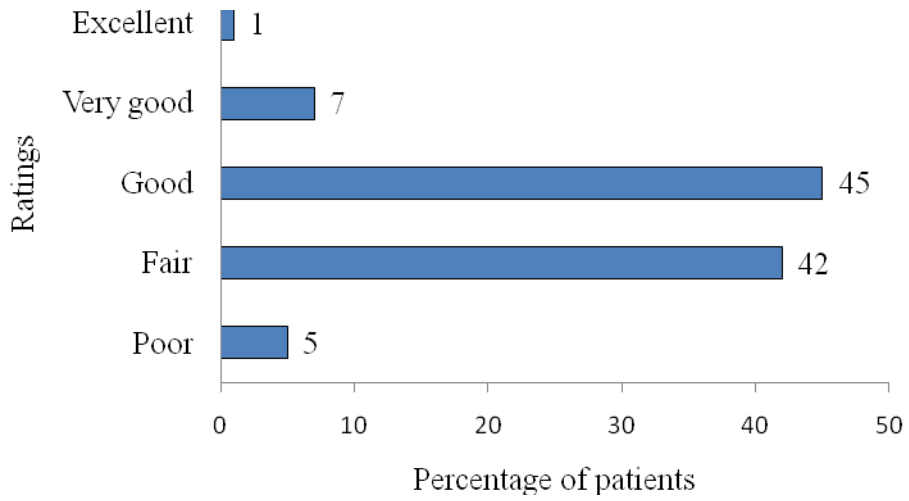

Figure 4.1: Patient Ratings of their Health Status

4.1.2 The Psychometric Properties of the PSAT

Initially, the factorability of all the 9 items in PSAT were examined. All the 9 items in the satisfaction survey were significantly correlated with each other (Table 4.2), suggesting reasonable factorability. The least coefficient of correlation was between overall quality and the technical skills of COs (r = 0.34) while the highest was between overall quality and the personal manner of the COs (r = 0.77). Secondly, the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.90., above the recommended value of 0.6, and Bartlett's test of sphericity was significant (χ^2 (36) = 12450.85, $\rho < 0.05$). The diagonals of the anti-image correlation matrix were all over 0.85, supporting the inclusion of each item in the factor analysis. Finally, the communalities were all above 0.45, further confirming that each item shared some common variance with other items. Given these overall indicators, factor analysis was conducted with all 9 items.

Table 4.2: Correlation Coefficients* of Various Aspects of Quality of Health Care

	1	2	3	4	5	6	7	8	9
1. Overall	1								
2. Wait	0.43	1							
3. Location	0.56	0.54	1						
4. Access	0.53	0.47	0.70	1					
5. Privacy	0.67	0.41	0.55	0.54	1				
6. Personal	0.77	0.36	0.51	0.48	0.69	1			
7. Time spent	0.56	0.62	0.53	0.52	0.61	0.57	1		
8. Explanation	0.61	0.46	0.53	0.50	0.60	0.54	0.52	1	
9. Technical	0.76	0.34	0.51	0.48	0.66	0.85	0.56	0.54	1

* All correlations were significant at $\rho < 0.01$

Considering the construct's multidimensional nature, its structure was identified through CFA. Using Kaiser's criterion ("Eigenvalue" greater than 1), two components were extracted, which explained 72.60% of total variance (Table 4.3. These components differentiated items that dealt with the COs interpersonal skills from those that dealt with access to the health care.

Table 4.3: Patients Satisfaction's Factor Structure: Rotated Component Matrix

	Interpersonal skills	Access to care
Personal	**0.90**	0.24
Technical	**0.90**	0.23
Overall	**0.81**	0.36
Privacy	**0.73**	0.41
Explanation	**0.54**	0.52
Wait	0.10	**0.86**
Location	0.38	**0.75**
Access	0.35	**0.72**
Time spent	0.46	**0.66**
Explained variance (%)	61.24	11.37

The PSAT scale showed good internal consistency ($\alpha = 0.92$) and there was no damage to the internal consistency even if any of the individual items was removed (Table 4.4). The coefficients of both its sub-scales namely interpersonal skills ($\alpha = 0.91$) and access to the

health facility (α = 0.85) were satisfactory, and were not affected by the removal of any of the items.

Table 4.4: Reliability of PSAT among Patients

	Interpersonal Skills	Access to Care	Overall Scale
Overall Cronbach's α	0.91	0.85	0.92
Alpha if item is deleted:			
Personal	0.87		0.90
Technical	0.87		0.90
Overall	0.87		0.90
Privacy	0.89		0.91
Explanation	0.91		0.91
Wait		0.83	0.92
Location		0.81	0.91
Access		0.82	0.91
Time spent		0.82	0.91

The overall PSAT scale (0.91) was significantly correlated with global rating on satisfaction (Table 4.5). Scores on the specific subscales of the PSAT also showed significant positive correlations with the global satisfaction rating scores suggesting construct validity.

Table 4.5: Correlation coefficients of Different Measures of Patients' Satisfaction

	1	2	3	4
1. PSAT (9 items)	1			
2. Interpersonal skills	0.73**	1		
3. Access to care	0.69**	NA†	1	
4. Global satisfaction rating	0.24**	0.10**	.25**	1

*Correlations significant at ρ < 0.01, † Not Applicable

4.1. 3 Patients Satisfaction with Health Care Services Offered by COs

The surveyed patients considered the quality of their experience with COs as good, with an average per-item score of 3.23 (SD = 0.68) on the 9-item health care quality survey which translates to an overall quality of the visit to COs of 67%. There was substantial

variation in the complete 9-measures of quality, with scores ranging from 45 (all questions answered “excellent”) to 9 (all questions answered “poor”).

Composite scores were created for the two dimensions of patients’ satisfaction that emerged from CFA, based on the mean of the items which had their primary loadings on each factor. Patients were generally satisfied with the quality of their interaction with COs, with an average per-item score of 3.36 (SD = 0.74). This translates to a satisfaction rating of 67 percent. There was substantial variation in the 5-item measure of the quality of interaction between patients and COs, with scores ranging from 5 (all questions answered “poor”) to 25 (all questions answered “excellent”).

The patients were less satisfied with issues of access to care with an average per item score of 3.05 (SD = 0.74). This translates to a satisfaction rating of 61 percent. Substantial variation was also evident with this sub-scale.

Examining the specific features of care, the patients gave time waiting to see the COs the least score of 56% (Figure 4.2). The technical skills and the personal manner of the COs were rated highest at 69% each.

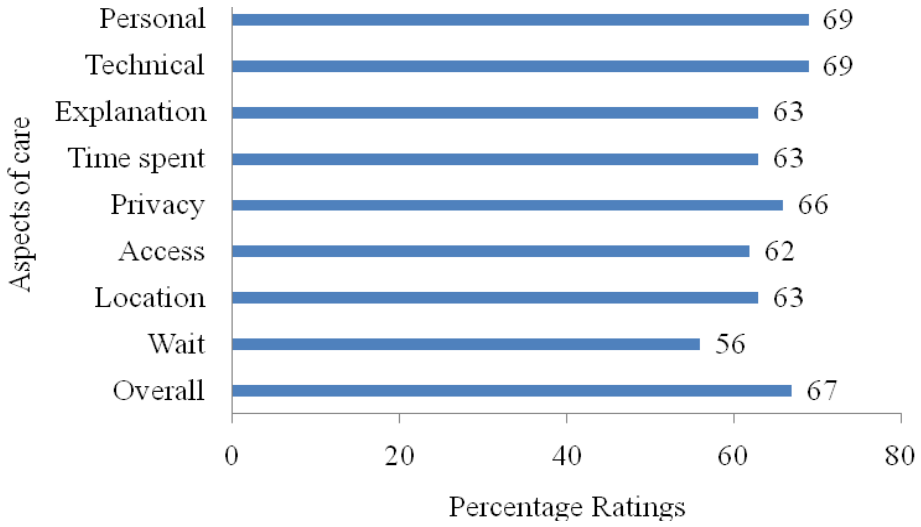

Figure 4.2: Patient Ratings of Various Aspects of Satisfaction with COs

A generalized linear regression model was estimated in order to determine the effects of patients' characteristics on the PSAT ratings while controlling for the effects the other variables. In the analysis, the mean value of all PSAT items was used as the dependent variable. This variable was obtained by summing all the patients' satisfaction responses and dividing by 9. Patient's socio-demographic characteristics and health status were the independent variables. The regression coefficients obtained are shown in Table 4.6. The first column show the labels of variables used in the regression analyses. The second column presents the beta coefficients with their respective 95% Confidence Internal (CI) while the last column shows the eta squared statistic for each variable.

