

**INFLUENCE OF CONTINUOUS PROFESSIONAL
DEVELOPMENT ON DOCTORS' PERFORMANCE IN
KENYA:A CASE OF NAIROBI COUNTY**

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**Research Report submitted in Partial Fulfilment for the Requirements of the Award of
a Degree of Master of Arts in Project Planning and Management at
The University of Nairobi**

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DECLARATION

This Research Project is my original work and has not been submitted in any other University for the award of any degree.

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DEDICATION

This study is dedicated with appreciation to all doctors in Kenya whose participation in Continuing Professional Development is geared towards improving the quality of healthcare provided to the patients, clientele and communities they serve.

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TABLE OF CONTENT

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENT	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
ABBREVIATIONS AND ACRONYMS	x
ABSTRACT	xi
CHAPTER ONE: INTRODUCTION	1
1.1 Background of the Study	1
1.2 Statement of the Problem	4
1.3 Purpose of the Study.....	6
1.4 Objectives of the Study	6
1.5 Research Questions	6
1.6 Research Hypothesis	7
1.7 Significance of the Study.....	7
1.8 Delimitation of the Study	8
1.9 Limitations of the Study	8
1.10 Assumptions of the Study	8
1.11 Definitions of Significant Terms used in the Study	8
1.12 Organization of the Study	11
CHAPTER TWO: LITERATURE REVIEW.....	12
2.1 Introduction.....	12
2.2 Formal Learning and Doctors' Performance	12
2.3 Mentorship Program and Doctors' Performance	16
2.4 Implementation of Continuous Professional Development Cycle and Doctors' Performance	20
2.4.1 Appraisal or Review Stage.....	20
2.4.2 Planning (Personal Development Plan)Stage.....	21
2.4.3 Action Stage	22
2.4.4 Reflection Stage.....	22

2.4.5 Documentation Stage	23
2.5 Theoretical Framework	23
2.6 Conceptual Framework	24
2.7 Knowledge gaps.....	26
2.8 Summary of the Literature Review	28
CHAPTER THREE: RESEARCH METHODOLOGY	29
3.1 Introduction.....	29
3.2 Research Design.....	29
3.3 Target Population	29
3.3.1 Sample Size	30
3.4 Sampling Procedure	30
3.5 Research Instruments	31
3.5.1 Pilot Testing	32
3.5.2 Validity of Research Instruments	32
3.5.3 Reliability of Research Instruments.....	32
3.6 Data Collection Procedures	33
3.7 Data Analysis Techniques	34
3.8 Operational Definition of Variables.....	34
3.9 Ethical Issues	35
CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTEPRETATION	36
4.1 Introduction.....	36
4.2 Questionnaire Response Rate	36
4.3 Demographic Characteristics of Respondents	36
4.3.1 Distribution of Respondents by Age.....	36
4.3.2 Distribution of Respondents by Gender.....	37
4.3.3 Distribution of Respondents by Years of Experience.....	37
4.4 CPD Formal Learning and Doctor’s Performance.....	37
4.4.1 Continuous Professional Development Activities.....	38
4.4.2 Learning Methods and Doctors’ Performance	38
4.4.3 The Learning Environments that the Respondents Learn Best.....	39
4.4.4Additional skills that Should Form Part of CPD Activities	39
4.4.5 Hypothesis Testing for Formal Learning	40

4.5 CPD Mentorship Program and Doctor’s Performance.....	40
4.5.1 Relevance of Mentorship to Doctors’ Performance	40
4.5.2 Role Modelling and Doctors Performance.....	41
4.5.3 Opinion of the Respondents on Attributes of an Effective Role Model.....	42
4.5.4 Hypothesis Testing for Mentorship Programs	42
4.6 Implementation of CPD Cycle and Doctors’ Performance	43
4.6.1 Implementation of Continuous Professional Development Cycle	43
4.6.2 Hypothesis Testing for Implementation of CPD Cycle	45
4.7 Continuous Professional Development and Doctors’ Performance.....	45
4.8 Multiple Regression Analysis	46
CHAPTER FIVE: SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS.....	48
5.1 Introduction.....	48
5.2 Summary of Findings	48
5.2.1 Formal Learning and Doctors’ Performance.....	48
5.2.2. Mentorship program and Doctors’ Performance.....	49
5.2.3 Implementation of Continuous Professional Development Cycle and Doctors’ Performance.....	50
5.2.4 Continuous Professional Development and Doctors’ Performance	51
5.3 Discussion.....	51
5.3.1 Formal Learning and Doctors’ Performance	51
5.3.2. Mentorship program and Doctors’ Performance	52
5.3.3 Implementation of Continuous Professional Development Cycle and Doctors’ Performance	53
5.4 Conclusion of the Study	54
5.5 Recommendations of the Study	56
5.6 Suggestion for Further Studies.....	57
REFERENCES.....	58
APPENDIX I: LETTER OF TRANSMITTAL OF DATA COLLECTION INSTRUMENTS.....	62
APPENDIX II: QUESTIONNAIRE	63
APPENDIX III: INTRODUCTION LETTER FROM THE UNIVERSITY	68
APPENDIX IV: RESEARCH PERMIT	69

LIST OF TABLES

Table 2.1: Summary of Knowledge gaps.....	27
Table 3.1: Target Population	29
Table 3.2: Sampling Frame	31
Table 3.3: Operational definition of variables.....	35
Table 4.1: Distribution of Respondents by Age	36
Table 4.2: Distribution of Respondents by Gender	37
Table 4.3: Distribution of Respondents by Years of Experience	37
Table 4.4: Participation in Continuous Professional Development Activities	38
Table 4.5: Learning Methods.....	38
Table 4.6: Learning Environments	39
Table 4.7: Additional Skills that should form part of CPD apart from Continuous Medical Education	40
Table 4.8: Relevance of mentorship to Doctor’s Performance	41
Table 4.9: Role Modelling.....	41
Table 4.10: Attributes of an effective role model.....	42
Table 4.11: Implementation of CPD Cycle	43
Table 4.12: Reasons for Implementation of Activities Stage in the CPD Cycle.....	43
Table 4.13: Importance of Evaluation and Documentation	44
Table 4.14: Awareness of MPDB Online Platform of Documentation by the Respondents ..	44
Table 4.15: Continuous Professional Development and Doctors Performance	45
Table 4.16: Model Summary	46
Table 4.17: Coefficient of Regression	46

LIST OF FIGURES

Figure 1. Conceptual Framework	25
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ABBREVIATIONS AND ACRONYMS

CPD:	Continuous Professional Development
CME:	Continuous Medical Education
CMHCN:	Collaborative Mental Healthcare Network
DAA:	Dieticians Association of Australia
DH:	Department of Health, UK
EURACT:	European Academy of Teachers in General Practice
EQUIP:	European working party on Quality Assurance in Family Practice
GMC:	General Medical Council
GDC:	General Dental Council
HPCSC:	Health Professionals Council and Social Care
HCPC:	Health Care Professions Council
HPCSA:	Health Professionals Council of South Africa
HCO:	Health Care Organizations
IOM:	Institute of Medicine
MDG:	Millennium Development Goals
MOH:	Ministry of Health
NHS:	National Health Service, UK
PDP:	Personal Development Plan
QMR:	Quality Measurement
SPSS	Statistical Package for Social Science
WHO:	World Health Organization
WFME:	World Federation of Medical Education

ABSTRACT

Continuous Professional Development within the medical fraternity is the critical on-job training phenomenon inculcated in professional career progression so as to enhance efficiency, effectiveness and competence in healthcare service delivery. Many studies have shown that the acquisition of new knowledge and skills does not necessarily mean a change in performance and new knowledge is not always directly applied to practice. The purpose of this study therefore was to establish the influence of Continuous Professional Development on doctors' performance. The key objectives of this study were to determine the influence of formal learning program, mentorship program and implementation of Continuous Professional Development Cycle as the independent variables on doctors' performance as the dependent variable. The phenomenon that studied the influence of formal learning, mentorship program and implementation of CPD Cycle on doctors' performance was tested through null hypothesis H_{01} , H_{02} and H_{03} . This study was guided by Knowles' Adult Learning Theory proposed by Malcom Knowles in 1950 which discusses on the principles of adult learning. The research design of this study was descriptive survey research design. The target population of this study was 200 doctors practising in Nairobi County. The sampling procedure used was the stratified random sampling which was used to sample the respondents from Nairobi County stratifying them into public medical and dental officers, private practitioners and specialists. The sample size of this study was determined following Patton (1990) method of sample calculation. A self-administered structured questionnaire was used to collect data via informed consent from a sample of 65 doctors: 30 public dental and medical officers, 20 private practitioners and 15 specialists. The quantitative data in this research was analyzed by descriptive statistics using statistical package for social sciences SPSS (V.17.0). Quantitative data was analysed using descriptive statistics including frequency distribution, percentages, measures of central tendency and standard deviations. The specific effect of independent variables vis-à-vis the dependent variable was tested through multivariate analysis. The test of hypotheses to determine the level of significance of an independent variable against the dependent variable was tested through regression analysis. Content validity was used to ensure validity of the research instruments. Split half method was used to ensure that the research instrument is reliable. The reliability coefficient derived was 0.857 which was more than 0.7, therefore the instrument was deemed reliable. The research instruments were piloted. The study found and concluded that CPD formal learning programs had the highest influence on doctors' performance followed by mentorship program while implementation of Continuous Professional Development cycle had the lowest influence on doctors' performance. Through multiple regression analysis, at 95% confidence interval (0.05 level of significance), formal learning (with t statistic p value $<0.001 < 0.05$) was highly significant, mentorship program (with t statistic p value $<0.004 < 0.05$) was significant while implementation of CPD cycle (with t statistic p value $p = 0.485 > 0.05$) had no significant influence on doctors' performance. This study therefore rejected null hypotheses H_{01} and H_{02} and accepted null hypothesis H_{03} hence alternate hypotheses H_1 and H_2 were accepted while alternate hypothesis H_3 was rejected.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The right of patients and the general public to expect that doctors remain up to date and are professionally competent is an overriding factor in health care provision. The ultimate aim of Continuous Professional Development is to contribute to a high quality patient-care and enhance efficiency in service delivery. Poor performance is seen as a result of health staff not being sufficient in numbers, or not providing care according to standards, and not being responsive to the needs of the community and patients (Dieleman & Harnjeimer, 2006).

Global and local health regulatory bodies have given priority to Continuous Professional Development in different ways. In the United Kingdom, General Medical Council defined CPD to be formal and or informal learning outside the undergraduate education or post graduate training which helps one to maintain and improve on performance. It cut across all areas of their professional practice; development of one's knowledge, skills, attitudes and behaviours. The Medical Practitioners and Dentists Board defined Continuous Professional Development as a training that leads to broadening of knowledge, skills and enhancement of personal qualities related to continuous improvement in the performance of professional duties. It is a quality assurance mechanism instituted to ensure that healthcare professionals maintain their fitness to practice (Medical Practitioners & Dentist Board, 2014).

In Switzerland, the increasing speed of innovation in the realm of medicine required doctors to be prepared for lifelong learning and continuous, autonomous professional development (World Health Organization, 2010). An integral part of being a modern healthcare professional is the obligation to maintain competence through lifelong career developmental activities that is enhanced through learning, mentorship and change in personal and professional practice through implementation of Continuous Professional Development. However, the learning achieved through Continuous Professional Development is still controversial since it cannot be assumed that the mere attendance of an activity results in a transfer of knowledge and in turn, changes in practice (Bello & Lawson 2013).

In Austria, France, and Italy there are few or no legal enforcement mechanisms towards compliance to Continuous Professional Development. In Austria, it was noted that physicians were encouraged to comply with requirements because the likelihood of being subject to litigation increases without such compliance. Rather than implementing mandatory

participation, Belgium and Norway encourage participation through financial incentives. In Belgium, non-hospital physicians receive yearly bonus payments and can ask higher fees per patient when they accumulate 20 credits of continuous medical education per year. General practitioners in Norway have no continuous professional development requirements, but specialists lose their specialization and 20% higher fee if they fail to participate in specialty-specific courses (Garattiniet *al.*, 2010; Giriet *al.*).

In the New Zealand, acceptable performance means practising to a standard acceptable to reasonable peers and to the community: making safe judgements, demonstrating the level of skill and knowledge required for safe practice, behaving appropriately and acting in a way that does not adversely affect patient safety, within all domains of medical practice (Medical Council of New Zealand, 2014).

In India, Continuous Professional Development is a broader concept for continuing development of multifaceted competencies inherent in medical practice including medical, managerial, social and personal subjects which are needed for high quality professional performance in modern healthcare delivery system. The credibility of the medical profession is based on the willingness of each professional to embrace new skills, knowledge and experience (Khan, 2010).

In Ireland, it was noted that Continuous Professional Development is only effective as long as change in practice occurs. In addition, to overt practices, more subtle benefits occur such as greater assertiveness and autonomy, better competence and exchange of ideas. On the contrary, it was supported that mandatory CPD takes away the practitioners' choice to decide their own educational needs and it is therefore a direct conflict with the adult learning concepts of self – direction and self- motivation. In addition, mandatory professional development may be seen as an invasion of the practitioner autonomy.

Across Africa, countries are at different levels of developing Continuous Professional Development systems. In some countries, regulatory bodies require specific number of professional development credits in order to renew their license (Ndege, 2006). In most African Countries, however there are no systematic approaches to regulating CPD programs, and documentation of continuous professional development completion is not required for re-licensure (Giri *et. al.*, 2012).

In South Africa, Continuous Professional Development is regarded as an international trend, crucial and necessary to ensure that healthcare professionals remain current and competent. However, certification of qualification undertaken as a healthcare professional does not guarantee that proficiency will be maintained throughout the professional life. Further, the acquisition of new skills and new knowledge for any field is advancing constantly and the new knowledge may not be easily communicated to healthcare professionals. Therefore, healthcare professionals need to commit themselves to lifelong CPD program is important to protect the public by ensuring the promotion of health of the society (Health Professional Council of South Africa, 2008). It is acknowledged that despite several studies that recommend or criticise the benefits of continuous professional development, it remains accepted as a measure of practitioner competence (Martin *et al.*, 2008).