The partial eta squared statistics shows the practical significance of each term, based upon the ratio of the variation accounted for by the term, to the sum of the variation accounted for by the term and the variation left to error. Larger values of partial eta squared indicate a greater amount of variation accounted for by the model term, to a

maximum of 1. Here, while the variables location and health status are statistically significant, they have a minimal effect on patient satisfaction.

The regression results show that socio-demographic characteristics of the patients were not statistically associated with overall PSAT scale. Only location and health status had significant associations with patient satisfaction. The results show that patients from rural areas express higher satisfaction with services offered by COs. The results also indicate that the health status of the surveyed patients as measured by number of visits to a health facility is negatively associated with quality of health care services offered by COs as measured using the modified PSAT scale. Specifically, visiting health facilities frequently is associated with a decline of 0.03 in patients' satisfaction. No interaction effects were uncovered during the regression exercises. This suggests that patients who frequent health facilities tend to be less satisfied with their experience with COs. As shown in the reported eta statistics, both the variables location and health status have a minimal effect on patient satisfaction.

Table 4.6: Regression Analysis of Factors Affecting Patients' Satisfaction

Parameter	β (95% CI)	Eta Squared
Intercept	3.40*	0.27
Location: Rural	0.09*	0.00
	(3.12 to 3.69)	
Marital Status: Married	-0.04	0.00
	(-0.11 to 0.03)	
Education: None formal	-0.14	0.00
	(-0.44 to 0.16)	
Primary	-0.06	0.00
	(-0.33 to 0.20)	
Secondary	-0.01	0.00
	(-0.27 to 0.25)	
Income: Low	-0.13	0.00
	(-0.27 to 0.02)	
Middle	-0.09	0.00
	(-0.22 to 0.05)	
Gender: Male	-0.06	0.00
	(-0.13 to 0.01)	
Age	0.00	0.00
	(-0.00 to 0.00)	
Visit to hospital in past year	-0.03*	0.01
	(-0.05 to -0.01)	

* Associations statistically significant at $\rho < 0.05$

Two other generalized linear models were further used to determine the associations of specific patients' characteristics on each of the two dimensions of patients' ratings of satisfaction (Table 4.7). The dependent variable in the first model was the mean value of the items in the PSAT which assessed access to care. The dependent variable in second was a composite score which was calculated as the mean of the items that assessed the direct interaction of patients with COs. Patients' characteristics were taken as the independent variables. Being married is associated with a 0.14 decrease in the score on satisfaction with access to care. Patients from rural areas had a 0.11 increase in satisfaction with access to care. Patients who had more hospital visits in the previous 12

months had a 0.04 reduction in their satisfaction with access to care. Patients from rural areas tend to be more satisfied with their interaction with COs. Further, patients who frequented hospital the most in the previous 12 months had a 0.04 reduction with their interaction with COs. Further analyses showed that none of the above described significant independent variables had an eta squared statistic of above 0.008. This indicates that the effects of these variables on patient satisfaction are minimal. Further analyses were conducted with a view of uncovering interaction effects among the independent variables but none were found to be significant.

Table 4.7: Regression Analysis of Factors Associated with Different Aspects of Patients' Satisfaction with visit to COs

Parameter	Access to Care β (95% CI)	COs interpersonal Skills β (95% CI)
Intercept	3.36*	3.39*
Sex: Male	-0.05	-0.07
	(-0.13 to 0.02)	(-0.14 to 0.01)
Marital status: Married	-0.14*	0.02
	(-0.21 to -0.06)	(-0.06 to 0.09)
Income: Low	-0.24	-0.06
	(-0.40 to -0.08)	(-0.22 to 0.09)
Middle	-0.25	0.01
	(-0.39 to -0.10)	(-0.13 to 0.15)
Location: Rural	0.11*	0.08*
	(0.03 to 0.18)	(0.01 to 0.16)
School: No formal schooling	-0.07	-0.11
	(-0.255 to 0.11)	(-0.30 to 0.06)
Primary	0.00	-0.004
	(-0.12 to 0.11)	(-0.12 to 0.11)
Secondary	0.09	0.01
	(-0.02 to 0.20)	(-0.10 to 0.12)
Number of visits in hospital past year	-0.04*	-0.04*
	(-0.06 to -0.02)	(-0.06 to - 0.01)
Age in years	0.001	0.002
	(-0.002 to 0.004)	(-0.001 to 0.01)

* Associations statistically significant at $\rho < 0.05$

Since the number of visits to the health facility in the previous one year was highly negatively correlated with patient rating of their overall status of health ($r = -0.09$, $\rho < 0.01$), this regression analysis was run by including this second measure of health status as one of the independent variables. The conclusions made were consistent by using either of the two measures of status of health (number of visits and general status of health).

4.2.1 Socio-demographic Characteristics of Clinical Officers

A total of 367 clinical officers were sampled across the country. Of these, one or more variables were missing from 92 cases or 25%. Further examination of the data showed that the proportion of missing responses per the survey item was low. The most frequent missing variable was on number of trainings attended ($n = 39$). To test for the effect of missing data, the missing variables were replaced with mean values (continuous) or mode values (discrete) and data reanalyzed. The overall conclusions made from the analysis were not significantly changed by using these imputed data for the missing cases.

The average age of the respondents was 37.6 years (SD = 9.48). Twenty seven percent of the respondents were female while 73% were male (Table 4.8). Majority of the COs were married (78%) and most operated in urban areas (64%). Male COs were older (39.2 years, SD = 9.62) when compared to female COs (33.5 years, SD = 7.84), a difference that could not be attributed to chance ($t = 5.22$, $\rho < 0.05$).

Table 4.8: Socio-demographic Characteristics of the COs

Characteristic		Frequency	Percentage
Sex	Male	269	73
	Female	98	27
Marital Status	Married	285	78
	Single	77	21
	Other (Separated, nun, widowed or divorced)	5	1
Location	Rural	133	36
	Urban	234	64

On average the surveyed COs had 12.39 (SD = 8.73) years of experience. The COs also indicated that they attend to an average of 44.53 (SD = 32.33) patients per day.

The level of education, specialization and administrative duties held by the surveyed COs is shown in Table 4.9. Most had diploma level education (54%). Less than half of the COs (49%) had specialized in different aspects of clinical medicine. The more popular areas of specialization were paediatrics (11%), anaesthesia (8%), skin and lung diseases (8%), ear, nose and throat (5%) orthopaedics (5%) and ophthalmology (5 %). The least popular areas of specialization were epidemiology, reproductive health and dental surgery with a combined proportion of 9 % among all the surveyed COs. Further, a majority of the COs (48%) were heading a health facility, hospital department or health program.

Table 4.9: The Distribution of Cos according to the Level of Education and Administrative Posts Held

Characteristic		Frequency	Percentage
Educational Attainment	Diploma	198	54
	Higher diploma	154	42
	Degree	7	2
	Masters	8	2
Specialization	None	186	51
	Some specialization	181	49
Administrative Duties	None	167	46
	In charge	177	48
	Deputy in charge	23	6

Thirteen percent of the surveyed COs indicated that they had authored at least one publication and most of them (80%) had an active email address (Table 4.10). A majority of the COs (65%) were members of voluntary organizations.

Table 4.10: Distribution of COs According to Indicators of Self-advancement

Characteristic		Frequency	Percentage
Publications (journal articles, books, Technical reports and book reviews)	None	319	87
	Published	48	13
Computer awareness (Email address)	Yes	295	80
	No	72	20
Membership to voluntary organization	Yes	240	65
	No	127	35

Thirty-eight percent of the surveyed COs stated that they had received training within the past three years. On average, the surveyed COs said that they had attended 3.72 (SD =

2.84) trainings, workshops and seminars in the last three years. Most of the trainings attended lasted for less than five days.

Sixty percent of the surveyed COs said that they were involved in alternative income generating activities. The most commonly cited income generating activities were business, farming and private clinics.

4.2.2 Self Assessed Performance of COs

The 10-item COs performance index showed satisfactory internal consistency with a Cronbach's alpha coefficient (α) of 0.65 and there was no notable damage to this internal consistency even if any of the individual items were removed. The COs gave themselves an average score of 32.85 (SD = 3.60). There was wide variation in performance with scores ranging from 18 to 40. Overall only 33.8% of the surveyed COs rated their performance at best practice (Table 4.11).

Table 4.11: Distribution of COs Self Rated Performance Scores

Performance Index	Frequency	Percentage
Missing	39	10.6
≤24	9	2.5
25-29	42	11.4
30-34	153	41.7
35-40	124	33.8
Total	367	100

A majority of the COs indicated that they experience problems in generic skills particularly in information technology, management and finance (Figure 4.3). Other problematic areas were supervision of students and conducting community health

activities which were undertaken by only 29 and 39 percent of the COs respectively.

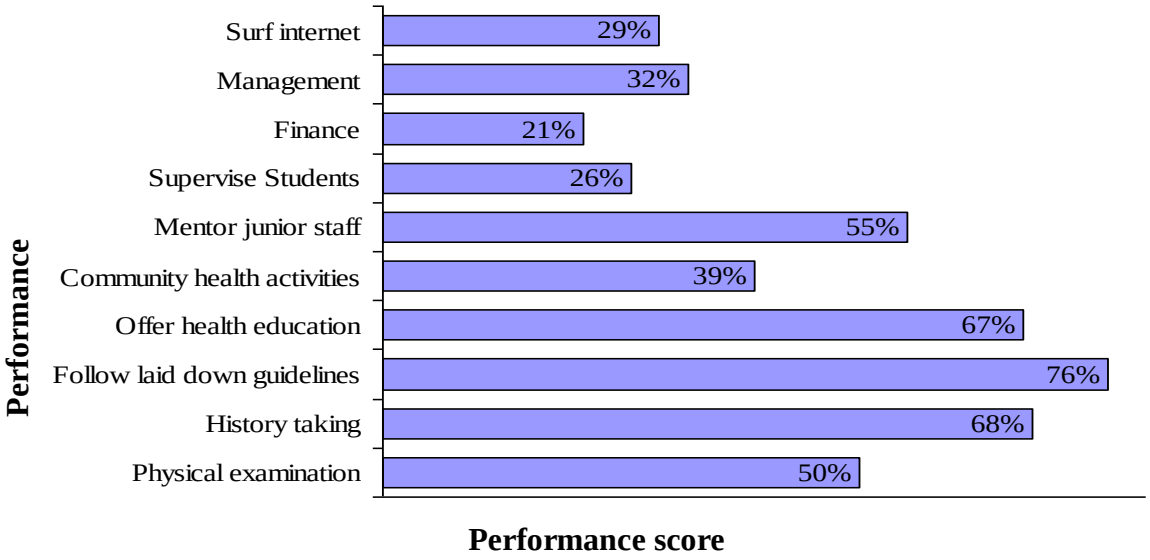

Figure 4.3: Proportions of COs Indicating the Most Favourable Response to Measures of Performance

The correlates of the performance of COs were obtained using a generalized linear regression model. The results showed that the socio-demographic characteristics of the COs were not associated with their self ratings on performance. Further the highest level of education attained, years of experience in clinical work, belonging to voluntary organizations, taking specialized courses in clinical medicine and the number of patients attended to were not statistically associated with the self assessed ratings on performance. On-the-job training, number of publications and holding administrative duties were statistically associated with superior ratings on performance (Table 4.12). The results indicate that the number of on-the-job trainings was positively associated with higher ratings of performance. Having no administrative duties was associated with lower ratings of performance. Further, COs with no publications were less likely to rate their

performance favourably. No interaction effects among the independent variables were found to be statistically significant.

The last column of the table, Eta squared shows the practical significance of the variables. Attending trainings was associated with 4% of the variance in the performance of COs. Further holding of administrative positions explained 3% of the variance in COs performance. Finally, having at least one publication explained 2% of performance.

Table 4.12: Regression Results on Factors Associated with COs Self-rated Performance

Parameter	β	Std. Error	Eta Squared
Intercept	34.02*	0.71	0.88
Trainings	0.24*	0.07	0.04
Administrator (No)	-3.26*	1.15	0.03
Publications (No)	-1.74*	0.70	0.02

*Associations statistically significant at $\rho < 0.05$

CHAPTER FIVE

5.0 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussion

5.1.1 Tool for Evaluating Quality of Health Care Offered by COs

The key finding in this study is that the PSAT scale performed well on most of the psychometric indicators. This study found that the PSAT was sufficiently concise, internally reliable, construct valid and it measures the same constructs when applied to patients from a number of different types of health facilities across the country. The scale therefore satisfies important criteria for an adequate measurement scale (Gasquet *et al*., 2004). On construct validity the scale performed as is suggested in patients' satisfaction literature (Tucker III and Adam, 2001). A two-factor solution was generated from the PSAT. The surveyed patients assessed their health care experience from the dimension of ease of access and the interpersonal care offered by the COs. This finding is consistent with the literature that shows issues of access and interpersonal skills of physicians underlie patients' satisfaction with their outpatient visit to patients (Rubin *et al.,* 1993; Tucker III, 2002; Cole, 2008). These two dimensions seem to be at the core of satisfaction with the service. The two factor structure of patients' satisfaction was therefore confirmed.

The PSAT demonstrated acceptable internal consistency overall among the surveyed patients. This finding is consistent with literature which reports on comparable patients' satisfaction scales. For example, the VSQ-9 has internal consistency of between 0.82 and 0.94 (Ware and Hays, 1988; Cole, 2008) when used to assess outpatients visits to

physicians in the United States of America (USA). Rubin *et al.* (1993), in their study involving 17,671 outpatients in the USA, reported that the use of a concise patient satisfaction survey was an acceptable method for assessing the level of satisfaction with an outpatient medical encounter.

The reported results further revealed that both subscales of PSAT were internally reliable. In other words, individual items in each subscale asked related questions. This may imply that patients differentiate between ease of access from interpersonal aspects of their consultation with COs. This is in conflict with suggestions that quality of services provided by clinicians' factors into different components such as empathy, reliability, responsiveness and caring (Vinagre and Venes, 2008) or into one dimensional (Gasquet *et al.*, 2004) and supports the proposal that satisfaction can be dichotomised into affective and technical dimensions (Donabedian, 1980; Tucker and Adams, 2001). Patients' therefore judge quality of care offered by COs by the criteria of access and the manner it is delivered. It has been suggested that the two aspects are predictors of patient opinion on care and services (Gasquet, *et al*. 2004). Focusing on these aspects is justified since implementation of appropriate technical medical strategies is necessary, but not sufficient, to achieve desired outcome (Donabedian, 1980). Therefore these two dimensions can pinpoint independent improvement measures, and calculating two different scores may improve the probability of highlighting the impact of such measures.

The strategy that was used to construct the PSAT followed recommended procedures for the validation of measurement tools (Sitzia and Wood, 1997; Kothari, 2008). The content of this questionnaire comprised features that were specific to the health care system in Kenya and its culture, but overall it remains consistent with patients satisfaction

instruments used in various studies in developed countries (Rubin *et al*., 1993; Grogan *et al*., 2000; Tucker III and Adams, 2001; Tucker III, 2002; Gasquet *et al*., 2004; Otani *et al*., 2005; Vinagre and Neves, 2008). The predominant role given to experts in the development of the instruments, the literature review and the pilot study ensured content, construct and face validity of the PSAT. The use of the panel of experts almost throughout the process of development of the PSAT offered both intrinsic and clinical relevance to survey items. This is important for several reasons. First, patients' satisfaction surveys aim at not only measuring quality of care from user viewpoint, but also help highlight practical elements that can be modified in order to improve quality. Second, there is need to develop questionnaires that are perceived to have content validity by health care providers. This will help generate interest in survey results and provide incentive for changes in the practice of COs. Third, the reluctance to use validated questionnaires that are developed elsewhere can be countered if questionnaire items are perceived as relevant.