In Ghana, a study carried out to establish the attitudes and barriers towards participation in Continuous Professional Development by physiotherapists reported that overall continuous professional development improves confidence among health professionals thereby enabling them to establish rewarding relationships among themselves and their clients. However, the study noted that majority of the studies suggested non-specific improvements which were based on generalized assessments. In conclusion, it was found that physiotherapists demonstrated good attitudes towards Continuous Professional Development but they lacked leadership direction and within their working environments there was non-availability of relevant courses in the arears of practice (Bello & Lawson, 2013).

In Uganda, it was noted that materials that were often high technical but not absorbed or translated into health worker actions were of limited value to the health system. Therefore, the purpose and mission of continuous professional development and expected outcomes should be clearly articulated, taking into account the national health profile, priorities and workforce distribution and capacity. It was further proposed that any commercial sponsorship of continuous professional development activities and any commercial conflict should be disclosed during the planning of the activities and the participants should be notified of these conflicts. Further, it was proposed that formal continuous professional development program evaluation should be introduced early in the process so that the baseline against which to measure effectiveness in meeting identified needs and make improvements are based on feedback. Again, that educational format used should be most effective and efficient method for meeting learning objectives (Uganda Health Professional Council, 2008).

In Kenya, Continuous Professional Development for medical and dental practitioners is mandatory under the Laws of Kenya, CAP 253 and they have a responsibility to participate in continuous professional development in order to provide quality and optimum healthcare to their patients. Individual and collective commitment and compliance to the regulation requirements by practitioners and providers significantly helps to reduce cases of professional malpractice, build public confidence in the healthcare system and enhance the standing of the profession. Mentoring and personalization personal and professional practice by adhering to the Continuous Professional Development Cycle contributes to ensure that the professional development gained is sustainable and efficient to meet the personal and professional needs of doctors (Magoha, 2014).

Knowledge, information and skills acquired by healthcare professionals as students and interns become obsolete: not sufficient to sustain competence and performance over a doctor's career (Gitonga & Muriuki, 2014). Healthcare professionals are expected effectively engage in lifelong learning strategies in rapidly changing healthcare system. Constant change disease patterns, management approaches and advances in technology (Magoha, 2014) have made sure that doctors remain sufficiently informed. Continuous Professional Development therefore enables medical practitioners to update their formal education in order to reflect changes in practice, in the needs of patients' service and the society's expectations in the way doctors work (General Medical Council, 2012).

In addition, more Kenyans are becoming aware of their rights through the patient rights charter and medical litigation awareness. There is also an increased scrutiny of public and professional complaints that emerge from medical malpractice, unsafe delivery of healthcare services and frequency of adverse negligence (Gitonga & Muriuki, 2014). MPDB's role in Kenya is to ensure that doctors performance reflects through their practice by holding doctors responsible when their practice is in question or when they engage in malpractice (MPDB Compliance Report, 2013).

1.2 Statement of the Problem

Although continuous professional development programs are recognized globally to improve job performance, quality of care, organizational performance and service delivery across health sectors as explained in various studies (Starke & Wade 2005; General Medical Council, 2012; Khan 2010; Gitonga & Muriuki, 2014; World Health Organization, 2010 and World Federation Medical Education, 2003), no substantive study has been carried out in

Kenya to critically analyse the elements of continuous professional development program and how it contributes to doctor's performance (Muriuki & Gitonga, 2014).

The existence of guidelines does not guarantee compliance as evidenced in the Medical Practitioners and Dentists Board compliance report. The acquisition of new knowledge and skills does not necessarily mean a change in performance and new knowledge was not always directly applied to practice (World Federation Medical Education, 2003). Despite the increasing relevance of continuous professional development and implementation of revalidation in Kenya, there is still a rise in the number of reported malpractice cases (MPDB Compliance Report, 2013).

The available assessment tools currently used in Kenya today mainly focus on compliance to mandatory requirements rather than focussing on how effective the knowledge and skills gained will be used to impact on healthcare by meeting the doctors' personal and professional needs in clinical and non-clinical practise. Besides, there is no clear indication on how doctors implement the Continuous Professional Development cycle during their program (MPDB Compliance Report, 2013).

A wealth of literature exists on the factors influencing doctors' performance in the Kenya as was highlighted by numerous authors. (Lundstorm, Pugliese, Bartley, Cox & Guther; Dieleman & Harnmeijer, 2006); undertook substantial studies on organizational, work-related and environmental factors on doctor's performance. (Wanjau, Muiruri & Ayodo, 2012) studied the impact of technological, communication and financial factors on doctor's performance; (Dieleman & Harnmeijer, 2006) studied influence of personal and life-style related factors on performance management systems, leadership and motivation by doctors. While (Ndeti, Khasakhala & Omolo, 2008) studied the impact of shortage and maldistribution of health workers on HIV and AIDs. (Dieleman & Harnmeijer, 2006) undertook a detailed study on the implications of formal and continuous educational factors on service efficiency by doctors.

This study however focused on continuous professional development with a view of establishing how elements of formal learning, mentorship and implementation of continuous professional development cycle influenced doctors' performance in Kenya. Continuous Professional Development cycle comprises of appraisal, planning, action, reflection or evaluation and documentation of learning activities. "A well-educated workforce is critical to

the discovery and application of health care practices to prevent disease, promote well-being, and increase the quality of life” (Institute of Medicine, 2010). Whereas numerous actions have been put in place to deal with organizational, environmental, governance and financial factors that influence doctor’s performance, these efforts typically overlook the critical piece of improving quality; developing and maintaining a reliable, properly trained health professional workforce (Institute of Medicine, 2009). By focusing on the formal learning, mentorship and implementation of Continuous Professional Development Cycle, this study bridged the gap that was identified.

1.3 Purpose of the Study

This purpose of this study was to establish the influence of continuous professional development on doctors’ performance in Kenya.

1.4 Objectives of the Study

The study was guided by the following objectives:-

- i. To establish how formal learning programs in continuous professional development influences doctors’ performance.
- ii. To ascertain how mentoring programs in continuous professional development influences doctor’s performance.
- iii. To assess the extent to which implementation of Continuous Professional Development Cycle influence doctor’s performance.

1.5 Research Questions

The study was guided by the following research questions:-

- i. How does formal learning program in continuous professional development influence doctors’ performance?
- ii. How does mentoring program in continuous professional development influence doctor’s performance?
- iii. To what extent does the implementation of Continuous Professional Development Cycle influence doctor’s performance?

1.6 Research Hypothesis

This study sought to test the following null hypotheses at a significance level of 95%:-

- i. **Ho₁**: Formal learning in continuous professional development has no significant influence on doctors' performance
- ii. **Ho₂**: Mentoring programs in continuous professional development has no significant influence on doctors' performance.
- iii. **Ho₃**: Implementation of Continuous Professional Development Cycle has no significant influence on doctors' performance.

1.7 Significance of the Study

It is hoped that this study would add knowledge to the effective practice of medicine and to help doctors reflect on how their learning and development improves the quality of care to patients. As a result, it is hoped that the relevant stakeholders and health regulatory bodies in Kenya would be able to develop assessment tools that would enhance the identification and achievement of personal, professional and public changing needs.

It is hoped that the findings in this study would be a key reference material in libraries around the world. Also that the information generated would facilitate the growth of the medical profession and help consultants, doctors and all medical practitioners would have access to this information. Again, it is hoped that this study would necessitate the increase of awareness on the importance of continuous professional development which would ensure medical professionals engage in self-regulation frontiers. This study was also geared towards encouraging doctors to engage in mentoring relationships with their seniors or juniors in order to assist one another develop and grow in the profession as change in knowledge and practice is the most constant aspect in medicine.

Through this study, it is hoped that the government through the Ministry of Health, the Health Regulatory Bodies, Policy Makers and relevant Stakeholders would be able to develop and review policies, systems and measures that would promote effective use of the CPD Process and provision of continuous professional development in line with Millennium Development Goals (MDG) 4 and 5, Vision 2030 Social Pillar and Kenya Constitution 2010 Chapter 4 Article 43 1(a). These studies had been carried out in Countries. Therefore, it is

hoped that this study would be of use in comparison of the previous studies to check on validity of their findings with respect to a different environment.

1.8 Delimitation of the Study

This study was delimited to variables which were formal learning, mentorship and implementation of continuous professional development cycle against doctors' performance. The study was again delimited to doctors practising in Nairobi County and those who regularly undertake CPD because Nairobi County is one of the counties in Kenya where there is a high concentration of doctors and a lot of continuous professional learning are carried out in comparison to the other counties. The study was also delimited to medical and dental officers in major public hospitals as well as medical private practitioners and specialists.

1.9 Limitations of the Study

This study faced the following limitations: It was difficult to get the doctors to answer questionnaires since they are busy people. Since most of the doctors targeted were senior doctors and consultants, getting them to sit down to answer a questionnaire was almost impossible, however, the researcher booked appointments early, remained persistent and used all available professional mechanisms to ensure the targeted doctors filled up the questionnaire and offered sufficient information.

The second major limitation was finances. Since this study was extensive and involved high travelling and communication, the exercise utilized high amounts of money. To circumvent this dilemma and ensure it did not impact on data collection, the researcher sourced for funds through a Sacco loan to finance the research budget and ensured that the research did not exceed the budget.

1.10 Assumptions of the Study

The researcher worked on an assumption that doctors would be accessible and would avail sometime to fill in the questionnaires faithfully and would return them within the agreed time span. It was also assumed that the finances would be available in time so that the study would be effectively carried out in the stipulated timeframe.

1.11 Definitions of Significant Terms used in the Study

Continuous Professional Development: Refers to the maintenance, broadening and enhancement of the knowledge, skill, expertise and competence of professionals throughout

their carriers according to a plan formulated with regard to the needs of the profession or employer so as to retain their capacity to practice safely, effectively and legally.

Formal Learning Programs:

Comprise of activities like tertiary courses, accredited structured courses, clinical training programs, conferences, forums and seminars, research. Are courses leading to degree, higher degree, on-line learning, in-service education and presentations among others.

Mentoring Program:

Refers to life long mutual and reciprocal relationship or partnership which involves a more experienced person (mentor) who shares the knowledge and experience with someone who is less experienced (mentee) in a relationship based on mutual trust.

Continuous Professional Development Cycle: Refers to a process that comprises of Self-appraisal, Planning (Personal Development Plan), Action or implementation, Reflection or Evaluation and Documentation of continuous professional development activities.

Acceptable Doctors' Performance:

Is practising to a standard that is acceptable to reasonable peers and to the community: making safe judgements, demonstrating the level of skill and knowledge required for safe medical practice.

Medical Malpractice:

An act or omission of a health-care provider which the treatment provided falls below the

accepted standards of practice and causes injury or death to the patient example misdiagnosis, wrong treatment, emergency room errors, surgical, dental errors, patient abandonment, lack of informed consent and poor referral etc.

Continuous Medical Education:

Continuing education in knowledge and skill of medical practice

Learning Methods:

Ways in which knowledge and skills are disseminated or transmitted from the trainer to the learner

Learning Environment:

a place or setting in which acquisition of knowledge and information is carried out for example immediate clinical environment

Shared Learning:

engagement in collaborative and participative exchange of knowledge and skills

Role Modelling:

observational learning where the learner emulates some particular characteristics or behaviour from another party

Appraisal:

the assessment of learning need that can be addressed by either self-assessment of performance and peer-reviewed

Personal Development Plan:

portfolio for work-based learning which documents the key objectives with actions to achieve

Action:

learning by participation in professional body working groups or attending training courses

Reflection:

analysis to determine whether doctors can address what they learned, how their work will improve

Documentation: creation of a personal learning portfolio which doctors submit to their regulators

1.12 Organization of the Study

This report was organized into five chapters. Chapter one discusses the background of the study, statement of the problem, purpose of the study, research objectives and questions, research hypotheses, significance of the study, delimitation, limitations and assumptions of the study and definitions of significant terms in the study.

Chapter two deals with literature review, theoretical and conceptual framework and a summary of knowledge gaps.

Chapter three describes the study methodology, research design, target population, validity and reliability of research instruments, data collection procedures and operational definition of variables.

Chapter four discusses the interpretation and presentation of the findings. This chapter presents analysis of the data and also provides the major findings and results of the study.

Chapter five presents the discussion of key data findings, conclusion drawn from the findings highlighted and recommendation made there-to. The conclusions and recommendations drawn were focused on addressing the objective of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This Chapter systematically examined the research work of other global and local researchers in order to find out what had been written on how formal learning, mentoring and implementation of continuous professional development cycle influences doctors' performance. Empirical literature examined were the works done by twenty scholars. The chapter also focused on theoretical underpinning of the study, a conceptual framework and a summary of knowledge gaps.

2.2 Formal Learning and Doctors' Performance

This empirical literature discussed on continuous medical education, learning methods and environment, activities and content. With an increasing global and local research into the factors influencing doctor's performance, the relationship between Continuous Professional Development and how it influenced doctor's performance has attracted considerable attention in the recent years. In an attempt to go beyond the traditional Continuous Medical Education in the form of formal lectures or seminars with time based credits points awarded, studies mainly focussed on a holistic learning approach which incorporates the new knowledge and skills into practice in order to improve on performance (Dieleman & Harnmeijer, 2006)

Debate on the limitations of formal educational programs which often give a false sense of security, as competency is not ensured by attendance (as cited in Garganta, 1989; Kerry, 1998). Studies have shown that Continuous Medical Education or passive learning was good for assimilation of knowledge, but did not bring about improvement in patient care (Chan, 2002). There is general agreement that continuous medical education are ongoing educational activities that keep practitioners informed and up-to-date with medical knowledge. However, acquisition of new knowledge and skills does not necessarily mean a change in performance and new knowledge is not always directly applied to practice (World Federation Medical Education, 2003).

Continuous medical education is one of the components of continuous professional development and it is held in formal educational environments. Formal learning is implicated as a more structured and systematic training integrated into health facility protocols. It is often associated with didactic, schematic, largely teacher-driven learning methods such as lectures conducted in traditional settings like auditoriums which narrowly focused on clinical

education and predominantly built on education theory (Institute of Medicine, 2009; 2010; French, 2006; Filipe *et al.*, 2014).

Redesigning Continuing Education in the Health Professions, there were major flaws in the way continuous education was conducted, financed, regulated and evaluated. Health professionals and their employees mostly focused on meeting the regulatory requirements rather than identifying personal knowledge gaps and finding programs to address them and ii). Many regulatory organizations that regulate continuous education tended not to look beyond setting and enforcing minimal, narrowly defined competencies (Institute of Medicine, 2009)

Continuous Professional Development is a broader concept and a more holistic approach: wide range competencies that include research and scientific writing, multidisciplinary context of patients' care, professionalism and ethical practice, communication, leadership, management and behavioural skills, team building, information technology, audit and appropriate attitudinal change to ensure improved patients' service, research outcomes and attainment of the highest degree of satisfaction by stakeholders (Filipe *et. al*, 2014). "Medical practice is considered as routine and predictable but in fact; doctors require making judgement in complex and unpredictable situations. Continuous professional development is the key to optimizing a person's career opportunities, both today and for the future" (Khan, 2010; World Federation Medical Education, 2003).

Khan, (2010) reported that due to rapid changes in health care delivery system; health professionals needed to transform from a continuing medical education to a continuous professional development model so that they remain "up-to-date" in their knowledge and competency in total care. Chan (2002), noted that while professional development is accepted direction for practitioners, the speed of moving from traditional medical education based program should be gradual in order to be accepted in the profession. Hence the traditional continuous medical education could not be totally wiped out from the medical education arena as it was the simplest educational activity that is relied on for acquisition of new knowledge. Changing from continuous medical education to continuous professional development would not solve the problem of healthcare delivery given the complexity of patient care. Thus, they should both co-exist in the medical education arena.

The science behind Continuous Education is fragmented and underdeveloped and hence difficult to identify effective educational methods and to integrate them into coordinated, broad-based program that meet the need of diverse range of health professionals. Institute of Medicine, (2010) reported that individual learning styles differ greatly and therefore innovative learning methods have to be developed to help health professionals maintain their competencies. Learning methods have constantly changed from a focus on professionals' attendance with limited set of educational activities to a focus of demonstrating changing professional practice and improving patient outcomes. Creating appropriate methods, processes and context is imperative for professionals to provide high quality care possible.

Regardless of the selected delivery method or format, interactive practice based learning is the most successful: giving time and opportunity to the learners to ask questions, discuss and shift the focus from a passive teaching to an active learning. Experimental learning is central to the development and retention of intuitive skills central to a complex craft such as surgery (Khan, 2010) differed from this line of thought. He stated that the most effective personal development is from the experiences that one develops from own success and failure in everyday challenge. Institute of Medicine, (2010) suggested that potential sources for better learning may lie in the field of adult education research and theory. Research in areas such as andragogy, experimental learning, self-directed learning, lifelong learning and critical reflection may offer information that may be incorporated into continuous education delivery methods (Filipe *et al.*, 2014).

Continuous Professional Development methods should be geared towards quality improvement by mainly teaching not only on how to identify problems and how to apply solutions but to also focus on actual performance. Social media is increasingly being considered by educators or organizations as the medical community is changing from having conservative and reluctant stand to embracing and leveraging these media tools. He added "online tools improve research efficiency and social media enhances professional networking" (World Federation Medical Education, 2003).

Continuous Professional Development activities must be provided in settings and circumstances that are conducive to effective learning". For the purposes of quality improvement, physical facilities, skills training equipment and work schedule should be evaluated and updated regularly for the appropriateness in providing adequate context and conditions for CPD. In addition, Institute of Medicine, (2009) health professionals from

various disciplines should come together in carefully tailored learning environments. Inter-professional efforts will enable participants to learn both individually and as a collaborative team with a common goal of improving their performance and patient outcomes. Opportunities to benefit from CPD on day to day basis depend to a large extent on the working environment; a thriving clinical research environment with ample resources is different from working in the rural areas (Ndege & Kioko, 2006).

Benefit from participation in continuous professional development activities should be analysed in relation to doctor's needs. Also that documentation of relevant activities plays a significant role in systems for competence assessment, irrespective of the system in use for recognition of the doctor in practice. Therefore, programs should not only contain activities that are selected by Continuous Professional Development providers, rather by doctors as the learners, to address their personal and professional needs. Need assessment is critical to current and future work duties. (Khan, 2010; Nilsson & Hjelmqvist, 2009).

Continuous Professional Development programs should promote a culture of curiosity, lifelong learning and with activities that allow for personal interests, development and in response to the needs of their patients. Continuous Professional Development activities are often categorized into work-based learning activities, professional activities, formal educational courses and self-directed learning. Nonetheless these activities need to be guided by a planned educational policy suitable for a particular country (Khan, 2010).

Continuous Professional Development content should be diverse and flexible. Diverse meaning that the narrower and broader needs of doctors are met depending on the nature of their practice. Flexible meaning the content meets emergent needs as soon and as far as possible. Content should therefore include basic biomedical, clinical, behavioural, social sciences and ethics. "Course content in formal continuous professional development can be a barrier to practice change if it is not clinically relevant, not up to date, too basic or of poor quality" (French & Dowds, 2008). The content should be based upon self-directed plans for learning which are consistent with various professional roles. Doctors play different roles: medical expert, health- advocate, communicator, collaborator, team-worker, scholar, administrator and manager. There is need to strengthen these skills through CPD (Muriuki & Gitonga, 2014).

2.3 Mentorship Program and Doctors' Performance

Mentorship is one of the effective tools for Continuous Professional Development in a day to day practice in the medical field. According to Collaborative Mental Healthcare Network (CMHCN) (2008), mentorship program is a powerful model of relationship building in providing a safe environment for learning. It provides participants with the understanding of the importance of case-based and just-in-time access to experts in the field to assist them develop the knowledge and skills they need at the exact moment when needed. Mentoring therefore is a cost-sharing and effective method of supporting excellent patient care. Role modelling also features as part of mentorship through observable learning. Halligan in DH (2004), stated "I have been fortunate to have received personal and professional mentoring over the years. It allowed me to reflect and learn from my experiences, both good and bad. More than any other development tool, it has allowed me to grow as a person and as a professional."

Mentoring involves a more experienced person (mentor) who shares the knowledge and experience with someone who is less experienced (mentee) in a relationship based on mutual trust. This professional interaction integrates and enhances career, educational, interpersonal and psychological development both in the clinical and non-clinical aspects of medical practice. CPD mentoring whether consciously or unconsciously holds the future of medicine as new skills, knowledge and techniques are shared between colleagues, team work is enhanced, leadership skills are developed and role models are nurtured for a sustainable quality of practice. This occurs through effective communication channels, interactive learning, peer reviews and apprenticeship (Cowan & Flint, 2012).

In addition, mentoring is seen to be a mutual and reciprocal relationship or partnership whereby both parties utilise reflective practice and experiential learning to develop new skills, knowledge and attitudes and is beneficial at all levels of professional careers. It is characterized by adult nature of the relationship in contrast to traditional student and apprentice relationship. Hazelton & McGibbon (2014) also noted that mentoring was relevant for skill acquisition (Dieticians Association of Australia (DAA), 2013).

A mentor as 'a senior practitioner, or respected peer, who offers through an ongoing professional relationship with his or her mentee opportunities to develop, stimulate and maintain their professional development by: addressing current professional concerns; identifying further learning needs to form part of personal development plan in CPD; develop

greater confidence and increased motivation through increased self-reflection; evaluate the professional task; identifying blocks and hindrances to the professional well-being of their mentee; and offering help with career progression and advancement; develop key managerial competencies such as strategic thinking, problem solving and influential thinking so that they can apply them in their workplace; increase organizational knowledge through sharing their understanding and experiences and importance of building networks; enable a dedicated focus on personal and professional development hence contributing to Continuous Professional Development for both mentees and mentors (Ramsay & Bijlani, 2008).

Mentoring through Continuous Professional Development is usually associated with work-based learning where doctors learn by repeating the same type of action via discussion with colleagues and peer review. To make the most out of CPD mentorship, doctors need to take advantage of the variety of learning modalities, join educational networks and engage in development of their colleagues by sharing their experiences and benefiting from collaborative learning. Networking is a major channel of mentoring and includes meeting with colleagues or net-based information exchange, discussions and counselling (Khan, 2010; World Federation Medical Education, 2003).

Participation in Continuous Professional Development has been reported to improve confidence and competence among healthcare professionals thereby enabling rewarding relationships among themselves and their clients. Further, doctors in consultation with their peer and professional organizations should define competencies or benefits to be achieved as a result of CPD to enhance learning through teamwork. There is also a need to establish formal collaboration with other stakeholders in order to achieve a broad spectrum of learning possibilities (World Federation Medical Education, 2003; Bello & Lawson, 2013).

There is an indication that there is a growing trend to acknowledge the value of inter-professional and team based professional development and could be a result of planned inter-professional education or spontaneously at the workplace (as cited in General Medical Council, 2003). According to General Dental Council (GDC) CPD Guidelines (2013), it is proposed that CPD be carried out with other members of the dental team for example training to handle emergencies together. Team work institutes a common growth among members so as to embark on the same standard of practice (HPCSC, 2013).

On the contrary, a study conducted by the Department of Health UK, argued that mentoring may not be the most cost-effective tool in some circumstances. For instance, if there are many doctors in a particular group who have a common need, a formal educational program may be more appropriate to ensure quality and availability. Mentoring also relies on one-to-one interactions and not everyone may find it a more comfortable experience particularly where trust has not been built up naturally. There may be shortage of suitable people with enough time to be mentors and one mentor may not be skilled in all areas and if one has an “official” mentor, this may limit the benefit to what one person can provide. Moreover, some people in medicine still believe that requesting or offering additional help implies a weakness or lack of readiness for a new role, rather than a valuable opportunity to gain extra skills, knowledge and insights to allow the person helped to achieve greater success. Another setback is the choice of an official mentor from another group could exclude the strength of peers sharing experience, support and developing peer networks (Department of Health, 2004).

Lastly, mentors draw their own past experience and skills learned in other roles: single educational event will not adequately prepare a doctor for the very diverse issues or variety of questions asked by mentees. In the absence of clear evidence about how doctors benefit from mentoring, Department of Health (2004), proposed that mentoring be promoted in a natural way by which doctors can enhance their careers; participation remains entirely voluntarily; access to mentorship to be made as wide as possible; doctors can choose a scheme to participate or request for mentors from outside restricted groups or organizations.

Role modelling is a powerful form of learning and an integral part of medical education especially in the transmission of values, attitudes and behaviour.” Much of learning is done unconsciously and can transmit negative or positive effects. The old aphorism “Do as I say and not as I do” seldom works. What is done has more impact on the learner than what is said” (as cited in Westberg & Jason, 1993). Historically, doctors have patterned their activities on those of practitioners whom they respect and trust (Cruess, Cruess, & Steinert, 2008).

Baillie and Guerrero (2011), added that strategies of intentional role modelling requires that one is aware that he or she is a role model, is explicit about what he or she is role modelling, uses a student-centred approach, has a positive attitude, protects time for teaching, facilitate reflection on clinical experience, demonstrate clinical competence and encourage dialogue

with colleagues. Effective role model is one with clinical competence: has excellent knowledge and skills, effective communication and sound clinical reasoning; Teaching skills: a student centred approach with effective communication, feedback and opportunities for reflection and Personal qualities: compassionate and caring, honesty and integrity, enthusiastic about practice of medicine, effective interpersonal skills and commitment to excellence (Cruess, Cruess, & Steinert, 2008).

Passiet *al.* (2013), in their study, outlined that excellence in role modelling involves demonstration of high standards clinical competence, excellence in clinical teaching skills and humanistic personal qualities. Positive role models not only shape the professional development for the future practitioners but also influence their career choices. However the challenge that arose in there study was the lack of understanding of the complex phenomenon of role modelling and the negative role modelling which poses negative influence required deeper exploration to identify ways to mitigate adverse effects.

Paice, Heard and Moss (2002), considered whether role models can still be effective means of imparting professional values, attitudes and behaviours in the health service that is increasingly sensitive to society's expectation and for developing doctors that are more patient centred and ethically sensitive. A survey conducted in this study found that the most important qualities in role models that were a positive attitude to the junior colleagues were compassion for patients, integrity, clinical competence, enthusiasm for their subject and teaching ability were so important but the research achievement and academic status were much less so. The attributes that did not feature highly were excellence of research, publications, success in raising grants, senior management roles, service development, professional leadership, power, status and high earnings.

Simon Sinclair while observing a group of medical students gave a contrasting opinion to the above findings. He saw that students were drawn to and emulated senior doctors who seemed to share their power and responsibilities with other professionals. They learned aversion to investigating patients' social and psychological problems. They adopted idealism of professionalism when away from family and non-medical friends. This suggested a divergence between the qualities the young doctors seek in their role models and the qualities they actually emulate (Paice, Heard & Moss, 2002).

Traditionally, good role models have been seen as part of the informal curriculum of medical professionalism and in this way professional attitudes, values and behaviours have been handed down from generation to generation. The most important question is whether these values, attitudes and behaviours are the ones that will stand future clinicians in good stead as the health service of the 21st Century develops.

2.4 Implementation of Continuous Professional Development Cycle and Doctors' Performance

Continuous Professional Development Cycle is a personally planned program of learning experiences undertaken by an individual. Continuous Professional Development is not a fixed process; it's a continuous educational process rather than a targeted intermittent input. It is a personal and professional responsibility and it is important for doctors to fulfil it by demonstrating that their professional development comprises appropriate learning needs assessment, learning activities address the identified needs, learning is implemented in practice and that changes are evaluated to complete the cycle of learning. Doctors' achievement of best performance and quality healthcare for the community begins with change in personal and professional practice through implementation of a Continuous Development Process or Cycle (Khan, 2010). This includes a 5 step cyclical process: Self-appraisal, Personal Plan, Implementation or Action, Reflection and Documentation (Dieticians Association of Australia, 2013; Khan, 2010).

2.4.1 Appraisal or Review Stage

Self-appraisal is defined as the assessment of learning need that can be addressed by either self-assessment of performance, performance reviewed by professionals, peer, employer or regulatory binding for future promotion. It occurs in four stages as cited in (Fox & Bernett, 1998) first, the doctor estimates where he or she ought to be in terms of knowledge, skills and performance related to change. Secondly, one identifies what he or she presently knows or is able to do. Thirdly, one estimates a discrepancy or the gap between stage one and two. Lastly, one desires to cover for that gap or need (Khan, 2010; Starke & Wade, 2005).