The PSAT showed adequate concurrent validity. This was demonstrated by its positive and significant correlation with patients' global ratings of satisfaction. Scores on each of its subscale also correlated significantly with general satisfaction, suggesting that each subscale measures some aspect of patient satisfaction. This result is similar to reports from other parts of the world which show that patients' satisfaction instruments have concurrent validity (Tucker III and Adams, 2001; Barr, 2004; Gasquet *et al*., 2004; Otani *et al*., 2005; Cole, 2008). It can therefore be inferred that the PSAT subscales asked questions that impacted on patients' general satisfaction with the COs practice.

The PSAT was acceptable to the patients; none of the approached patients declined the survey. Further, only a small proportion of the questionnaires had missing items. The proportion of missing responses per item was also quite low. An examination of the individual items of the study questionnaire indicated that one question; on the number of previous visit to a health facility in the last 12 months was often missed. This may be due to recall bias as the time frame included in the question was extensive. Nonetheless, a very high proportion of the surveyed patients were able to respond adequately to all the items on satisfaction. The evaluative responses in PSAT were also attractive since literature demonstrates that they are more related to important outcomes such as the intention to follow a health provider's advice or refer another patient, than are patients' satisfaction ratings (Barr *et al*., 2000, Agency for Health Care Research and Quality, 2011). Overall, the high response rate of the PSAT is an indicator of the acceptability of the survey instrument among patients.

An additional significant finding of this study is the minimal predictive power of patients' characteristics. A profile of a relatively youthful, married, urban, moderately educated patient, in the middle level socio-economic class and who had frequently visited hospital in the previous twelve months emerged. This study reported that the effects of these characteristics on patients' satisfaction scores were significant in value. This finding is consistent Rubin *et al*., (1993); Tucker and Adams, (2001) but not with others (Barr *et al*., 2000; Grogan *et al*., 2000; Gasquet *et al.*, 2004). This finding is significant in that individual differences explain in patients' assessments of their visit to COs. The need to adjust for patients' characteristics in their satisfaction ratings is therefore not fully supported in this study. This indicates that practices could remove these items from the

questionnaire without affecting the validity of the rest of the questionnaire. This has the advantage of making the PSAT more concise, easy to administer and lowers the burden of analyzing assessment data.

5.1.2 Patients Satisfaction with Quality of Health Care Services Offered by COs

The surveyed patients gave the overall quality to a score of 67% and all the specific aspects of care were rated as below excellent. Aspects of the interaction between COs and the patients were rated highest. Access to services was the most problematic for the patients, with "waiting to see the clinical officer" given the lowest rating at 56%. These findings are in agreement with previous literature which shows that a quarter of patients were not satisfied with the services offered by COs in Nakuru (Karanja, 2005). Further results indicated that the surveyed patients rated their satisfaction with the interpersonal skills of COs at 67% and access to care at 61%. Reports that can be used to compare these results are unavailable. Overall, the results indicate that patients rated their visits to COs at below excellent. Together, these findings suggest that patients see for improvement in their outpatient visits.

The results of this study demonstrate that most of the patients were females. This sex distribution is in agreement with existing literature which shows that more females tend to patronize hospitals than males (KNBS and ICF Macro, 2009). This can be explained by the observation that males particularly Africans tend to shy away from hospitals to show their masculinity (McKian, 2003) and females tend to report higher morbidity.

The surveyed patients were on average in the third decade of life with no apparent age difference among the sexes. This result reflects a comparatively young age structure of

the patients. The distribution of sampled patients by age closely resembles that of reported in health and demographic surveys in Kenya (KNBS and ICF Macro, 2009; CBS, MoH and ORC Macro, 2004). This youthful age structure is typical of populations with high fertility and high mortality. The reported age structure suggests that there was no substantial selection bias in the sample.

The results show that most of the respondents were married, with males being more likely to marry than females. This contrasts with data from the Kenya Demographic and Health Survey which shows that fifty eight of female are married or living with a man, compared with 51% of males (KNBS and ICF Macro, 2009; CBS, MoH and ORC Macro, 2004). Differences may arise from the observation that the current study is hospital based while health and demographic surveys are conducted at household level. This finding may suggest that the profile of patients visiting COs is slightly different from that of the typical household.

This study showed that most of the surveyed patients had secondary level education. This trend mirrors the general trends of educational attainment in Kenya where more individuals complete post-primary education (KNBS and ICF Macro, 2009).This means that COs in Kenya are managing patients with relative high educational attainment. This observation may have implications on the interaction between COs and patients.

In terms of rural and urban dichotomy, 4 in every 10 of the surveyed patients indicated that they lived in the rural areas. This result differs markedly from literature that shows that three-quarters of both males and females in Kenya live in the rural areas (KNBS and ICF Macro, 2009). The difference may be explained by the observation that the settings

of this study was COs consultation rooms and most COs in public service work either in provincial or district and sub-district hospitals which are located in urban areas. The result is an indication of the skewed distribution of health facilities in favour of urban centres (Muchiri and James, 2006).

A majority of the surveyed patients were in the middle income group. This result differs with the finding that 56% of Kenyans live below the poverty line (GoK, 2007). This result indicates that people who consider themselves to be of low income may not be visiting COs. Patronage of COs appears to be done by middle class people. Probably, the cost sharing scheme that was introduced in the public health system may explain this skewness. The skewed distribution of health facilities in favour of urban areas may also explain this finding since people in rural areas tend to be less wealthy than their counterparts in urban areas.

Most patients rated that their health status was "not excellent." Comparable data for this finding is not readily available. This result suggests that COs in Kenya are managing patients who perceive themselves to have less than excellent health. It is possible that these patients come to hospital when their health status has already been compromised. This underlies the observation that COs primarily focus on curative health at the expense of promotive and preventive health in Kenya (Karanja, 2005; Karanja, 2009).

The regression results highlighted three points. First, patients who visit rural health facilities tend to be relatively more satisfied with their overall visit to COs when compared to their urban counterparts. Second, respondents who frequent hospital the most appear to have concerns with the overall experience of their outpatient visit to COs.

Third, married respondents appear to be more sensitive to problems of access to care. This study also established that patients who had visited health facilities most frequently tended to respond less favourably to questions on quality of care. This result is similar to reports that indicate that sicker patients tend to be less satisfied with their visits to clinicians (Barr *et al*., 2000; Rahmqvist *et al*., 2001; Gasquet *et al.*, 2004). It however differs with literature suggesting that the health status of patients is not associated with satisfaction (Rubin *et al.*, 1993; Hargraves *et al*., 2001). In the current study it emerges that patients with frequent visits to health facilities were more sensitive to problems with the quality of health care that they received. These differences in opinion may be explained in at least two ways. First, the variability in the measurement of the status of health is partly to blame. Clinical indicators such as symptoms, broad patients' reports about how they feel and health-related quality-of-life instruments that cover physical and social functioning from the patient's perspective are usually utilized (Crow *et al*., 2002). Second, the illness profile of patients may bias ratings on satisfaction. Different types of illness and disabilities impact variedly on satisfaction. The finding that sicker respondents tend to be less satisfied with health care may underline the role of expectations in patient satisfaction. Failure of improvement in health status may lead to disillusionment and thus impact negatively on satisfaction. Further, familiarity with health care providers as disease progresses especially with remote chances of success may breed contempt and thus lower satisfaction levels. The sicker patients' may also have an external locus of control and therefore tend to blame the health care system and providers for their problems. Alternatively, the sicker patients' do not receive adequate counseling on their

health status from the COs. Whichever, the reason, quality is currently viewed from the patients point of view and COs should be aware of the patients rating of their services.