Health Professional Council and Social Care (HSCPC), (2013), added that a professional is required to carry out a self – directed review of their knowledge, skills, performance and personal qualities in their professional role. During appraisal, learning needs are discussed to ensure that they are relevant to doctor's practice with a focus to support changes and

improvements in practice. This can be done by checking the following domains of Good Medical Practice.

Good clinical care or governance: evidence discussed include audit data with outcomes and their comparison to national standards, detail of formal complaints and how they were dealt with critical incidents. Maintaining Good Medical Practice: evidence of participation in clinical and non-clinical areas attendance in appropriate courses, individual development like publications. Teaching and Training: evidence from feedbacks of those they taught through teaching and supervisory role. Collaboration and teamwork: multi source feedback or 360 degree assessment and patient satisfaction questionnaires to assess teamwork and communication skills. Probity and Health: doctors identify any problems which might affect their effectiveness through self-declaration (Starke & Wade, 2005).

The needs, outcomes and prioritisation should be recorded as part of Personal Development Plan to ensure relevance of learning (HSCPC, 2013; Starke & Wade (2005). According to Filipe *et al.* (2014) “a learning need is a gap between current personal competencies or population health status and the desired state. Learning gaps can be identified during direct patient care, in interactions with clinical and non-clinical teams and activities.

2.4.2 Planning (Personal Development Plan) Stage

Personal Development Plan (PDP) is a portfolio for work-based learning which documents the key objectives with actions to achieve it, identifying the internal and external factors that will favour or not favour the achievement and identification of resources and training course. PDP is an outcome of appraisal. Strategic planning method like SWOT analysis can be involved and the Continuous Professional Development activities must be a mixture of learning relevant to the current and future practice to benefit the service user (Khan, 2010).

Personal development plan template has the following headings: Learning need; learning outcome; priority; appropriate learning activity and timeframe for activity. The use of this template has been greatly emphasized in the UK, USA, Australia and Middle East but rarely in the African Continuous Professional Development Context. In Kenya specifically, the CPD guidelines has not captured this tool that enables personalization of continuous professional development program, for the purposes of individual change in practice (HSCPC, 2013).

2.4.3 ActionStage

This plan is brought into practice by attaining professional qualifications, participation in professional body working groups, attending training courses, engaging in formal and informal activities, mentoring (Khan, 2010). “It is important for health professionals to participate in activities that relate to the content of the participants professional practice as cited in (Berry & Diennes 1992).” Starke & Wade (2005), stated that Continuous Professional Development must be accessible and timely to meet the needs identified in the development plan. Doctors must then target educational activities that will enable them to achieve their goals. Sequencing the activities is helpful in reinforcing learning for example learning a new skill, practising it in a clinical environment, then following up to check if its effective in changing a behaviour.

Filipe *et al.* (2014) argued that sometimes an educational activity is undertaken by doctors not for the sake of factual learning, but for boosting their confidence on a particular topic or skill. Therefore CPD activity should be chosen following an identified need related to a skill, knowledge, and competence assurance or performance demonstration in practice. The activities can range from practice improvement, independent professional development to research or self-education. The educational activities must be intentional: a deliberate search for knowledge, skills, competences and attitudes must be of quality and must address the patient, society and healthcare needs (Baxendale & Bay, 2013; General Dental Council, 2013; EURACT & EQUIP, 2001).

2.4.4 ReflectionStage

It may not be possible to measure the direct effect of a particular CPD activity on patient outcomes but one could use evidence from his or her practice, research, audit, patients and colleague feedback to reflect accurately on their performance. Then as part of professional development, one should then make any necessary improvements (General Medical Council, 2012).

Khan (2010), proposed that doctors need to find out whether their needs were met, if they can address what they learned, how their work will improve, what could they do now that they couldn't do before. Reflection helps doctors to analyse complex situations, consider the way they make decisions, make connections, improve on problem solving skills and identify future learning needs. Professional learning should also equip doctors to deal with unpredictable future clinical demands to relate to the broad knowledge base and make up for

deficiencies of the past experience (World Federation Medical Education, 2003). Continuous professional development activities should be evaluated focussing on participants' participation, satisfaction and changes in knowledge, behaviour and patients outcomes as depicted in Kirkpatrick's Model of Evaluation. Performance evaluation can be performed through CPD credit accumulation, learning portfolios, criterion reference methods, computer diaries, peer review and chart audits. (Muriuki & Gitonga, 2014)

2.4.5 Documentation Stage

For quality developed to be achieved, the objective of any system of documentation should be to acknowledge actual learning and enhance competence and not merely participation in continuous professional development activities. This can be done by creating personal learning portfolio which they can share with their peers (World Federation Medical Education, 2003).

Personal learning portfolio should include a personal collection of evidence of an ongoing development, a reflective commentary, record of attendance and important supporting documents (Australian Capital Territory, 2010). General Dental Council, (2013) emphasized that the documentary evidence must have concise educational aims and objectives, clear anticipated outcomes and quality controls.

Filipe *et al.* (2014) proposed a different method of documentation: the use of an e-portfolio which documents an individual's professional progression as a web based collection of artefacts like reflection, resources, accomplishments and time periods. This will encourage exchange of ideas and feedbacks thereby bringing a meaningful learning experience. To make it easier for doctors to document their activities they have attended, MPDB, Kenya has provided for an online CPD platform where doctors can maintain an e-portfolio without necessarily having to physically submit a log book at the Board. The Ministry of Health (MOH), Kenya has developed strategies to ensure that doctors participate in CPD: post basic scholarship, scholarship for short courses, specialized workshops and on job training budgetary provision Despite such a development, most doctors Kenya have not complied.

2.5 Theoretical Framework

This study is based on Knowle's Adult Learning Theory. Andragogy as a study of adult learning, originated in Europe in 1950's and was then pioneered as a theory and model of adult learning from the 1970's by Malcolm Knowles an American practitioner and theorist of

adult education, who defined andragogy as "the art and science of helping adults learn" as cited in (Zmeyov 1998; Fidishun 2005). Andragogy (adult learning) is a theory that holds a set of assumptions about how adults learn and emphasizes the value of the process of learning (Kearsley, 2010). It uses approaches to learning that are problem-based and collaborative rather than didactic, and also emphasizes more equality between the teacher and learner. Knowles identified six principles of adult learning:

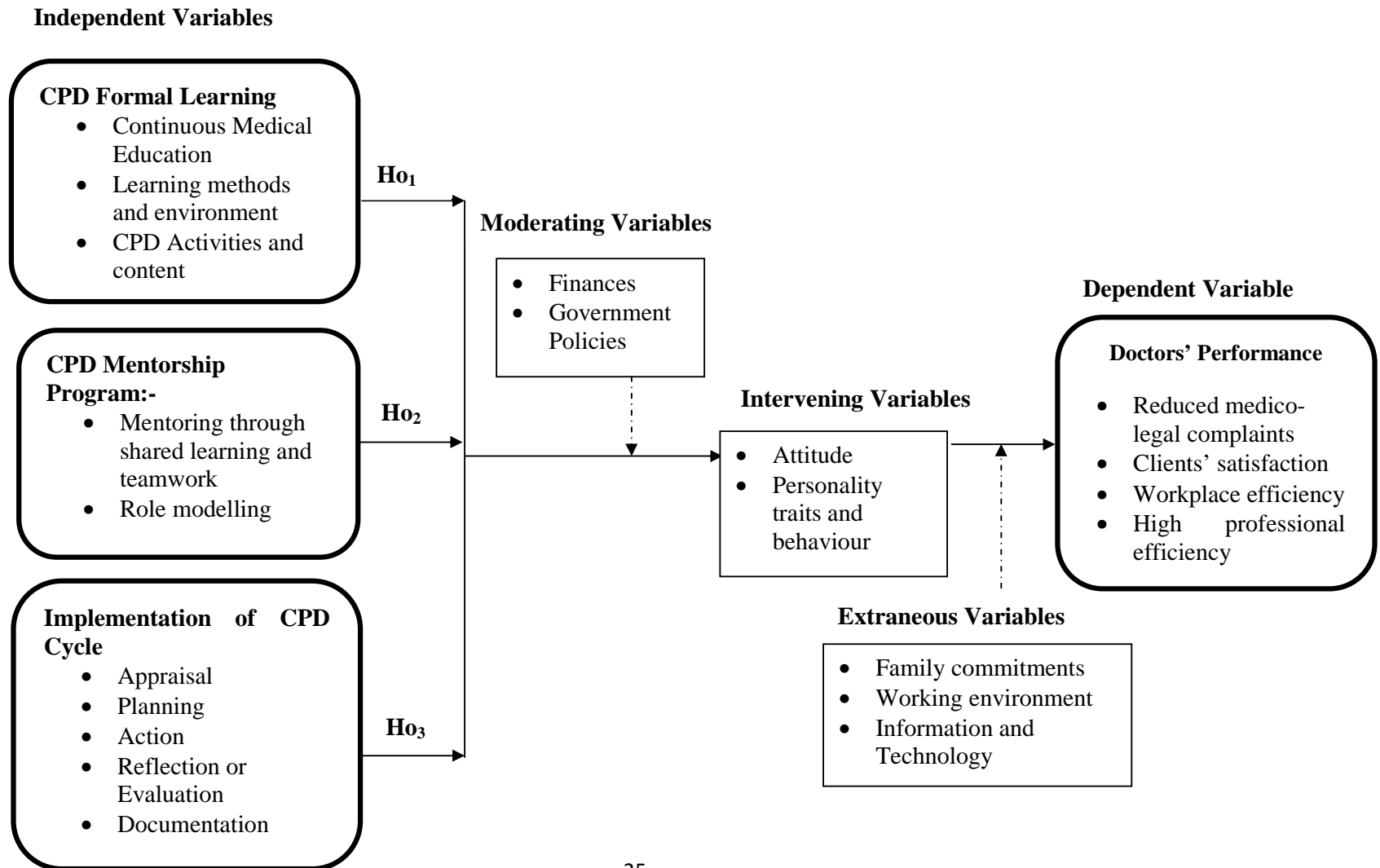
Adults are internally motivated and self-directed (Fidishun, 2005) adult learners resist learning when information, ideas or actions are imposed on them. Secondly adults bring life experiences and knowledge to learning experiences. They like to be given opportunities to use their existing foundation of knowledge and experience gained from life experience to apply to their new learning experiences. Thirdly, adults are goal oriented: they become ready to learn when they experience a need to learn in order to cope satisfyingly with real life tasks or problems.

Fourthly, adults are relevancy oriented: they want to know the relevance of what they are learning to what they want to achieve. Fifthly, adults are practical through, interacting with real clients, real life situations and practical fieldwork experiences, students move from classroom and textbook mode to hands-on problem solving where they can recognize first-hand how what they are learning applies to life and the work context. Lastly, adults like to be respected and respect can be demonstrated to the learner by taking interest, acknowledging the wealth of experiences that the student brings to the placement; regarding them as a colleague who is equal in life experience and encouraging expression of ideas, reasoning and feedback at every opportunity. Continuous Professional Development is underpinned by andragogical concepts and those associated with reflective practice. Influential work on experimental learning, learning styles and reflective practice has a major contribution to understanding the way in which adults learn in the workplace and apply the learning to practice (Sullivan, 2010).

2.6 Conceptual Framework

The variables in this study are inter-related as shown in the conceptual framework below

Figure 1 Conceptual Framework



The conceptual framework of this study is based on the three elements of Continuous Professional Development and how they influence doctor's performance. The independent variables consist of formal learning and the key indicators are Continuous Medical Education, learning methods and environment and CPD activities and content. This phenomenon that studies the influence of formal learning on doctors' performance will be tested through null hypothesis **H₀₁**.

The second independent variable is the mentorship program and the key indicators are mentorship through shared learning and teamwork and role modelling. This phenomenon that studies the influence of mentorship program on doctors' performance will be tested through null hypothesis **H₀₂**.

The third independent variable is the implementation of CPD cycle and the key indicators of this variable include appraisal, planning, implementation, reflection and documentation. This phenomenon that studies the implementation of CPD cycle on doctors' performance will be tested through null hypothesis **H₀₃**.

The dependent variable in this study is the doctor's performance with four indicators which include reduced medico-legal complaints, clients' satisfaction, workplace and high professional efficiency. The conceptual framework above indicates the relationship between the independent and dependent variables.

Apart from the major independent and dependent variables, there are other variables such as moderating, intervening and extraneous variables that may affect the relationship of formal learning, mentorship program and continuous professional development cycle to doctors' performance.

2.7 Knowledge gaps

The summary of knowledge gaps as conceptualized from the reviewed literature is as shown in the table below:

Table 2.1 Summary of Knowledge Gaps

Variable	Author	Findings	Knowledge gap
Formal Learning and doctors' performance	<p>Chan, (2002). Medical education. <i>From Continuous Medical Education to CPD</i></p> <p>French & Dowds, (2008). An overview of CPD in Physiotherapy</p> <p>Filipe <i>et al.</i> (2014). Ophthalmic Education. CPD: Best Practices</p> <p>Khan, (2010). CPD; What should we learn?</p>	<p>Passive learning was good for assimilation of knowledge but did not bring about improvement in patient care. Formal learning can be a barrier to practice change if it is not clinically relevant, not up to date, too basic or of poor quality. Formal learning is didactic and largely teacher-driven with narrow focuses</p>	<p>Educational activities need to be intentional diverse, flexible and should be implemented to address the patient, society and healthcare needs both for the current and future. CPD activities need to be guided by a planned educational policy. There is need to emphasize on the concepts of experimental adult learning as proposed by Knowles' Adult Learning Theory</p>
Mentorship program and doctor's performance	<p>DH, (2004). Mentoring for Doctors. <i>Signposts to current practice for career grade doctors</i></p> <p>WFME, (2003). Global standards for quality improvement</p> <p>Paice, Heard & Moss, (2002). How important are role models in making good doctors?</p> <p>DAA, (2013). Guide to the ADP Program, CPD and Mentoring</p>	<p>Mentoring may not be cost effective when many doctors in particular group have a common need. Choice of an official mentor from another group could exclude the strength of peers sharing experience, support and developing peer networks. There is divergence between the qualities the young doctors seek in their role models and the qualities</p>	<p>A formal educational program may be more appropriate to address the common need of a group of doctors. There is need to look at interpersonal relationships and how they affect growth of mentorship programs. Methodology not clear on how they arrived at the findings, therefore there is a need to focus on these issues.</p>
Implementation of CPD Cycle and doctors performance	<p>IOM, (2009). Institute of Medicine. National Academic Press</p> <p>GMC, (2012). CPD Guidelines</p> <p>Filipe <i>et al.</i> (2014) Ophthalmic Education. CPD: Best Practices</p> <p>Baxendale & Bay (2013). Explain the importance of CPD of anaesthetic technicians</p>	<p>Participation in Continuous Professional Development has been for the purpose of meeting the regulatory requirements. It may not be possible to measure the direct effect of a particular Continuous Professional Development activity. Medical practice is considered routine and predictable whereas doctors are required to make judgements in complex and unpredictable situations</p>	<p>CPD should aim at identifying personal knowledge gaps and finding programs to address them by implementing the CPD Cycle. Choice of CPD activity should follow an identified need related to skill, knowledge, and competence assurance or performance demonstration in practice. There is need to verify the findings in the Kenyan context</p>

2.8 Summary of the Literature Review

The literature under this study basically covered the authors who focused formal learning, mentorship and implementation of CPD cycle and the influence they have on doctors' performance. The literature clearly brought out the relationship between the formal learning programs and doctor's performance. Most literature on formal learning proposed the transition from traditional continuous medical education to continuous professional development which is more holistic approach. Under this independent variable, apart from learning methods, the researcher also looked into the learning environment, CPD activities, and the learning content in relation to doctors' performance.

The literature in this chapter also brought out the relationship between mentorship program and doctors performance. Under this independent variable, literature explained the importance of collaborative learning, teamwork, peer reviews and role modelling as a contributory factor in doctors' performance. However some literature brought about the limitations of engaging in professional mentorship and role modelling.

The literature also brought out the relationship between implementation of CPD Cycle and doctors' performance. Most literature supported the adherence to implementation of appraisal, planning, implementation, reflection and documentation so that CPD is appropriated to practice and not just undertaken in fulfilment of mandatory obligation.

The literature review also brought out the theoretical underpinnings of this study. The study will therefore be based on Andragogy Adult Learningtheory that was postulated by Malcom Knowles in 1950. The chapter also brought out a summary of knowledge gap by focusing on four empirical studies on each variable.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter described research design, target population, sample size, sampling design, research instruments, data collection methods, data analysis and ethical issues.

3.2 Research Design

This study adopted a descriptive survey research design in collecting data from the respondents. This design was preferred because it ensured a complete description of the situation, making sure that there was minimum bias in the research process (Kothari, 2008).

This type of research was used to obtain data that would help determine specific characteristics of the population. It was used to determine the proportion of respondents with the same responses and to determine the relationships between independent and dependent variables in this study. It involved asking questions in the form of a questionnaire to a sample population. It was used to obtain information concerning the current status of the phenomena and to describe what existed with respect to variables. It determined the frequency with which a phenomenon occurs or the extent to which two variables relate.

3.3 Target Population

The target population for this study was 200 medical and dental doctors practicing in major private or public teaching, regional, district and private facilities across the eight constituencies in Nairobi County and participate in Continuous Professional Development. According to the Medical Practitioners and Dentists Board Compliance Report, (2013), 200 doctors in Nairobi County actively participated in CPD in the previous year. The distribution of the target population was as shown in Table 3.1 below.

Table 3.1: Target Population

Target Group	Total
Medical/ Dental Officers in the Public Facilities	90
Private Practice Practitioners	60
Specialist	50
Total	200

3.3.1 Sample Size

The sample size will be obtained by a manual calculation method developed by Patton in 1990 as shown below:-

Formula: Sample Size $n / [1 + (n / \text{population})]$

In which $n = Z^2 [P (1-P) / D^2]$ (Patton, 1990); where:

Z = value of the standard deviation at the 90% confidence level (1.645)

P = True proportion of factor in the population

D = maximum difference between the sample mean and the population mean

Number of Doctors (population) = 200

P = Expected frequency value = 10%

Worst Acceptable Frequency = 5%

D = (Expected frequency – worst acceptable) = 5%

Where:

$N = Z * Z [P (1-P) / (D * D)]$

$N = 1.645 * 1.645 [0.1(1 - 0.1) / (0.05 * 0.05)]$

$N = 97.42$ Next, Calculate the Sample Size. (S = Sample Size)

$S = n / [1 + (n / \text{population})]$

$S = 97.42 / [1 + (97.42 / 200)]$

$S = 65$ for this study, a sample size of 65 doctors will be adequate representation of the population.

Z = Area under normal curve corresponding to the desired confidence level

Confidence Level/ Value for Z

90% / 1.645

95% / 1.960

99% / 2.575

99.9% / 3.29

3.4 Sampling Procedure

The sampling procedure of this study adopted stratified random sampling technique in which the target population of 200 respondents were be grouped into three strata as shown in the table above. Medical and dental doctors in the public hospitals formed the first stratum and comprised of 90 respondents, the second stratum entailed private practitioners and comprised of 60 respondents and finally the final stratum was specialists who comprised 50 respondents. In each stratum, a simple random sampling was undertaken to find the sample.

Based on proportionate method, the sample size for each stratum was calculated to give 30 respondents for the first stratum, 20 respondents for the second stratum and 15 respondents for the third stratum as shown below:-

Table 3. 2: Sampling Frame

Target Group	Total	Sample size
Medical/ Dental Officers in the Public Facilities	90	30
Private Practice Practitioners	60	20
Specialist	50	15
Total	200	65

3.5 Research Instruments

This study utilized a questionnaire as a primary tool for data collection. The questionnaire contained both structured and unstructured questions meaning it had both open-ended and close-ended questions. The questionnaire contained 4 sections. Section A captured information on the demographic characteristics and profiles of the respondents such as gender, age, number of years in practice and current place of practice. Section B contained questions relating to formal learning. Section C contained questions relating to mentoring program and Section D contained questions on implementation of Continuous Professional Development Cycle.

For the closed-ended questions, a Five-point Likert Scale was used which included: (1) Strongly agree, (2) Agree, (3) Uncertain, (4) Disagree and (5) Strongly disagree. The strongly agreed responses were scored at 5 for direct positive while those of strongly disagree at 1 for direct negative responses. Closed ended questions were included because they were easier to administer and to analyse. The questionnaires facilitated the evaluation of the influence of Continuous Professional Development to doctor’s performance. The questionnaire was self-administered to the respondents. This enhanced objectivity and ensured that participants answer the same questions thus preventing bias. This descriptive survey study involved 65 medical and dental practitioners. The procedure for data collection ensured compliance to the procedure put in place by the National Commission for Science, Technology and Innovation. Permission to collect data from government and private institutions was sought from the institutions’ administration.

3.5.1 Pilot Testing

The researcher randomly picked 10 respondents and administered the questionnaire to them to find out if the questionnaire was reliable. This process entailed a small-scale trial, where a few respondents (10) took the test and commented on the mechanics of the test. They pointed out problems with the test instructions, instances where items were not clear and helped the researcher format the questionnaire and removed any noted typographical errors and or issues. Once all issues with the test items and forms have been addressed, the tests are ready for large-scale field testing.

The primary purpose of field testing was to construct an initial picture of test validity and reliability. Again, pilot testing process was undertaken to elicit appropriate responses to the study so as to determine if questions asked were relevant and appropriate. Pilot testing process helped to check on the clarity and suitability of the wording in the questionnaire (Basavanthappa, 2007).

3.5.2 Validity of Research Instruments

Validity is the extent to which a measure actually measures what is supposed to measure. It therefore has to do with how accurately the data obtained in the study represents the variables of the study to ascertain the appropriateness of a research instrument. In this study, content validity was utilized. This process therefore refers to appropriateness, meaningfulness and usefulness of inferences a researcher makes based on data collected. To ensure validity of the instrument used, the researcher used content validity. This was verified by the researcher's supervisor and other lecturers in the department of Extra Mural Studies.

3.5.3 Reliability of Research Instruments

Reliability is the consistency of measurement, or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects (Mugenda & Mugenda, 1999). This study employed Split half method of reliability to ascertain the coefficient of internal consistency or reliability of the research instruments. To do this, Spearman-Brown prophecy formula was then used to obtain the said reliability. Predicted reliability, $\rho_{xx'}^*$, is estimated as:

$$\rho_{xx'}^* = \frac{N\rho_{xx'}}{1 + (N - 1)\rho_{xx'}}$$

$$P_{xx''} = 2P_{xx'}/1+P_{xx'}$$

Where:

P_{xx} is the reliability coefficient for the whole test

$P_{xx'}$ is the split-half correlation

$$P_{xx} = [(2) (.75)] / (1 + .75) = 1.5 / 1.75 = .857$$

Using the split-half method, the researcher divided the questionnaires into even and odd numbers and then administered to the sample of 65 respondents. The scores of all the odd and even numbered scores for all questionnaires were computed separately. Then the odd numbered scores for all items were correlated with the even numbered scores. After this tabulation, the coefficient was found to be 0.857. Being more than 0.7, the instrument was deemed reliable.

3.6 Data Collection Procedures

After successfully defending the research proposal, the researcher applied for a research permit from the National Commission of Science, Technology and Innovation of the Ministry of Higher Education Science and Technology. The researcher also wrote a letter of transmittal of data collection instruments to individual respondents. The researcher made contacts and booked appointments with individual respondents. The researcher also identified two research assistants to help her in the process of data collection and analysis. Pilot testing of the questionnaire was undertaken whereby the researcher randomly picked a sample of 10 respondents. This was done to find out if the questionnaire was relevant, it covered the intended scope and had the appropriate wording.

Questionnaires were hand delivered and collected after an agreed duration. In order to ensure that the questionnaires reached as many respondents as possible, the researcher and her research assistants made follow ups on daily basis on the progress made by the respondents in filling questionnaire. In this way, judgment was made on who is responding adequately and giving appropriate answers.

The entire data collection exercise took approximately 2 weeks. After the data collection, clean up, coding and removal of errors and inconsistencies were undertaken. At the end of each day, the researcher held a brief meeting with the research assistants to review experiences and also checked the completeness and consistency of the data collected. At the same time all the questionnaires administered in a particular day were collected at the end of the day to avoid cases of alterations of the collected data.

The researcher posed a series of questions to willing participants, summarized their responses with percentages, frequency counts, or more sophisticated statistical indexes; and then drew inferences about a particular population from the responses of the sample of 65 doctors.

3.7 Data Analysis Techniques

Data analysis was done following the four phases normally used in many research projects. This included: data clean up, data reduction, data differentiation and explanation. Data clean up involved editing, coding and tabulation in order to detect any anomalies and discrepancies. All data were keyed using the Statistical Package for Social Scientists (SPSS) Version 17 software with appropriate codes and variable specifications. The data was then counter-checked for possible erroneous entries, in case of any errors at this stage, appropriate corrections were made accordingly. Marshall and Rossman (1989) affirmed that such a procedure is good for qualitative analysis.

The data were analyzed based on the themes of the research objectives which included formal learning, mentorship program and implementation of the CPD cycle. Qualitative data were analyzed by making inferences from the expressions and opinions of the respondents around the themes and presented descriptively. The specific effect of independent variables vis-à-vis the dependent variable was tested through multivariate analysis. The test of hypotheses to determine the level of significance of an independent variable against the dependent variable was tested through regression. Quantitative data was analysed using descriptive statistics including frequency distribution, percentages, measures of central tendencies, standard deviations and proportions to summarize the responses from the questionnaire. The significance level was set at $p < 0.05$ for every statistical set.

3.8 Operational Definition of Variables

The operational definition of study variables was undertaken as shown on table 3.3:-

Table3.3: Operational definition of variables

Research Objectives	Indicators	Measurement Scale	Tools of analysis
Independent Variables			
To establish how formal learning program in CPD influences doctors' performance	No. of trainings CPD activities Content of the learning module Adequacy of the Learning methods and environment	Nominal Nominal Nominal	Mean, Percentage, mode, Standard deviation
To establish how mentoring program in CPD influences doctor's performance.	Level of involvement Relevance of mentorship process Attributes of an effective role model	Ordinal Nominal	Mean, Percentage, mode, Standard deviation
To assess to implementation of CPD Cycle influence doctor's performance.	Implementation and relevance of CPD Cycle Reasons for participation in CPD Cycle Importance of CPD evaluation and documentation Online documentation	Nominal Nominal	Mean, Percentage, mode, Standard deviation
Dependent Variable			
	Reduced medico-legal complaints Clients' satisfaction Workplace efficiency High professional efficiency	Nominal	Mean, Percentage, mode, Standard deviation

3.9 Ethical Issues

While carrying out this research, ethics were considered as an integral part of the research planning and implementation process. Accordingly, this study employed beneficence, respect and justice to ensure that the research process is conducted in a manner that minimized or avoided unnecessary risks, treated the respondents with courtesy, respected privacy and ensured that the procedures were reasonable, non-exploitative and fairly administered. The research processes and procedures used were based on a voluntary informed consent and employed a valid research design with a sample selection that is appropriate for the purpose of the study. In addition, ethical clearance and permission to conduct the study was applied for and obtained

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This Chapter discussed on the data analysis and presented the results of the research that was carried out within Nairobi County. The results of the study have been discussed in line with the research objectives. The themes of the study were: the influence of CPD Formal learning on doctor's performance, the influence of CPD mentorship programs on doctor's performance and the influence of the implementation of CPD cycle to doctors' performance.

4.2 Questionnaire Response Rate

A total of 65 questionnaires were self-administered to the respondents; 52 of which were returned making a response rate of 80%. This rate was above 75% minimum advocated by Mugenda & Mugenda (1999) which stipulated that a response rate of 50% is adequate for analysis and reporting; a response rate of 70% and above is excellent.