In this study patients residing in rural areas reported higher levels of satisfaction with care from COs relative to their counterparts in urban areas. Similar findings have been reported in Armenia (Harutyunyan *et al*., 2010) and in the United States of America (Wallace *et al*., 2008). Probably, people residing in rural areas are more stoical and accepting than urban dwellers, or that they engender more respect and care from their health care providers. Alternatively, it may be a cohort effect in that they have lower expectations based on prior experiences when standards were lower. Interpersonal continuity of care, characterized by personal trust and responsibility, may also influence the satisfaction with patient-provider relationships. Patient-provider interactions likely dominate patients' overall assessments of care in rural Kenya. In the closely knit communities of rural Kenya, patients and COs often know each other as neighbours, and therefore patients may be less critical of health care providers. In such cases the assessment of patients' satisfaction may not provide a valid proxy for the broader concept of quality, of which patient satisfaction is but one component. The difficulty in arriving at a good explanation about the link between rural residency and higher satisfaction with health care is suggestive of the need for further research. The available data however highlights the importance of improving health care services in the rural areas as a means of improving system-wide satisfaction levels. Addressing the lower satisfactions scores in urban areas is also imperative in the quest to attain health equity.

The observed superlative satisfaction level of patients in rural areas in this study is however at conflict with the current state of primary health-care services in Kenya. Urban

health facilities have objectively better physical conditions, equipment and staffing than those in areas (GoK, 2007; MoMS, 2008). It is therefore possible that rural patients often have a limited choice of providers and need to travel greater distances to obtain health care than those in urban areas. These factors may lead to lower expectations and higher gratitude among rural clients. The harsh realities of rural health facilities in Kenya could also explain an unwillingness of some of patients to express dissatisfaction with their providers or care. Patients may be reluctant to hold health care providers accountable to quality standards that are unrealistic given the broader socioeconomic realities that make attaining such standards impossible. This reluctance might be further enhanced by misconceptions that poor assessments would lead to punitive measures directed at the providers. That misconception may have emanated from a common practice where formal public assessments are conducted only when serious problems are evident.

The regression results indicated that married respondents appear to have problems with the aspects of access to care. The relationship between marital status and patients' satisfaction has not received adequate attention in literature. It is possible that marriage brings added demands to individuals who then transfer their problems to health care providers. It can also be argued that the married respondents had raised expectations about the care they needed.

The reported regression results may suggest on the need to adjust for health status, residency and marital status in patients' satisfaction ratings. However, there is need to take caution since, this study showed that socio-demographic factors had minimal influence on patient satisfaction, a finding that is consistent with existing literature (Cole, 2008; Barr *et al*., 2000). In the current study the influence of the socio-demographic

factors on satisfaction ratings was shown to be miniscule. It is therefore advisable to use to assess patients satisfaction without necessarily adjusting for patients' characteristics.

5.1.3 The Self Assessed Performance of COs

The reported results indicate that most of the COs rated their performance at below best practice. This finding is important considering that there are no rigorous studies on the productivity of health care providers Kenya. The result offers support to reports that have raised concerns about the practice of COs' in Kenya (Karanja *et al*., 2012; Karanja, 2009) and other parts of SSA (Health Systems 20/20, 2010). The finding is a source of concern when compared to the enormous tasks that COs are charged with (GoK, 1990). The finding that COs rate their performance at below best practice suggests that there is ample room for improvement in the performance of COs in Kenya. This study points on the need to enhance the performance of COs in Kenya. Increasing the productivity of existing workers is almost always more cost-effective than hiring more workers, and in some cases hiring more providers may be impossible (Luoma *et al*., 2010).

Further analyses showed that a majority of COs indicated that they experience problems in generic skills especially information technology, management and finance. Studies that can be used to compare this result are not readily available. This finding is disturbing since health service management is an important component in the training of COs in Kenya (GoK, 2004). Familiarity with information technology has a bearing on access to knowledge and by extension the practice of COs. The internet for instance has a wealth of health and medical knowledge which COs can access and use to improve their practice. The low ratings of the COs in management and finance are probably a reflection of the lack of opportunities for self advancement in these areas especially by health care

providers. For instance, training in leadership and management has been cited as missing from the health sector in Kenya (MoMS and MOPHS, 2010b). The significance of this finding is that it indicates areas in the COs practice where action is needed. Further it underscores the need for CPD.

The strategy that was used to construct the COs performance index followed recommended procedures for the validation of measurement tools (Sitzia and Wood, 1997; Kothari, 2008). The content of this questionnaire comprised features that are of relevance to clinicians (Carr, 2004; GoK, 2004; Campbell, 2010). The predominant role given to experts in the development of the instruments, the literature review and the pilot study ensured good content, construct and face validity of the performance assessment scale. The use of the panel of experts helped offer practical relevance to the selected performance items. The performance index also showed satisfactory reliability, implying the items were measuring the same construct. The performance scale therefore shows promise as a tool for self assessment.

The reported result shows that most of the surveyed COs were males, married, in their third decade of life and with had limited university education. The reported profile compares favourably with the results of a human resources mapping strategy which found that one third of health workers in Kenya are aged between 41 and 50 years (Muchiri and James, 2006). Further analyses showed that socio-demographic characteristics of the COs were not associated with performance ratings. The lack of association between the traits of COs and performance ratings may be due to the observation that the two variables are not directly related (Kak *et al.*, 2001). One can not also rule out the effects of measuring these variables at different levels; performance is measured at the perceptual level while

the other variables are objective measures. It is also possible that the two are not theoretical linked.

This study documented that COs have relatively long experience in service which averages to 12.39 years. Comparative data on the extent of COs experience in Kenya is unavailable. One would however expect that experience leads to superior performance. The reported regression results did not show any relationships between years of experience and the COs self assessed performance ratings. This finding fails to support the view in literature that experience leads to superior performance by clinicians (Kak *et al*., 2001; Sujata *et al*., 2001). The reason for the discrepancy between expectations and the presented results may probably be due to the unique settings that COs practice from (Muchiri and James, 2006).

The study also reports that COs attend to a high number of patients per day. This supports the estimate that there are 15.7 COs for every 100 000 people in the country (MoH), 2005). The high workload may be due to inequities in provider distribution across regions and health facilities in the country (Luoma *et al*., 2010; MOPHS, 2009). It may be suspected that this heavy workload is related to the performance of COs. This suggestion was not supported by the regression results. COs practice in settings with defined patients catchment areas and specified job descriptions (MOPHS, 2009). This may curtail variation in patient and disease characteristics.

The reported results indicate that only a few of the surveyed COs were members of voluntary organization. Membership into voluntary organizations helps individuals to access social support, resources and knowledge. Belonging to such organizations was not

associated with performance ratings by the COs. This result is contrary to theoretical expectations. Relating with others and being involved in various informal networks and formal civic organizations offers one a opportunity to obtain necessary resources such as information (awareness and knowledge), ideas and support (Grootaert *et al.*, 2004). Individuals whose ties span important groups gives them heightened access to more and better resources (Burt 2000). The lack of relationship observed in this study may then be explained by the observation that the organizations available to COs are deficient in requisite resources. It is therefore doubtful whether a majority of the COs reap the benefits of voluntary organizations.

Most of the surveyed COs engaged in alternative income generating activities, with business and farming being the most popular. There was no relationship between engaging in alternative income generating activities and performance. In light of the modest remuneration that COs get they are forced to seek other sources of income (MOPHS, 2009). It is debatable whether engaging in other activities influences the quality of services that COs offer. It can be argued, for instance that engaging in alternative income generating activities dissuades COs from focusing on their core function of managing patients. On the other hand, it can be said that the extra income obtained makes the COs comfortable and hence they are able to manage patients effectively.

Further results present a profile of COs with limited avenues for developing their performance. Overall the surveyed COs had limited on the job training, rarely publishes and are usually involved in administrative duties. These three were statistically significant correlates of performance. Thirty eight percent of the surveyed COs had

received training within the past three years. This finding supports the observation that 87 percent of health care professionals had received no training at all in the last three years (MoH, 2006). This is probably due to the reason that in-service training is largely opportunity-driven rather than being based on the skill acquisition needs of the sector or individual health care providers. Attendance of trainings is an important source of new knowledge. It also exposes individuals to new ideas and different people. This helps to shape performance and attitudes of individuals. Therefore exposing COs to training is expected to improve their performance.