4.3 Demographic Characteristics of Respondents

This section described the demographic characteristics of the respondents used in this study. These included the distribution of respondents by age, gender and the total number of years of experience.

4.3.1 Distribution of Respondents by Age

The essence of studying the age of the respondents was to determine the distribution of respondents by age who mostly participated in CPD programs.

Table 4.1: Distribution of Respondents by Age

Age (years)	Frequency	Percentage %
25-34	32	61.5
35-44	16	30.8
45-54	3	5.8
55-64	1	1.9
Total	52	100

From the findings, 32 respondents (61.5%) were between the age 25 – 34. 16 respondents (30.8%) were between 35 - 44 years, 3 respondents (5.8%) were between 45-54 years, and 1 respondent (1.9%) was between 55 – 64 years.

4.3.2 Distribution of Respondents by Gender

The researcher sought to find the distribution of respondents by gender in order to determine the gender that participated most in the study.

Table 4.2: Distribution of Respondents by Gender

Gender	Frequency	Percentage %
Male	30	57.7
Female	22	42.3
Total	52	100

From the findings, there were more male respondents (30) who participated in the study (57.7%) than the female respondents (42.3%) who were 22 in number.

4.3.3 Distribution of Respondents by Years of Experience

The researcher sought to find the distribution of respondents by the number of years of experience as shown in table 4.3.

Table 4.3: Distribution of Respondents by Years of Experience

Total number of years of experience	Frequency	Percentage %
Less 1 year	3	5.8
1-5 years	20	38.5
6-10 years	19	36.5
11-15 years	5	9.6
More than 15 years	5	9.6
Total	52	100

From the findings, 20 respondents (38.5%) and 19 respondents (36.5%) had 1 - 5 and 6 – 10 total number of years of experience respectively. Those with 11 -15 and more than 15 total number of years of experience (9.6%) and the least total number of years of experience which was less than 1 (5.8%).

4.4 CPD Formal Learning and Doctor's Performance

The researcher sought to find the influence of formal learning on doctors' performance from the responses on the learning methods, the learning environments and additional skills that should form part of CPD activities apart from Continuous Medical Education.

4.4.1 Continuous Professional Development Activities

The study sought to find out the different activities that the respondents had participated in the past 12 months as shown in table 4.4.

Table 4.4: Participation in Continuous Professional Development Activities

Activities	Response	Frequency	Percentage %
Clinical meetings	Yes	45	86.5
Conferences/Workshops/ Seminars	Yes	43	82.7
Local Hospital Events	Yes	42	80.8
Morbidity and Mortality meetings	Yes	38	73.1
Professional Association Events	Yes	32	61.5
Hands on	Yes	28	53.8
Journal Clubs	Yes	24	46.2
Short courses or refresher courses	Yes	21	40.4
E - learning modules	Yes	14	26.9
Author or Co-author of publication	Yes	7	13.5

According to the findings, the most participated CPD activities in the past 12 months included clinical meetings, conferences/ workshops/seminars and local hospital events at 86.5%, 82.7% and 80.8% respectively. This was followed by morbidity and mortality meetings, professional association events, hands on, journal clubs and short courses or refresher courses at 73.1%, 61.5%, 53.8%, 46.2% respectively. The least participated activities in the past 12 months included e-learning modules and author or co-author of peer reviewed publication at 26.9% and 13.5% respectively.

4.4.2 Learning Methods and Doctors' Performance

The researcher inquired on the learning methods through which the respondents learn best and how it influences their performance as shown in table 4.5.

Table 4.5: Learning Methods

Learning Methods	Mean	Standard deviation
Experimental learning	4.886	0.323
Self – directed learning	3.827	0.098
Formal educational learning	3.577	0.289

According to the findings, learning through experimental learning or interactive practise based learning has a great influence on doctors' performance with a mean score of 4.886. Learning through self-directed learning like informal reading and online research had a mean score of 3.827. The respondents indicated that they least learned through the formal educational or passive learning with a mean score of 3.577 and it therefore least influenced the effectiveness of their performance.

4.4.3 The Learning Environments that the Respondents Learn Best

The researcher inquired on the learning environments in which the respondents learn best as shown in table 4.6.

Table 4.6: Learning Environments

Learning Environment	Mean	Standard deviation
Immediate clinical environment	4.731	0.490
Internal environment	4.346	0.837
Formal educational environment	3.885	0.041
External environment	3.750	0.100

According to the findings, the respondents learn best in immediate clinical environment (wards and theatre) and internal environment (hospital, nursing home and clinics) with a mean score of 4.731 and 4.346 respectively and this greatly contributes to their performance. On the other hand, the respondents indicated that they least learned in formal educational environments (classroom and auditorium) and external environment (out-of-work like hotels) with a mean score of 3.885 and 3.750 respectively.

4.4.4 Additional skills that Should Form Part of CPD Activities

The researcher inquired on additional skills that should form part of CPD activities apart from Continuous Medical Education as shown in table 4.7.

Table 4.7: Additional Skills that should form part of CPD apart from Continuous Medical Education

Additional Skills	Mean	Standard deviation
Management skills	4.692	0.771
Leadership skills	4.653	0.520
Mentorship skills	4.634	0.627
Quality Management skills	4.539	0.728
Communication skills	4.385	0.572
Team building skills	4.365	0.595
Information Technology	4.346	0.789
Behavioural skills	3.923	0.043

According to the findings, management skills, leadership skills, mentorship skills, quality management skills, communication skills, team building skills and information technology were strongly agreed upon that for effective performance, they should form part of Continuous Professional Development apart from Continuous Medical Education with mean scores of 4.692, 4.653, 4.634, 4.539, 4.385, 4.365 and 4.346 respectively. On the other hand, behavioural skills was least strongly agreed that they should form part of CPD with a mean score of 3.923.

4.4.5 Hypothesis Testing for Formal Learning

At 95% confidence interval (0.05 level of significance), formal learning (with t statistic p value $<0.001 < 0.05$) is highly significant. Therefore, the null hypothesis H_0 : Formal learning in continuous professional development has no significant influence on doctors' performance is therefore rejected hence the alternate hypothesis H_1 is accepted meaning there is a high significance between CPD formal learning and doctors performance.

4.5 CPD Mentorship Program and Doctor's Performance

The researcher sought to find the relevance of mentorship to doctors' performance and the attributes of an effective role model.

4.5.1 Relevance of Mentorship to Doctors' Performance

The study sought to find out from the respondents the relevance of mentorship programs to doctors' performance as shown in table 4.8.

Table 4.8: Relevance of mentorship to Doctor's Performance

Responses	Mean	Std.D
Enhancement of teamwork and networking with other colleagues	4.192	0.971
Encourage collaborative learning from past experiences	4.173	0.004
Assist to determine knowledge gap in my practice	4.173	0.964
Improvement of leadership and management skills	4.154	0.978
Regained confidence and job satisfaction	4.135	0.958
Increased my intrapersonal and interpersonal development	4.039	0.938
Career Progression	3.308	0.590

According to the findings, the respondents indicated that mentorship programs were relevant in the influence of doctors' performance in the aspects of enhancement of teamwork and networking with other colleagues with a mean score of 4.192. Encouragement of collaborative learning from past experiences and assisting to determine knowledge gap in their practice was expressed through the same mean score of 4.173 each. Improvement of leadership and management skills had a mean score of 4.154. Regained confidence and job satisfaction and increase of intrapersonal and interpersonal development had a mean of 4.135 and 4.039 respectively. Career progression through mentorship program was the least relevant with mean a score of 3.308. According to the findings, most of the respondents (63.5%) indicated that the mentorship program should be voluntary. 36.5% of the respondents indicated that the mentorship program should be official.

4.5.2 Role Modelling and Doctors Performance

The study sought to find out the importance of role modelling in doctors' performance.

Table 4.9: Role Modelling

Response	Frequency	Percentage %
Strongly agree	42	80.8
Agree	10	19.2
Total	52	100

According to the findings, 42 respondents (80.8%) strongly agreed while 10 respondents (19.2%) agreed that role modelling was a powerful form of learning and if it is essential to the transmission of values, attitudes and behaviour in doctors' performance.

4.5.3 Opinion of the Respondents on Attributes of an Effective Role Model

The researcher sought to find out from the respondents their opinion of an effective role model as shown in 4.10.

Table 4.10: Attributes of an effective role model

Effective Role Model	Mean	Std.D.
Demonstrates high standards of clinical competence	4.596	0.774
Has humanistic personal qualities	4.539	0.777
Has excellence in clinical teaching skills	4.519	0.780
Shapes my professional development and career choices	4.462	0.851
Has high academic and research achievement	3.769	0.103
Engaged in senior management roles and demonstrates professional leadership	3.615	0.147
With high professional status and power	2.827	0.232
Has high earnings	2.712	0.997

From the findings, respondents highly indicated that an effective role model is one who demonstrates high standards of clinical competence, one who has humanistic personal qualities, one who has excellence in clinical teaching skills and one who shapes their professional development and influences their career choices as expressed by the mean scores 4.596, 4.539, 4.519 and 4.462 respectively. Other respondents moderately associated an effective role model with one who has a high academic and research achievement and one who engaged in senior management roles and demonstrates professional leadership as expressed by the mean scores 3.769 and 3.615 respectively. The attributes of an effective role model that least featured included high earnings and high professional status and power as indicated by mean scores 2.827 and 2.712 respectively.

4.5.4 Hypothesis Testing for Mentorship Programs

At 95% confidence interval (0.05 level of significance), mentorship program (with t statistic p value $<0.004 < 0.05$) is significant but not as highly significant as formal learning. Therefore, the null hypothesis H_0 : Mentoring programs in continuous professional development has no significant influence on doctors' performance is therefore rejected hence the alternate hypothesis H_2 is accepted meaning there is a significance between mentorship program and doctors performance.

4.6 Implementation of CPD Cycle and Doctors' Performance

The researcher sought to find the extent to which respondents implement the CPD cycle, how they determined their need for CPD, their reasons for participating in CPD activities, the importance of evaluation and documentation of CPD and how CPD influences doctor's performance. The researcher also sought to find out if the respondents were aware of the MPDB online CPD platform.

4.6.1 Implementation of Continuous Professional Development Cycle

The researcher sought to find out from the respondents, the elements of CPD Cycle that they implemented during their Program as shown in table 4.11.

Table 4.11 Implementation of CPD Cycle

CPD Cycle Stages	Response	Frequency	Percentage %	Mean	Std. D
Appraisal	Yes	30	57.7	1.462	0.499
Planning	Yes	27	51.9	1.192	0.505
Implementation	Yes	42	80.8	1.481	0.398
Reflection	Yes	29	55.8	1.442	0.502
Documentation	Yes	28	53.8	1.423	0.503

According to the findings, the most implemented CPD cycle stage included implementation through participation in CPD activities at 80.8%. This was followed by appraisal, reflection and documentation at 57.7%, 55.8% and 53.8% respectively. The least implemented CPD Cycle stage included planning at 51.9%.

Table 4.12 Reasons for Implementation of Activities Stage in the CPD Cycle

Responses	Mean	Standard deviation
Updated with new specialty developments	3.596	0.664
Career progression	3.539	0.576
To network with other colleagues	3.423	0.723
To fulfil PDP goals and objectives	3.214	0.723
Additional qualification	3.019	0.864
To be prepared to mentor junior colleague	2.904	0.947
To improve Curriculum Vitae	2.731	0.012
To get break from pressures of work	2.058	0.162
Only for re-licensure and fulfilment of regulatory requirements	2.000	0.268

According to the findings, majority of the respondents indicated that they engaged in implementation stage of CPD Cycle for the purposes of being updated with new developments in their speciality as expressed by a mean score of 3.596. They also indicated that they participated in CPD activities for the purpose of career progression, networking with other colleagues, to fulfil PDP goals and objectives, and for additional qualifications with mean scores of 3.539, 3.423, 3.214 and 3.019 respectively. To be prepared to mentor junior colleagues, to improve their CV, to get break from pressures of work as expressed by mean scores 2.904, 2.731 and 2.058 respectively. The least reason for implementation of CPD activities in the CPD cycle was indicated that they only participated for re-licensure and for fulfilment of regulatory requirements with a mean score of 2.000.

Table 4.13 Importance of Evaluation and Documentation

Responses	Mean	Std. D
To identify future learning needs	4.462	0.767
To improve on problem solving and decision making	4.385	0.728
To determine whether my learning needs have been met	4.365	0.768
To analyse complex clinical situations	4.308	0.729
To prepare to deal with unpredictable future clinical demands	4.212	0.936

According to the findings, majority of the respondents indicated that evaluation and documentation of CPD activities were more important in identification of future learning needs and in improvement of problem solving and decision making as expressed by a mean scores of 2.462 and 2.385 respectively. This was followed by determination of whether their learning needs had been met, ability to analyse complex situations and to be prepared to deal with unpredictable future clinical demands with mean scores of 2.365, 2.308 and 2.212 respectively.

Table 4.14 Awareness of MPDB Online Platform of Documentation by the Respondents

Responses	Frequency	Percentage %
Yes	34	65.4
No	18	34.6
Total	52	100

From the findings, 34 respondents (65.4%) indicated that they were aware of the Medical Practitioners and Dentists Board online platform of documentation of CPD activities while 18 respondents (34.6%) indicated that they were not aware of the platform.

4.6.2 Hypothesis Testing for Implementation of CPD Cycle

At 95% confidence interval (0.05 level of significance), implementation of CPD Cycle (with t statistic p value ($p = 0.485 > 0.05$) is not significant. Therefore, the null hypothesis H_0_3 : Implementation of Continuous Professional Development Cycle has no significant influence on doctors' performance is therefore accepted hence the alternate hypothesis H_3 is rejected meaning there is no significance between implementation of CPD Cycle and doctors performance.

4.7 Continuous Professional Development and Doctors' Performance

The researcher sought to find the general influence of Continuous Professional Development on doctors' performance as shown in table 4.15.

Table 4.15 Continuous Professional Development and Doctors Performance

Responses	Mean	Standard deviation	Variance
Knowledge acquisition	4.519	0.572	0.327
Improved patients care and safety	4.519	0.577	0.333
Reduce on malpractice cases	4.308	0.864	0.746
Change in diagnosis/ treatment practice	4.269	0.823	0.677
Change in attitude	4.269	0.789	0.623
Change in departmental/ unit practice	4.231	0.854	0.730
Impact on junior colleagues	4.192	0.734	0.538
Learners' satisfaction	4.192	0.834	0.695
Impact on immediate colleagues	4.173	0.734	0.538

According to the findings, Continuous Professional Development influences doctors' performance through the acquisition of knowledge and improvement of patient care and safety to a very great extent as expressed by same mean score 4.519. CPD influences doctors' performance to a very great extent through reduction on malpractice cases with a mean score of 4.308. Change of diagnosis or treatment practice and change in attitude have a common means score of 4.269. This is followed by change in departmental or unit practice and with a mean score 4.231. Impact on junior colleagues and learners' satisfaction were expressed through the same mean score of 4.192 respectively. CPD influences doctor's performance to a moderate extent through impact of junior colleagues with means score of 4.173.

4.8 Multiple Regression Analysis

In addition, the researcher conducted a multiple regression analysis so as to establish the influence of Continuous Professional Development on doctors' performance.

Table 4.16: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.923 ^a	.852	.603	.52507

Coefficient of determination (R^2) explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (doctors' performance) that is explained by all the three independent variables (CPD formal learning program, mentorship program and implementation of CPD cycle).

The three independent variables that were studied explained 85.0% of variability in doctors' performance as shown by the R^2 in the Table 4.18 above. This therefore meant that other factors not studied in the research contributed to 15.0% variability in doctor's performance.

Table 4.17: Coefficient of Regression

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.380	0.243		1.559	.000
CPD Formal Learning	0.463	0.136	0.342	3.415	.001
Mentorship Program	0.175	0.083	0.149	2.109	.004
Implementation of CPD Cycle	-0.023	0.051	-0.049	-0.708	.485

The established model for the study was : $Y = 0.380 + 0.463X_1 + 0.175X_2 - 0.023X_3$

Where:

βx_1 , βx_2 , and βx_3 are independent or explanatory variables which are estimates of the population regression coefficients also called least squares coefficients.

βx_1 = CPD Formal Learning βx_2 = Mentorship Program βx_3 = Implementation of CPD Cycle

Y= is the dependent variable (Doctors' Performance)

Sig= is the significance at the 5% level of significance.

t= is the test statistic value also called t-value

The regression equation above has established that holding all other factors constant (CPD formal learning program, mentorship program and implementation of CPD Cycle) doctor's performance will be 0.380 which signifies marginally increasing performance.

Only two independent variables were significant in the model as the P-value obtained were less than 0.05 with CPD formal learning program having a significance of 0.001 and mentorship program having a significance of 0.004. Implementation of CPD cycle was not significant having a significance of 0.485. The study established that CPD formal learning programs had the highest influence on doctors' performance followed by mentorship program while implementation of CPD cycle had the lowest influence on doctors' performance.

CHAPTER FIVE
SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND
RECOMMENDATIONS

5.1 Introduction

This chapter presented the summary of findings, conclusion drawn from the findings highlighted and recommendation made there-to. The conclusions and recommendations drawn were focused on addressing the objectives of the study.

5.2 Summary of Findings

This section presented the summary of the key findings drawn from the objectives of the study.

5.2.1 Formal Learning and Doctors' Performance

The study found out that learning environment, methods and additional skills which form part of formal learning programs had a great influence on doctors' performance. Doctors learn best through experimental learning or interactive practise based learning and this has a very great influence on doctors' performance with a mean score of 4.886. Learning through self-directed learning like informal reading and online research had a mean score of 3.827. The respondents indicated that they least learned through the formal educational or passive learning with a mean score of 3.577 and it therefore least influenced the effectiveness of their performance.

Immediate clinical environment (wards and theatre) and internal environment (hospital, nursing home and clinics) with a mean score of 4.731 and 4.346 respectively were indicated as the best learning environments that influence doctors' performance. Formal educational environments (classroom and auditorium) and external environment (out-of-work like hotels) with a mean score of 3.885 and 3.750 respectively were considered least effective in influencing doctors' performance.

Apart from Continuous Medical Education, management skills, leadership skills, mentorship skills, quality management skills, communication skills, team building skills and information technology were strongly agreed upon that for effective performance, they should form part of Continuous Professional Development apart from Continuous Medical Education with mean scores of 4.692, 4.653, 4.634, 4.539, 4.385, 4.365 and 4.346 respectively. On the other hand, behavioural skills was least strongly agreed that they should form part of CPD with a

mean score of 3.923. Therefore management, leadership and mentorship skills should strongly be considered to form part of CPD apart from Continuous Medical Education.

At 95% confidence interval (0.05 level of significance), formal learning (with t statistic p value $<0.001 < 0.05$) was highly significant meaning that formal learning had a high significant influence on doctors' performance.

5.2.2. Mentorship program and Doctors' Performance

The study found that 63.5% of doctors strongly proposed that mentorship program should be voluntary while 36.5% proposed for the mentorship program to be official. From the study, mentorship programs were indicated to be relevant to doctors' performance in the aspects of enhancement of teamwork and networking with other colleagues with a mean score of 4.192. Encouragement of collaborative learning from past experiences and assisting to determine knowledge gap in their practice was expressed through the same mean score of 4.173 each. Improvement of leadership and management skills had a mean score of 4.154. Regained confidence and job satisfaction and increase of intrapersonal and interpersonal development had a mean of 4.135 and 4.039 respectively. Career progression through mentorship program was the least relevant with mean a score of 3.308.

According to the findings, it was evident that 80.8% of doctors strongly agreed while 19.2% agreed that role modelling was a powerful form of learning and if it is essential to the transmission of values, attitudes and behaviour in their performance. major attributes of an effective role model included one who demonstrates high standards of clinical competence, one who has humanistic personal qualities, one who has excellence in clinical teaching skills and one who shapes their professional development and influences their career choices as expressed by the mean scores 4.596, 4.539, 4.519 and 4.462 respectively. Other respondents moderately associated an effective role model with one who has a high academic and research achievement and one who engaged in senior management roles and demonstrates professional leadership as expressed by the mean scores 3.769 and 3.615 respectively. The attributes of an effective role model that least featured included high earnings and high professional status and power as indicated by mean scores 2.827 and 2.712 respectively.

At 95% confidence interval (0.05 level of significance), mentorship program (with t statistic p value $<0.004 < 0.05$) was significant but not as highly significant as formal learning. This

meant that mentorship program had a significant influence on doctors' performance but not as high as the significance of formal learning.

5.2.3 Implementation of Continuous Professional Development Cycle and Doctors' Performance

From the findings, the most implemented CPD cycle stage included implementation through participation in CPD activities at 80.8%. This was followed by appraisal, reflection and documentation at 57.7%, 55.8% and 53.8% respectively. The least implemented CPD Cycle stage included planning at 51.9%.

From the findings, majority of doctors engaged in implementation stage of CPD Cycle for the purposes of being updated with new developments in their speciality as expressed by a mean score of 3.596. They also indicated that they participated in CPD activities for the purpose of career progression, networking with other colleagues, to fulfil PDP goals and objectives, and for additional qualifications with mean scores of 3.539, 3.423, 3.214 and 3.019 respectively. To be prepared to mentor junior colleagues, to improve their CV, to get break form pressures of work as expressed by mean scores 2.904, 2.731 and 2.058 respectively. The least reason for implementation of CPD activities in the CPD cycle was indicated that they only participated for re-licensure and for fulfilment of regulatory requirements with a mean score of 2.000.

According to the findings, majority of the respondents indicated that evaluation and documentation of CPD activities were more important in identification of future learning needs and in improvement of problem solving and decision making as expressed by a mean scores of 4.462 and 4.385 respectively. This was followed by determination of whether their learning needs had been met, ability to analyse complex situations and to be prepared to deal with unpredictable future clinical demands with mean scores of 4.365, 4.308 and 4.212 respectively. 65.4% of doctors indicated that they were aware of the Medical Practitioners and Dentists Board online platform of documentation of CPD activities while 34.6% were not aware of the platform.

At 95% confidence interval (0.05 level of significance), implementation of CPD Cycle (with t statistic p value ($p = 0.485 > 0.05$) was not significant meaning that implementation of CPD cycle had no significant influence on doctors' performance.

5.2.4 Continuous Professional Development and Doctors' Performance

Continuous Professional Development influences doctors' performance through the acquisition of knowledge and improvement of patient care and safety to a very great extent as expressed by same mean score 4.519. CPD influences doctors' performance to a very great extent through reduction on malpractice cases with a mean score of 4.308. Change of diagnosis or treatment practice and change in attitude have a common means score of 4.269. This is followed by change in departmental or unit practice and with a mean score 4.231. Impact on junior colleagues and learners' satisfaction were expressed through the same mean score of 4.192 respectively. CPD influences doctor's performance to a moderate extent through impact of junior colleagues with means score of 4.173.

5.3 Discussion

This section presents the discussion based on the key data findings drawn from the objectives of the study.

5.3.1 Formal Learning and Doctors' Performance

This study revealed that formal learning to a great extent influenced doctors' performance. More specifically, doctors learn best through experimental learning or interactive practise based learning as compared to learning through self-directed learning and formal educational or passive learning. This was in line with IOM (2010) and Filipe et al., (2014) who proposed that the best learning methods lie in the field of adult learning or andragogy where experimental learning, self- directed learning and lifelong learning are critical in the continuous education delivery methods. According to (IOM, 2009; 2010; French, 2006 and Filipe *et al.*, 2014, formal learning was implicated as a more structured and systematic training integrated into health facility protocols. It is often associated with didactic, schematic, largely teacher-driven learning methods such as lectures conducted in traditional settings like auditoriums which narrowly focuses on clinical education and predominantly builds on education theory.

Doctors learn best in immediate clinical environment (wards and theatre) and internal environment (hospital, nursing home and clinics) and this to a great extent influences their performance. Formal educational environments (classroom and auditorium) and external environment (out-of-work like hotels) least influenced their effective learning and performance. This was in line with the findings of Ndege and Kioko, (2006) who advocated

that opportunities to benefit from CPD in doctors performance mainly depended on their learning and working environment.

Apart from Continuous Medical Education, this study found that leadership skills, mentorship skills, management skills, communication skills, quality management skills, team building skills and information technology should form part of Continuous Professional Development. Behavioural skills were least considered to form part of CPD skills. This study therefore concurred with the findings by Muriuki & Gitonga (2014) who stated that doctors play different roles: medical expert, health- advocate, communicator, collaborator, team-worker, scholar, administrator and manager. Therefore CPD should adopt a broader concept and a more holistic approach with wide range competencies to ensure improved patients' service, research outcomes and attainment of the highest degree of satisfaction by stakeholders

5.3.2. Mentorship program and Doctors' Performance

The study found that 63.5% of doctors strongly proposed that mentorship program should be voluntary while 36.5% proposed for the mentorship program to be official. This study concurred with Department of Health (2004) which proposed that mentoring should be promoted in a natural way by which doctors can enhance their careers. Participation in mentorship should remain entirely voluntarily; access to mentorship to be made as wide as possible and that doctors can choose a scheme to participate or request for mentors from outside restricted groups or organizations.

From the study, mentorship programs were considered to be relevant to doctors' performance in the aspects of career progression, enhancement of teamwork and networking with other colleagues, encouraging collaborative learning from past experiences, assisting to determine knowledge gap in their practice, improvement of leadership and management skills and regained confidence and job satisfaction. Increase of intrapersonal and interpersonal development through mentorship program was the considered least relevant to doctors' performance. This was in line with Cowan and Flint, (2012), who stated that CPD mentoring whether consciously or unconsciously holds the future of medicine as new skills, knowledge and techniques are shared between colleagues, team work is enhanced, leadership skills are developed and role models are nurtured for a sustainable quality of practice.

According to the findings, it was evident that 80.8% of doctors strongly agreed and 19.2% agreed that role modelling is a powerful form of learning and if it is essential to the

transmission of values, attitudes and behaviour in their performance. This study found that the most important qualities of effective role models described those demonstrated high standards of clinical competence, had humanistic personal qualities, had excellence in clinical teaching skills and one who shaped their professional development and influenced their career choices. Those with high academic and research achievement and those who engaged in senior management roles and demonstrated professional leadership were moderately associated effective role model. The attributes that did not feature highly were high earnings and high professional status and power. This confirmed the survey that was carried out by Paice, Heard and Moss (2002).

5.3.3 Implementation of Continuous Professional Development Cycle and Doctors' Performance

This study revealed that implementation of CPD Cycle had a minimal influence on doctors' performance. This study deduced that doctors mostly participated in the implementation followed by the appraisal, evaluation and documentation stages of CPD Cycle which to a great extent influenced their performance. However, doctors least participated in the planning stage of the CPD program and this least influenced doctors' performance. This confirmed the fact that Medical Practitioners and Dentists Board, CPD Guidelines (2014), has not captured the Personal Development Plan tool which should enable the personalization of continuous professional development program, for the purposes of individual change in practice (HSCPC, 2013).

According to this study, implementation of CPD cycle through participation in CPD activities after planning was majorly undertaken by doctors in order to be updated with new developments in their speciality, career progression, networking with other colleagues, to fulfil PDP goals and objectives, and for additional qualifications. To be prepared to mentor junior colleagues, to improve their CV, to get break from pressures of work were moderately considered to be the reason they implement to CPD cycle. Re-licensure and for fulfilment of regulatory requirements were considered as the least reason for implementation of activities in the CPD Cycle.

This study found that evaluation and documentation of CPD activities were important in influencing doctors' performance through the identification of future learning needs, improvement of problem solving and decision making. Determination of whether their learning needs had been met, ability to analyse complex situations and to be prepared to deal

with unpredictable future clinical demands moderately influenced doctors' performance. Evaluation or reflection helps doctors to analyse complex situations, consider the way they make decisions, make connections, improve on problem solving skills and identify future learning needs.

Filipe *et al.* (2014) who proposed the use of an e-portfolio which documents an individual's professional progression as a web based collection of artefacts like reflection, resources, accomplishments and time periods. This study found that 65.4% of doctors were aware of the Medical Practitioners and Dentists Board online platform of documentation of CPD activities while 34.6% were not aware of the platform.