Most of the surveyed COs were heading a health facility, hospital department or health program. The curriculum for training of COs has an objective which states that candidates should be prepared for administrative duties in health facilities (GoK, 2004). A review of this curriculum shows that relative to sciences and clinical subjects, health service management is offered very low credit factors. Literature on the link between administrative duties and performance is rare. Administrative functions expose individuals to a wide variety of tasks and helps improve ones self confidence (Cambell, 2010). Clinician exposed to administration duties thus acquire abilities which they can bring their practice which helps them operate at superior levels. This explains why holding of administrative posts was found to be related to superior ratings on performance.

Regression results further indicated that having at least one publication was statistically associated with superior ratings on performance. Publication is an important component of research. Undertaking research is a major objective of the curriculum for training COs in Kenya (GoK, 2004). Research helps broaden an individual's knowledge and

competence base. It also helps individuals to appreciate and understand their environment. Research is an activity that involves a wide range of skills and competencies (Kothari, 2008; Mugenda and Mugenda, 2003). Research involves difficult and demanding activities that no one will engage in unless they very much care about some activity or unless they find a given activity being intrinsically satisfying. Success in undertaking research activities depends on bringing to bear a range of cognitive (use of knowledge to solve problems), integrative (use of available data to aid in reasoning), affective (willingness, patience and emotional awareness to use skills judiciously and humanly) and relational skills (art of communicating effectively) and calls for persistence over a long period of time. Clinicians with such skills tend to portray superior performance (Kak *et al*., 2001; Epstein and Hundert, 2002; Rethans *et al*., 2002; Carr, 2004). COs must have the skills and competencies necessary to perform their jobs according to standards in order to provide quality services. Research is an important avenue for developing skills and competencies. Literature shows that most COs do not engage in research (Karanja, 2005). This means that such COs miss out on an important activity that is associated with performance.

5.2 Conclusions

- The results demonstrate that it is feasible to use a brief patient rating questionnaire. These ratings are useful for comparing how patients judge their primary visits to COs.
- Patients assess satisfaction with services offered by COs from two main dimensions: the interpersonal skills of the COs and access to care.

- Overall, the surveyed patients rated their satisfaction with care offered by COs at below excellent. Therefore patients see room for improvement in their outpatients' visits to COs.
- The need to adjust for patients characteristics in satisfaction ratings is not supported in this study.
- The surveyed COs rated their overall performance at below best practice.
- The surveyed COs had reservations with generic skills especially in management, finance and computer skills.
- Training, holding administrative positions and having a publications are significant correlates of the performance of COs.

5.3 Recommendations

From the conclusions made above the following are recommended:

- Overall the reported results demonstrate that it is feasible to use a very brief patient rating questionnaire and that these ratings are useful for comparing how patients judge their visits to COs.

- The PSAT is a useful tool for assessing patients' satisfaction with services provided by COs..

- The PSAT scale can be a useful tool for assessing patients' satisfaction with service provision. Further research could check other aspects of reliability and validity of the questionnaire. It would be informative to check the test-retest reliability of the scale in order to check whether results hold over time. Similarly,

checks of the criterion related validity of the scale would be interesting. There is additional work that could be done to understand fully the uses and limitations of the questionnaire.

- The questionnaire can be used to look at specific areas of health care provision and/or at the service as a whole. If improvements have been made in a particular area, particular subscales can be used to assess the effects of the change. The questionnaire can be administered to outpatients as they exit COs consultation rooms.
- As Kenya moves towards health care reform as stated in Kenya Vision 2030 (GoK, 2007), measures such as the PSAT should be adopted by payers, purchasers or provider organizations to monitor the quality of medical care from the patients' point of view. The results together with other indicators of quality could be used to identify and select best health care plans and providers. Perhaps more constructively, such results could be fed back to COs to improve their performance relative to the needs and expectations of their patients.
- Efforts should be made to enhance patients' satisfaction with the services offered by COs. This would entail improving both the interpersonal skills of COs and ease of access. Training of COs in these areas is advisable.
- Broadening opportunities for self advancement for COs is highly advised. A scheme of service should be put that clearly show career advancement after obtaining further education and training.
- Further training of COs in areas such as research methodology, management, computer literacy and finance is need. Schools of medicine can also strengthen

their capacities to offer such courses to both regular students and as refresher courses.

- Effort should be focused on promoting a culture of research among COs. A starting point would be to develop a fund that COs can use to support research and obtain necessary training. It is also advisable to include research work done as a condition for promotion and recognition in the career. Finally seminars, workshops, mass media and promotional materials can be used to make COs aware of the need for research.

5.3 Suggestions for Further Research

Several issues that were left unanswered in this study open room for future research

- Certainly the quality of the care provided by clinicians, in all its aspects will have a great deal to do with patient satisfaction. This study by design did not include any objective measures of the nature of the interaction between the patient and the clinician. This will have to be determined by other studies.
- This study focused only on patients characteristics as possible correlates of satisfaction. Other factors will need to be determined by future research. For example, organizational arrangements outside the control of health care providers may influence patient ratings (Barr *et al*., 2000). Such factors will need to be taken into account when ratings are used to compare clinicians' quality of care and when designing quality improvement strategies. Future research should explore the effects of organizational policies and the behaviour of clinicians on patient ratings.

- This study focused only on COs. Similar studies should be undertaken with other cadres of health care as nurses, doctors and laboratory technicians. Such studies have the potential to highlight whether patients judge care offered by different providers differently. This has an important implication on interventions. If patients judge different providers differently, then different remedial actions are required for each cadre of providers.
- This study did not address the private health sector and the two tertiary hospitals namely Kenyatta National Hospital and Moi Referral Hospital. This is clearly a significant omission given the aims of the current national health plan. Efforts should me made to evaluate the quality of health care offered by key private sector health providers.

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APPENDICES

Appendix 1: List of Sampled Districts in Kenya and Number of COs

Province	Number of COs	Sampled Districts	Number of Sampled COs	Total (%)
Nairobi	125	Kamukunji	5	14 (11.2)
		Starehe	9	
Central	265	Nyeri	15	48 (18.1)
		Kiambu	13	
		Murang'a	20	
Rift Valley	650	Nakuru	18	76 (11.7)
		Uasin Gishu	39	
		Narok	19	
Eastern	300	Machakos	33	54 (18)
		Embu	21	
Nyanza	300	Kisumu	43	62 (20.7)
		Kisii	19	
North Eastern	75	Garissa	9	14 (18.7)
		Ijara	5	
Coast	185	Taita Taveta	16	44 (23.8)
		Mombasa	28	
Western	250	Kakamega	27	55 (22)
		Busia	28	
Total	**2150**		**367**	**367 (17)**

Appendix 2: Patient's Satisfaction Questionnaire

A. Preliminaries

Serial Number_____ Date_____

(Q.No...../District...../H. Facility...../R.A.……)

The location of this health facility can be described as:

□ Rural area □ Urban area

B. Respondent Characteristics

B-1 Gender of respondent □ Male □ Female

B-2 Year of birth_____

B-3 Marital Status □ Single □ Married □ Other, Please specify_____

B-4 Indicate the highest level of education attained

□ None □ Primary □ Secondary □ College □ University

B-5 Reason for consulting the clinical officer

_____

_____

B-6 In general my health status can be described as

□ Poor □ Fair □ Good □ Very good □ Excellent

B-7 How many visits have you made to this treatment facility in the past 12 months?

_____

B-8 My social-economic class can best be described as:

□ Low □ Middle □ High

C: Patient's Satisfaction

Please rate the following aspects of the health care you received from the clinical officer you saw.