5.4 Conclusion of the Study

This study concluded that formal learning program to a very great extent influenced doctors' performance through aspects such as experimental learning or interactive practise based learning, learning in immediate clinical environment (wards and theatre) and internal environment (hospital, nursing home and clinics). This study also concluded that apart from Continuous Medical Education, leadership skills, mentorship skills, management skills, communication skills, quality management skills, team building skills and information technology should form part of Continuous Professional Development in order for it to have broader concept and a more holistic approach with wide range competencies to ensure improved patients' service, research outcomes and attainment of the highest degree of satisfaction by stakeholders.

This study concluded that mentorship programs influenced doctors' performance to a great extent in the aspects of career progression, enhancement of teamwork and networking with other colleagues, encouraging collaborative learning from past experiences, assisting to determine knowledge gap in their practice, improvement of leadership and management skills and regained confidence and job satisfaction. Mentorship program should be voluntary rather than official. This study also concluded that role modelling in medicine is a powerful form of learning and it is essential to the transmission of values, attitudes and behaviour in doctors' performance. This study further concluded that effective role models were those who demonstrated high standards of clinical competence, had humanistic personal qualities, had excellence in clinical teaching skills and one who shaped their professional development and influenced their career choices. Those with high academic and research achievement and those who engaged in senior management roles and demonstrated professional leadership

were moderately associated effective role model. The attributes that did not feature highly were high earnings and high professional status and power.

This study also concluded that implementation of Continuous Professional Development cycle influenced doctors' performance to a minimal extent through appraisal, evaluation and documentation stages. This is because majority of the doctors least participated in the planning stage of the CPD program and this least influenced their performance. The planning stage is crucial for the subsequent stages in the cycle. This study further concluded that implementation of the cycle through participation in Continuous Professional Development activities after planning was majorly undertaken by doctors in order for them to be updated with new developments in their speciality, for career progression, networking with other colleagues, to fulfil Personal Development Plan goals and objectives and for additional qualifications. Preparation to mentor junior colleagues, improvement of their Curriculum Vitae and to get break from pressures of work were moderately considered as reasons for implementation of this cycle. However, implementation of activities in the cycle for re-licensure and for fulfilment of regulatory requirements were considered as the least reason for participation in Continuous Professional Development.

This study also concluded that evaluation and documentation of CPD activities were important in influencing doctors' performance through the identification of future learning needs, improvement of problem solving and decision making. Determination of whether their learning needs had been met, ability to analyse complex situations and to be prepared to deal with unpredictable future clinical demands moderately influenced doctors' performance. This was in line with World Federation Medical Education (2003), who found that evaluation or reflection helps doctors to analyse complex situations, consider the way they make decisions, make connections, improve on problem solving skills and identify future learning needs. This study concluded that Continuous Professional Development influences doctors' performance to a very great extent through the acquisition of knowledge and improvement of patient care and safety. It also influences doctors' performance to a very great extent through reduction on malpractice cases, change of diagnosis or treatment practice, change in attitude, change in departmental or unit practice, impact on immediate colleagues and learners' satisfaction. Continuous Professional Development influences doctor's performance to a moderate extent through impact of junior colleagues.

5.5 Recommendations of the Study

Formal learning program to a very great extent influences doctors' performance through aspects such as experimental learning or interactive practise based learning, learning in immediate clinical environment (wards and theatre) and internal environment (hospital, nursing home and clinics) and additional skills such as leadership, mentorship, management, communication, quality management, team building and information technology. Under the formal learning program, this study recommends that;

Due to rapid changes in health care delivery system, health professionals should gradually transform from a pure continuing medical education to a continuous professional development Therefore, CPD should adopt a broader concept and a more holistic approach with wide range competencies to ensure improved patients' service, research outcomes and attainment of the highest degree of satisfaction by stakeholders.

Continuous Professional Development methods should be geared towards quality improvement by mainly teaching not only on how to identify problems and how to apply solutions but to also focus on actual performance. This is in line with adult learning where experimental learning is important to the development and retention of intuitive skills central to a complex craft in medicine.

Since doctors play different roles: medical expert, health- advocate, communicator, collaborator, team-worker, scholar, administrator and manager, the learning content should include medical and social science skills. These skills need to strengthen through Continuous Professional Development. The content should also be diverse in order to meet narrower and broader needs of doctors and flexible in order to meet the emergent needs as soon and as far as possible.

Mentorship programs to a great extent influences doctors' performance in the aspects of career progression, enhancement of teamwork and networking with other colleagues, encouraging collaborative learning from past experiences, assisting to determine knowledge gap in their practice, improvement of leadership and management skills and regained confidence and job satisfaction. This study therefore recommends that;

Doctors in consultation with their peers and professional organizations should define competencies or benefits to be achieved as a result of CPD to enhance learning through teamwork.

To make the most out of CPD mentorship, doctors should take advantage of the variety of learning modalities, join educational networks and engage in development of their colleagues by sharing their experiences and benefiting from collaborative learning.

Mentorship should be promoted in a natural way by which doctors can enhance their careers, participation should remain entirely voluntarily and access to mentorship should be made as wide as possible.

From the conclusion, implementation of CPD cycle influenced doctors' performance to a minimal extent through appraisal, evaluation and documentation stages of CPD Cycle. However, from the study doctors least participated in the planning stage of the CPD program and this least influenced their performance. This study therefore recommends that;

Medical Practitioners and Dentists Board should capture the Personal Development Plan tool in the CPD guidelines so that doctors will be able to personalize CPD programs for the purposes of individual change in practice.

Medical Practitioners and Dentists Board should do an extensive dissemination of the online platform of CPD documentation so that doctors stand to embrace and leverage these media tools.

5.6 Suggestion for Further Studies

Another study should be done to investigate the influence of Continuous Professional Development on patients' outcomes and services. Further studies should be carried out to determine the factors that influence participation of doctors in CPD. Further studies should be done on the effective implementation of the CPD Cycle and its influence on Continuous Professional Development in Kenya.

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APPENDIX I
LETTER OF TRANSMITTAL OF DATA COLLECTION INSTRUMENTS

Beverly Cheptoo Ngeny
P. O. BOX 44839-00100
NAIROBI
Tel: 0725 919908

Dear Respondent,

**RE: RESEARCH ON INFLUENCE OF CONTINUOUS PROFESSIONAL
DEVELOPMENT ON DOCTORS PERFORMANCE IN KENYA**

I am a student at the University of Nairobi pursuing a postgraduate degree leading to the award of Master of Arts in Project Planning. As part of my course, I am required to carry out a research on the above topic.

Doctors practising in Nairobi County have been selected to participate in the study. I kindly request you to fill for me the attached questionnaire with sincerity. The information you shall give shall be treated with utmost confidentiality and shall be used for academic purposes only.

Kindly do not write your name anywhere on the questionnaire.

Yours' faithfully,

Beverly C. Ngeny

APPENDIX II
QUESTIONNAIRE

This questionnaire is designed to help explore some of the issues associated with the influence of CPD formal learning, mentorship and implementation of CPD Cycle on doctors' performance in Kenya. Your cooperation in completing this would be much appreciated. Responses will be anonymous and comments will be attributable to individuals. Please note that your participation in this study will be voluntary

SECTION A: Demographic Characteristics of Respondents

Kindly provide the following information about yourself, professional qualification and practice

1. Age:
2. Gender: Male Female
3. Total number of years of experience:
A. < 1 year B. 1 - 5 years C. 6 – 10 years D. 11 - 15 years E. >15 years
4. Please indicate your current place of practice:
A. Public Institution B. Private Institution C. Private Consultancy Clinic
5. At the place of practice, you are a
A. Medical Officer/ Dental Officer B. Private Practitioner C. Specialist

SECTION B: Formal learning program and doctors' performance

6. Do you regularly participate in CPD activities? Yes No
7. What activities have you participated in the past 12 months. **Tick all that apply**

Statements	√
Conferences/ Workshops/ Seminars	
Professional Associations Events	
E – Learning modules	
Local Hospital Events	
Morbidity and Mortality meetings	
Clinical meetings	
Hands on	
Journal Clubs	
Short courses or Refresher courses	
Author or Co – Author of Peer reviewed publications	

8. Which of the following learning methods influence your performance?

Statements	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
Formal educational learning – (passive learning)					
Experimental learning – (interactive practice-based learning)					
Self – directed learning (informal reading, online research)					

9. In your opinion, which of the following learning environments do you learn best?

Statements	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
Formal educational environment e.g. classroom, auditorium					
Immediate clinical environment e.g. Wards, Theatre					
Internal environment e.g. Hospital, Nursing home, Clinics					
External environment (Out-of-work) e.g. hotels					

10. In your own opinion, which of the following skills apart from Continuous Medical Education should form part of CPD activities?

Statements	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
Communication skills					
Leadership skills					
Management skills					
Behavioural skills					
Team building skills					
Information Technology					
Quality Management skills					
Mentorship skills					

11. In your opinion, who should determine the content and quality of CPD program?

Statements	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
Doctors themselves					
CPD Accredited Providers					
Health Regulatory Bodies					
Employers					

SECTION C: Continuous professional development mentorship program and doctor's performance

12. a). Do you have a mentor in your profession? **YES** **NO**

b). Are you a mentor? **YES** **NO**

13. In your opinion, in what way has mentorship been relevant to your performance?

Statements	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
Career progression					
Improvement of leadership and management skills					
Encourage collaborative learning from past experiences					
Enhancement of teamwork and networking with other colleagues					
Assist to determine knowledge gap in my practice					
Increased my intrapersonal and interpersonal development					
Regained confidence and job satisfaction					

14. Mentoring Program should be: **Tick in the Box** Voluntary Official

15. Role modelling in medicine is a powerful form of learning and it is essential to the transmission of values, attitudes and behaviour

A. Strongly agree B. Agree C. Uncertain D. Disagree E. Strongly Disagree

16. Do you have a role model in your profession? **YES** **NO**

17. Who in your opinion is an effective role model?

Statements	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
One who demonstrates high standards of clinical competence					
One who has excellence in clinical teaching skills					
One who has humanistic personal qualities like compassion for patients, integrity					
One who shapes my professional development and influences my career choices					
One who has high academic and research achievement					
One who has high earnings					

One with high professional status and power					
One engaged in senior management roles and demonstrates professional leadership					

SECTION D: Implementation of CPD Cycle and doctors' performance

18. During your CPD Program, to what extent does implementation of the following stages influence your performance?

Statements	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
Appraisal or need assessment to determine your learning needs					
Planning on how to meet the identified learning needs					
Attending CPD activities to meet the identified and planned needs					
Evaluation or reflection of what you have learnt					
Document the activities indicating how they have met your learning objectives					

19. Indicate your reasons for participating in the implementation stage of CPD Cycle.

Statements	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
Only for re-licensure and to fulfilment of regulatory requirements					
To obtain additional qualification					
For career progression					
To network with other medical colleagues					
To be updated with new developments in my speciality					
To improve my Curriculum Vitae					
To fulfil my Personal Development Plan goals and objectives					
To get a break from pressures of work					
To be prepared to mentor my junior colleagues					

20. Do you consider CPD to be important to doctors? **Tick one**

YES	
NO	

21. In general, in what ways was does CPD influence your performance?

Statements	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
Change in attitude					
Change in departmental / unit practice					
Change in diagnosis and treatment practice					
Impact on immediate colleagues					
Impact on junior colleagues					
Improved patients' care and safety					
Knowledge acquisition on evidence-based care					
Leaners satisfaction					
Reduce on malpractice cases					

22. In what ways do you think evaluation and documentation of CPD Cycle is important to doctors' performance?

Statements	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
It helps to determine whether my learning needs have been met					
It enables me to analyse complex clinical situations					
It assists me to improve on problem solving and decision making					
It helps me to identify future learning needs					
It enables me to prepare to deal with unpredictable future clinical demands					

23. Are you aware of the MPDB online platform for CPD documentation?

YES **NO**

APPENDIX III
INTRODUCTION LETTER FROM THE UNIVERSITY



UNIVERSITY OF NAIROBI
COLLEGE OF EDUCATION AND EXTERNAL STUDIES
SCHOOL OF CONTINUING AND DISTANCE EDUCATION
DEPARTMENT OF EXTRA-MURAL STUDIES
NAIROBI EXTRA-MURAL CENTRE

Your Ref:

Our Ref:

Telephone: 318262 Ext. 120

Main Campus
Gandhi Wing, Ground Floor
P.O. Box 30197
N A I R O B I

1st August 2014

REF: UON/CEES//NEMC/19/035

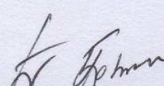
TO WHOM IT MAY CONCERN

RE: BEVERLY CHEPTOO NGENY - REG. NO L50/61342/2013

This is to confirm that the above named is a student at the University of Nairobi College of Education and External Studies, School of Continuing and Distance Education, Department of Extra- Mural Studies pursuing Master of Arts in Project Planning and Management.

She is proceeding for research entitled "**influence of Continous Professional Development on Doctors performance in Kenya**". A case of Nairobi County.

Any assistance given to her will be highly appreciated.


CAREN AWILLY
CENTRE ORGANIZER
NAIROBI EXTRA MURAL CENTRE




APPENDIX IV



RESEARCH PERMIT

THIS IS TO CERTIFY THAT:

MS. BEVERLY CHEPTOO NGENY
of UNIVERSITY OF NAIROBI, 44839-100
Nairobi, has been permitted to conduct
research in Nairobi County
on the topic: *INFLUENCE OF*
CONTINUOUS PROFESSIONAL
DEVELOPMENT ON DOCTORS
PERFORMANCE
for the period ending:
30th September, 2014



Permit No : NACOSTI/P/14/5527/3004
Date Of Issue : 18th August, 2014
Fee Received :Ksh 1,000


Applicant's
Signature



Secretary
National Commission for Science,
Technology & Innovation

CONDITIONS

- 1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit**
- 2. Government Officers will not be interviewed without prior appointment.**
- 3. No questionnaire will be used unless it has been approved.**
- 4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
- 5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.**
- 6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.**


REPUBLIC OF KENYA

NACOSTI
National Commission for Science,
Technology and Innovation

RESEARCH CLEARANCE
PERMIT

Serial No. A. 2896

CONDITIONS: see back page