C-1: I am satisfied with the health care that I received from the clinical officer I saw

□Strongly agree □Agree □Neither agree nor disagree □Disagree □Strongly disagree

D. Quality Assessment Tool (PSAT)

Thinking about your visit with the clinical officer you saw, how you would rate the following:

	Poor	Fair	Good	Very Good	Excellent
1. How long you waited to see the clinical officer					
2. Convenience of the location of the office					
3. Getting to the health facility					
4. Observation of patient privacy by the clinical officer					
5.Time spent with the clinical officer you saw					
6. Explanation of what was done for you					
7.Technical skills (thoroughness, carefulness, competence) of the clinical officer you saw					
8.The personal manner (courtesy, respect, sensitivity, friendliness) of the clinical officer you saw					
9. The visit overall					

Appendix 3: Clinical Officer's Performance Questionnaire

Serial Number_____ Date_____

(Q. No...../District...../H. Facility...../R.A.....)

This health facility is located in: □ Rural area □ Urban area

1. Age_____ 2. Gender □ Male □ Female

3. Marital Status □ Single □ Married □ Other, Please Specify_____

4. Administrative position held

□ None □ In charge □ Deputy In charge □ Other, please specify_____

5. List the highest level of education attained

□ Diploma □ Higher Diploma □ Bachelor's Degree □ Masters Degree and Above

6. What is your area of specialization?

□ None □ Anesthesia □ Orthopedics □ Ear, Nose and Throat □ Skin and Lung

□ Paediatrics □ Ophthalmology □ Teaching Methodology □ Reproductive Health

□ Other, please specify_____

7. How many years have you worked as a clinical officer? _____

8. How many patients/clients do you attend to on average on a typical day?_____

9. How many voluntary organizations are you a member of?

	Organizations	Frequency of Contact			
		Weekly	Monthly	Yearly	Other (Specify)
1					
2					
3					
4					

10. List all the trainings, workshops and seminars that you have attended in the last three years.

	Description of trainings, workshops or seminars	Duration of training
1		
2		
3		
4		
5		
6		
7		
8		

11. How many publications (journal articles, books, technical reports and book reviews) have you written to date_____?

Please list these publications, if any.

	Description of Publication	Date of Publication
1		
2		
3		
4		
5		
6		
7		
8		

12. Do you have an e-mail address? a) Yes b) No

13. Please list any income generating activities you are currently undertaking (such as business, farming and so on)

---

13. My knowledge of financial management can be described as:

□ Poor □ Fair □ Good □ Excellent

14. My managerial skills can be described as:

□ Poor □ Fair □ Good □ Excellent

15. How would you rate the following statements?

		Never	Rarely	Occasionally	Always
a	Frequency of involvement in community health activities				
b	How often you offer health education to your patients				
c	How often you undertake complete patient history				
d	Frequency of supervision of students on practicals in the last one year				
e	How often you undertake complete physical examination (head to toe)				
f	How often you mentor junior staff in your health institution				
g	How often do you follow recommended guidelines of medical practice from the Ministry of Health				
h	How often do you surf the internet				

Appendix 4: Recommendation to Conduct Research

JOMO KENYATTA UNIVERSITY
OF
AGRICULTURE AND TECHNOLOGY

INSTITUTE OF TROPICAL MEDICINE AND INFECTIOUS DISEASES
(ITROMID)
TEL: 067- 52181-4 Extn. 2226 FAX: 067-52030 Email: director@itromid.jkuat.ac.ke

9TH FEBRUARY, 2009

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: RECOMMENDATION FOR LAWRENCE MWANGI KARANJA

This is to confirm that Mr. Lawrence Mwangi Karanja is our PhD. Public Health student at the Institute of Tropical Medicine and Infectious Diseases (ITROMID) at JKUAT. He is currently doing thesis paper on "HEALTH CARE SERVICES OFFERED BY CLINICAL OFFICERS TO URBAN AND RURAL COMMUNITIES IN KENYA: ISSUES OF QUALITY AND COMPETENCIES".

Any assistance given to him will be highly appreciated.

Yours faithfully,

PROF. Z. NG'ANG'A
DIRECTOR,(ITROMID)

JOMO KENYATTA UNIVERSITY OF AGRICULTURE & TECHNOLOGY
DIRECTOR
09 MAR 2009
ITROMID
P.O. Box 62000 – 00200, NAIROBI

Appendix 5: Research Authorization Letter

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telegrams: "SCIENCETECH", Nairobi
Telephone: 254-020-241349, 2213102
254-020-310571, 2213123
Fax: 254-020-2213215, 318245, 318249
When replying please quote

P. O. Box 30623-00100
NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref: **NCST/5/002/R/1002**

Date: **27th October, 2009**

Lawrence Mwangi Karanja
Jomo Kenyatta University of
Agriculture and Technology
Po Box 62000-00200
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Healthcare Services Offered By Clinical Officers to Urban and Rural Communities in Kenya: Issues of Quality and Competencies"*** I am pleased to inform you that you have been authorized to undertake your research in ***All Province*** for a period ending ***31st December 2010.***

You are advised to report to ***the Provincial Commissioners, the Provincial Public Health Officers and Provincial Medical Officers of Health of the respective Provinces*** before embarking on your research project.

Upon completion of your research project, you are expected to submit two copies of your research report/thesis to our office.

PROF. S. A. ABDULRAZAK Ph.D, MBS
SECRETARY

Appendix 6: Clearance to Conduct Research

PAGE 2

THIS IS TO CERTIFY THAT:

Prof./Dr./Mr./Mrs./Miss LAWRENCE MWANGI KARANJA

of (Address) JKUAT PO BOX 62000-00200 NAIROBI

has been permitted to conduct research in

.....Location,

ALL .....District,

ALL .....Province,

on the topic HEALTHCARE SERVICES OFFERED BY CLINICAL OFFICERS TO URBAN AND RURAL COMMUNITIES IN KENYA: ISSUES OF QUALITY AND COMPETENCIES

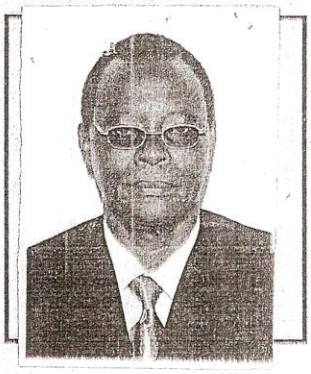
for a period ending 31ST DECEMBER 20 10

PAGE 3

Research Permit No NCST/5/002/R/1002

Date of issue 27.10.2009

Fee received SHS 1000



Applicant's Signature

Secretary National Council for Science and Technology

Appendix 7: Permission Letter for Western Province

Lawrence M. Karanja (MPH)
P.O. Box 2695,
Nakuru.
Cellphone:0720-372980 /0720532889
22nd Nov. 2009

The Provincial Medical Officer of Health,
Western Province,
P.O Box ,
Kakamega.

Dear Sir/Madam,

REF: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

Am a student of Jomo Kenyatta University of Agriculture and Technology Undertaking a PHD in Public Health under Institute of Tropical Medicine and Infectious Diseases (INTROMID). Currently I am writing my thesis entitled "HEALTH CARE SERVICES OFFERED BY CLINICAL OFFICERS TO URBAN AND RURAL COMMUNITIES IN KENYA– ISSUES OF QUALITY AND COMPETENCIES."

The study is to be done in all the eight Provinces of Kenya; and through the adopted sampling technique, two Districts from Western Province have been selected for study. They include:-

a) Kakamega
b) Busia

The study is a survey of Clinical Officers and an exit interview for their patients in order to determine their satisfaction with services offered by Clinical Officers. The major aim of this study is to document the quality of services offered by Clinical Officers in the country. Results of this study will help improve Clinical Medicine and Surgery training and give an insight to stake holders including the Government which is their main employer, the NGOs, Faith-based organizations, and Clinical Officers Council among others.

NB: No specimen or samples shall requested or required.
Attached please find a synopsis of the study and a copy of the letter of approval from the University.

Your kind approval will be highly appreciated and will go along way in improving service delivery in the whole Republic and beyond.
Thank you,

Yours truly,

L. M. Karanja
Researcher

Appendix 8: Permission Letter for Coast Province

Date: 19/2/10

Lawrence M. Karanja (MPH)
P.O. Box 9695,
Nakuru.
Cellphone:0720372980

22^{nd} Oct. 2009

RECEIVED
DATE 14/04/2010
OK. CO [illegible]
MOI DISTRICT HOSPITAL

The Provincial Medical Officer of Health,
Coast Province,
P.O Box ,
Mombasa.

22.02.10
Dr Mandalya
Plse advise.
PROVINCIAL DIRECTOR OF MEDICAL SERVICES
COAST PROVINCE

Dear Sir/Madam,

REF: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

Am a student of Jomo Kenyatta University of Agriculture and Technology Undertaking a PHD in Public Health under Institute of Tropical Medicine and Infectious Diseases (INTROMID). Currently I am writing my thesis entitled "HEALTH CARE SERVICES OFFERED BY CLINICAL OFFICERS TO URBAN AND RURAL COMMUNITIES IN KENYA– ISSUES OF QUALITY AND COMPETENCIES."

The study is to be done in all the eight Provinces of Kenya; and through the adopted sampling technique, three Districts from Coast Province have been selected for study. They include:-

a) Mombasa
b) Taita Taveta
c) Kilifi

14/4/10
Permission granted to address Moi hospital clinician

The study is a survey of Clinical Officers and an exit interview for their patients in order to determine their satisfaction with services offered by Clinical Officers. The major aim of this study is to document the quality of services offered by Clinical Officers in the country. Results of this study will help improve Clinical Medicine and Surgery training and give an insight to stake holders including the Government which is their main employer, the NGOs, Faith-based organizations, and Clinical Officers Council among others.

NB: No specimen or samples shall requested or required.

Your kind approval will be highly appreciated and will go along way in improving service delivery in the whole Republic and beyond.
Thank you,

08.03.10.
Recommended & Approved.
Med. Supts & I/c of Dept. Plse facilitate the Researcher(s).

Yours truly,

L. M. Karanja
Researcher

PROVINCIAL DIRECTOR OF MEDICAL SERVICES
COAST PROVINCE

* Attached please find a synopsis of the study and a copy of ~~the a letter~~ of letter from the University.

Appendix 9: Permission Letter for Central Province

Lawrence M. Karanja (MPH)
P.O. Box 2695,
Nakuru.
Cellphone:0720-372980
2nd Oct. 2009

PROVINCIAL ... SERVICES
... OCT 2009
110, NYERI

The Provincial Medical Officer of Health,
Central Province,
P.O Box 110,
Nyeri.

Dear Sir/Madam,

REF: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

Am a student of Jomo Kenyatta University of Agriculture and Technology Undertaking a PHD in Public Health under Institute of Tropical Medicine and Infectious Diseases (INTROMID). Currently I am writing my thesis entitled "HEALTH CARE SERVICES OFFERED BY CLINICAL OFFICERS TO URBAN AND RURAL COMMUNITIES IN KENYA– ISSUES OF QUALITY AND COMPETENCIES."

The study is to be done in all the eight Provinces of Kenya; and through the adopted sampling technique, three Districts from Central Province have been selected for study. They include:-

a) Nyeri Central
b) Muran'ga and
c) Thika

The study is a survey of Clinical Officers and an exit interview for their patients in order to determine their satisfaction with services offered by Clinical Officers. The major aim of this study is to document the quality of services offered by Clinical Officers in the country. Results of this study will help improve Clinical Medicine and Surgery training and give an insight to stake holders including the Government which is their main employer, the NGOs, Faith-based organizations, and Clinical Officers Council among others.

NB: No specimen or samples shall requested or required.
Attached please find a synopsis of the study and a copy of the letter of approval from the University.

Your kind approval will be highly appreciated and will go along way in improving service delivery in the whole Republic and beyond.
Thank you,

Yours truly,

L. M. Karanja
Researcher

22/10/09
To GoK/FBO/CBO
Please accord the bearer
Co-...

DISTRICT CLINICAL OFFICER
MURANG'A

Approved
To liase with DMOH and Hospital in Charge for compliance

Medical Officer of Health
Murang'a

PROVINCIAL DIRECTOR OF MEDICAL SERVICES
P. O. Box 110, NYERI

Appendix 10: Permission Letter for Nyanza Province

MINISTRY OF PUBLIC HEALTH & SANITATION

Telegrams: "PROV.(MED)"
Telephone: Kisumu 254-057 2020105
Fax: Kisumu 254-057-2023176
E mail: pmonyanza@gmail.com
When replying please quote

PROVINCIAL MEDICAL HEADQUARTERS
NYANZA PROVINCE
P.O. BOX 721
KISUMU

Ref: ST.16/VOL.XI/(89)

22nd December, 2009

To all RCO's.
Please assist the bearer of this note.
DISTRICT COMMUNITY OFFICER
KISII DISTRICT

Lawrence Mwangi Karanja
Jomo Kenyatta University of
Agriculture & Technology
P. O. Box 62000-00200
NAIROBI

Dear Sir,

Re: Study on Health Care Services offered by Clinical Officers to Urban and Rural Communities in Kenya – "Issues of Quality and Competencies".

Following you application for authority to conduct a study on the subject matter dated 27th October, 2009 refers. I am pleased to inform you that you have been authorised to undertake your research in the selected districts in Nyanza Province.

You are expected to share the outcome of your findings with the respective District Health Management Teams and to submit a report on the same to the office of the undersigned.

By a copy of this letter the respective District Medical Officers of Health are asked to offer their support where necessary for the study to be carried out successfully.

Dr. Kioko Jackson K.
Provincial Director of Public Health and Sanitation
NYANZA

Cc: The Medical Officers of Health:-

- Kisumu East
- Kisii

Appendix 11: Permission Letter for Rift Valley Province

MINISTRY OF MEDICAL SERVICES

Telegrams "PROVMED"Nakuru
Tele:Nakuru 2216710 Fax 2210350
When replying please quote

PROV. DIRECTOR OF MEDICAL SERVICES
RIFT VALLEY PROVINCE
P.O. BOX 2060
NAKURU

Ref No. B.13/2009

5th October 2009

The Medical Superintendent

Medical Officer Incharge

- Molo District Hospital
- Naivasha District Hospital
- Gilgil Sub District Hospital
- Bahati District Hospital
- Uasin Gishu District Hospital
- Kitale District Hospital

RE:- RESEARCH ON HEALTH CARE SERVICES OFFERED BY RCO

Mr. Lawrence Mwangi Karanja is a PHD student at Jomo Kenyatta University of Agriculture & Technology. He is to interview our staff as part of his PHD thesis at the college.

Please accord him all necessary assistance to carry out his research.

DR. B. OSORE
PROVINCIAL DIRECTOR OF MEDICAL SERVICES
RIFT VALLEY

Appendix 12: Informed Consent Form

My name is Karanja Lawrence Mwangi. I am a Doctor of Philosophy student at ITROMID, Jomo Kenyatta University of Agriculture and Technology. I am conducting a research for my thesis and I seek your consent to participate in the study.

Project title: *Quality of Health Care Services Offered by Clinical Officers in Kenya*

Patient's name---------- Age ---------- Sex -------

Clinic Number---------- Study Number----------

Purpose of the study: To establish the quality of health care services offered by clinical officers in Kenya.

Procedure to be followed: You will be asked several questions about your visit to hospital. The responses will be recorded in a questionnaire. Your responses will be combined with those of other respondents and analyzed in a computer in order to identify patterns.

Risks involved: The questions asked are not invasive, do not invade on your privacy and do not pose any pain or harm to you. The questions do not have a right or wrong answer. Most of them require you to state your opinions on the listed statements.

Benefits: Results obtained from this study will be used to improve quality of care to patients in Kenya and improve the training of clinical officers.

Confidentiality of the records: Personal information gathered from you will be encoded for purposes of confidentiality and your name will not be identified from these records. Only the code numbers will be used in reports and publications.

Basis for participation: It is important for you to know that you have the choice to decline from participating in this study. Should you have any question or clarification required, you can ask the principal investigator, Karanja Lawrence Mwangi of cell phone 0720 372 980.

Consent: I have read the above information and was given an opportunity to ask questions, which were answered. I consent to take part in the study. I fully understand there are no risks associated with the questions posed by the study.

Signature---------- (Respondent) Date ----------

I, the undersigned, have fully explained the relevant details of this study to the respondent.

Signature---------- (Investigator) Date----------